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Factors influencing the behavior of online group-buying in Taiwan

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This study presents three perspectives of sociology, economics, and psychology to investigate factors influencing the behavior of online group-buying. In Taiwan, group-buying is a unique online business model with great potential for influencing e-business. The study collects information on the demands of consumers to increase bargaining power and get volume discounts or better purchase conditions. In the past, most research focused on the viewpoint of pricing, however, this paper proposes an empirically validated comprehensive model. Data was collected from 327 buyers in an online group-buying marketplace in Taiwan. The results indicate that reciprocal and conformism of social perspective have the most significant impact on group-buying intentions, followed by the factor of trust from the psychological perspective, and finally the factor of price consciousness and demand externalities from the economic perspective. However, the consumers' actual behavior is not affected by their intentions.

Key words: Group-buying, virtual community, trust, reciprocity, conformity.

INTRODUCTION

Due to the rapid development of the Internet, many business activities have taken various forms. As a result, online shopping has become quite a trend, consumers can buy goods in physical stores but they can also purchase them on the Internet, which creates more choices for the consumers. Online group-buying gathers consumers who have a demand for some service or product (Chen et al., 2002). It removes geographical limits and increases the ability to negotiate price or better purchase conditions. This is a new way of creating economies of scale (Kauffman and Wang, 2001; Li et al., 2004). Web-based group-buying mechanisms are being widely used for both business-to-business (B2B) and business-to-consumer (B2C) transactions; buyer and sellers believe that the group-buying mechanisms can lead to better profits (Anand and Aron, 2003). In Taiwan, the mechanisms of online group-buying originated from auction websites, which use promotional methods that offer quantity based discounts or free shipping. The mechanism attracted consumers to form new communities. The Market Intelligence and Consulting Institute (MIC) estimates that Taiwan's online shopping market reached NT$ 3,583 million in 2010, an annual growth rate of 21.5%. There are 2,053 million customers in the B2C market (57.3%) and 1,530 million in the C2C market (42.7%). The MIC predicts that Taiwan's online shopping market is expected to reach the scale of NT$ 4,300 million in 2011, an annual growth rate of 20%. The MIC's report indicates that 11% of users adopted online group-buying behavior. At least once a month, the users' group-buying was up to 18.5%, this growth rate cannot be ignored (MIC's Report, 2010).

In the past, most studies considered that the price factor mostly affects the purchase intention (Anand and Aron, 2003; Li et al., 2004; Chen et al., 2009; Li et al., 2010). Group-buy operators seek to aggregate disparate buyers (who can operate remotely and asynchronously) via the Web by providing them with price-based incentives for volume purchases. Besides, offering quantity based discounts is a simple but effective way of
demand is the higher utility as potential adopters perceive demand curves, and the key driver for the increased good or a service will shift, resulting in what are called externalities and social standards. This study tries to integrate consumer decision making is affected by personal attitudes and Javidani, 2010). According to rational action theory, the reference group, and other factors (Keeney, 1999; Hummel and Lechner, 2002; Ridings et al., 2002; Preece and Maloney-Krichmar, 2003; Chang et al., 2010; Azizi and Javidani, 2010). According to rational action theory, consumer decision making is affected by personal attitudes and social standards. This study tries to integrate theses perspectives of sociology, economics, and psychology to investigate factors influencing consumers' intentions and behavior in online group-buying.

LITERATURE REVIEW AND THE DEVELOPMENT OF HYPOTHESES

Economic perspective

Based on Kauffman and Wang (2001), demand externalities expect that the current group size, determined by the number of orders, will influence the purchase decisions of potential buyers. These demand interdependencies are referred to in the literature as positive demand externalities or network externalities (Xie and Sirbu, 1995). The overall effect is the demand curve for a good or a service will shift, resulting in what are called demand externalities. However, demand externalities are not the same as price change-induced demand. Demand will increase in the presence of lower prices. Demand externalities take effect through the upward shift of demand curves, and the key driver for the increased demand is the higher utility as potential adopters perceive the advantages of the larger network size.

H1a: Demand externalities will influence the group-buying intention of consumers.

Price consciousness has been defined in the marketing literature in slightly different ways, including a buyer’s “unwillingness” to pay a higher price for a product and/or “the exclusive focus” on paying lower prices (Sinha and Batra, 1999). When consumers perceive the enforcement cost of the price-matching guarantee to be high, they interpret the policy as a low price signal, leading to their increased confidence in the low price, increased likelihood of buying from the retailer, and reduced price search at competitive retail outlets when they face high search costs (Kukar-Kinney and Grewal, 2006).

H1b: Price consciousness will influence the group-buying intention of consumers.

Price sensitivity refers to the extent to which individuals perceive and respond to changes or differences in prices for products or services (Monroe, 1973; Wakefield and Inman, 2003). When consumers try their best for a lower price, those consumers are defined as price-sensitive (Wakefield and Inman, 2003). Planned future price increases should be communicated to consumers as well as planned price cuts, since it gains from the decreased uncertainty more than offsets the loss from the delay in purchase behavior (Winer, 1985).

H1c: Price sensitivity will influence the group-buying intention of consumers.

Social perspective

Reciprocity is a basic feature of the online community; it determines whether a community is a success or a failure. If members receive some support or social resources from the community, their feedback behavior is probably positive and reciprocal (Preece and Maloney-Krichmar, 2003; Wellman and Gulia, 1999). Reciprocity is a motivating factor for knowledge sharing. Hall (2001) defines two types of reciprocity: (1) Direct: Two individuals associate long enough for each to play the roles of receiver and giver of favors; (2) Indirect: Third parties donate favors without the expectation of a return from the receiver. When members expect a more reciprocal relationship, knowledge sharing intention is higher.

H2a: Reciprocity will influence the group-buying intention of consumers.

Conformity is a type of social influence involving a change in belief or behavior to fit into a group. When a consumer is a conformist buyer, they will buy something without planning to, even though it is not to their preference. They use this behavior to establish an identity within a group (Lascu and Zinkhan, 1999).

H2b: Conformism will influence the group-buying intention of consumers.

Psychological perspective

Trust is an important issue in shopping intentions. Gefen (2000) argued that trust is shown by uncertain and asymmetric data, and trust is the main mechanism in e-commerce for reducing uncertainty in the society. If server providers do not have enough trust from consumers, they will obviously not have orders because consumers do not want to be taken advantage of (Keeney, 1999; Bailey and Bakos, 1997; Gefen, 2000) Jarvenpaa et al. (2000) proved trust can be an antecedent factor for transaction intention and is related to attitude and behavior.
When community members feel there is trust in the community, it can affect the shopping motives. The shopping motive will be high if the community trust is higher.

H₃: Trust will influence the group-buying intention of consumers.

Ridings et al. (2002) explored several downstream effects of trust in virtual communities and the antecedents of trust in this unique type of environment. The three factors of antecedents of trust are perceived responsiveness, others' disclosing personal information, and disposition trust.

An individual who posts messages on a community board most often expects some type of response. If an individual posts a message and there are no responses, trust in others will not develop. If others respond quickly and often, it may be they have the skills and competencies to be able to exchange accurate and helpful information, thereby building belief in their ability. Someone who has competency in an area would be able to be more responsive. Likewise, greater responsiveness from others would indicate a willingness to help other community members and also increases the reciprocal nature of the community itself, showing adherence to norms. (Ridings et al., 2002)

Ridings et al. (2002) found that the principle here is behaving in a trusting manner, in this case, by posting sensitive information, people can encourage others to trust them. Additionally, the decision to trust others should thus be based also on knowledge of the other people as derived from their disclosure of personal information (McAllister, 1995). By disclosing their gender, age, or perhaps a personal problem, other people in the virtual community become less of a stranger and more of an acquaintance or friend. Related research on social behavior also indicates that by disclosing information to others, and making one more vulnerable in the process, people can induce others to trust them more (Crosby et al., 1990).

Another antecedent of trust is the disposition to trust. Disposition to trust is defined as a general willingness based on extended socialization to depend on others, and has been found to be related to trust (Gefen, 2000; Mayer et al., 1995). Thus, user trust in web vendors and the effect of third party icons may depend, to an extent, on individual characteristics, in particular, the propensity or disposition to trust (Mayer et al., 1995).

H₄a: Perceived responsiveness will influence the group-buying intention of consumers.

H₄b: Disclosing personal information will influence the group-buying intention of consumers.

H₄c: Disposition to trust will influence the group-buying intention of consumers.

Pavlou and Gefen (2004) found the perceived effectiveness of three IT-enabled institutional mechanisms, feedback mechanisms, and trust in the intermediary engenders buyer trust in the community of online auction sellers.

Feedback mechanisms are essentially market-driven reputation systems where buyers can describe their past experiences with specific sellers, imitating word-of-mouth communication using online methods (Dellarocas, 2003). This study was followed by Pavlou and Gefen’s (2004) that stressed the importance of the extent to which a buyer believes the feedback mechanism in an online marketplace is able to provide accurate and reliable information about the past transaction behavior of the marketplace’s sellers.

An online intermediary is a third-party institution using the Internet infrastructure to facilitate transactions among buyers and sellers in its online marketplace by collecting, processing, and disseminating information (Bailey and Bakos, 1997). Pavlou and Gefen (2004) emphasized the importance of the subjective belief with which a buyer believes the intermediary will institute and enforce fair rules, procedures, and outcomes in its marketplace competently, reliably, and with integrity, and, if necessary, will provide recourse for buyers to deal with opportunistic seller behavior.

H₄d: Feedback mechanism responsiveness will influence the group-buying intention of consumers.

H₄e: Trust in the intermediary will influence the group-buying intention of consumers.

Group-buying intention and behavior

Based on the theory of reasoned action (TRA), transaction intention can really affect behavior, and the transaction intention may affect transaction activities in the future. As in previous research on e-commerce (Gefen et al., 2000; Pavlou and Gefen, 2004), intention to transact is defined in this study as the consumer’s intention to engage in an online community information exchange activity.

H₅: Group-buying intention will influence the group-buying behavior of consumers

These hypotheses are summarized in Figure 1.

METHODS

The subjects of this study were Internet customers with prior experiences with online group-buying. The main reason we needed an experienced sample is because these people have a greater understanding of these types of purchase patterns, and they have the basic knowledge to answer our questions. The main method of data collection for this study was survey. We used an online questionnaire placed on the web. Due to lower costs and convenience of delivery, and without time and space constraints, the online questionnaire was a suitable tool for the study. We considered the representativeness of the sample, so we put the online questionnaire on famous group-buying related websites.
(www.ihergo.com, National Taiwan University PTT, FG discussion board) in Taiwan. Because of the popularity of these websites, we were able to increase the response rate. After the data collection, it was tested using partial least squares (PLS). Being a components-based structural equations modeling technique, PLS is similar to regression, but simultaneously models the structural paths (that is, theoretical relationships among latent variables) and measurement paths (that is, relationships between a latent variable and its indicators). Rather than assume equal weights for all indicators of a scale, the PLS algorithm allows each indicator to vary in how much it contributes to the composite score of the latent variable. Thus, indicators with weaker relationships to related indicators and the latent construct were given lower weightings. In this sense, PLS is preferable to techniques such as regression, which assume error free measurements (Chin et al., 2003).

Based on previously related literature and comments gathered from interviews, each item was measured on a seven-point Likert scale from disagree to agree. The initial version of the survey instrument was refined through extensive pretesting with three researchers with significant expertise in the study of information management. The instrument (Appendix) was further pilot-tested with 30 consumers having group-buying experiences in Taiwan. There were 335 samples with 8 screened out because of missing values, leaving 327 effective samples.

Reliability and validity

PLS examination of the results was performed in two steps. The first was to assess the reliability and validity of the measurement model. The second was to assess the structural model itself. The measurement model in PLS was assessed by examining individual item's reliability, internal consistency, and discriminant validity. Item reliability was assessed by examining the loadings of the measures with their respective construct. Items with loadings of 0.7 or greater were desirable in that they shared more variance with the construct than the amount of error variance (0.7 squared = 49% variance explained). Internal consistency was assessed by a PLS model using composite reliability (CR) developed by Fornell and Larcker (1981) and discussed in detail by Barclay et al. (1995). The interpretation of Fornell and Larcker's consistency measure is similar to Cronbach's alpha in that a value of 0.7 suggests reasonable reliability.

Table 2 shows the composite reliability values ranged from 0.84 to 0.96 above the acceptable value. For Average Variance Extracted (AVE) by measures, a score of 0.5 indicates an acceptable level. Table 2 shows that our average variances extracted by measures ranged from 0.68 to 0.93 and value of Cronbach's α extracted by measures ranged from 0.73 to 0.97. Discriminate validity is the degree to which items distinguish between constructs. Each item should correlate more highly with other items of the same construct than with items of other constructs. To assess discriminate validity, the square root of AVE from the construct should be greater than the variance shared between the construct and other constructs in the model (that is, the square root of the AVE by a construct from its indicators should exceed the construct's correlation with other constructs). Table 3 displays the correlations of the latent variables. These values should exceed the inter-construct correlations for adequate discriminate validity. Our proposed

Samples

Table 1 shows the demographic information of the samples. A total of 327 useable responses were collected from online group-buying websites within a four-week period. Of the respondents, 89.9% were female and the largest group of users was in the age range of 24-28 (40.1%), with the majority being students (42.2%).
Table 1. Demographic information of subjects.

<table>
<thead>
<tr>
<th>Question Item</th>
<th>Samples</th>
<th>%</th>
<th>Question Item</th>
<th>Samples</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender Male</td>
<td>33</td>
<td>10.1</td>
<td>Education High school</td>
<td>25</td>
<td>7.6</td>
</tr>
<tr>
<td>Female</td>
<td>294</td>
<td>89.9</td>
<td>University and college</td>
<td>238</td>
<td>72.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Graduate</td>
<td>64</td>
<td>19.6</td>
</tr>
<tr>
<td>Age 15 - 18</td>
<td>4</td>
<td>1.2</td>
<td>Education University and college</td>
<td>29 - 35</td>
<td>16.2</td>
</tr>
<tr>
<td>Age 19 - 23</td>
<td>123</td>
<td>37.6</td>
<td>Education Graduate</td>
<td>36 - 42</td>
<td>13</td>
</tr>
<tr>
<td>Age 24 - 28</td>
<td>131</td>
<td>40.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 29 - 35</td>
<td>53</td>
<td>16.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 36 - 42</td>
<td>13</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income (US$, thousand)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 32</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 16-32</td>
<td>7</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-16</td>
<td>21</td>
<td>16.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8</td>
<td>46</td>
<td>36.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-4</td>
<td>24</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 2</td>
<td>23</td>
<td>18.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Reliability of research construct.

<table>
<thead>
<tr>
<th>Research construct</th>
<th>CR</th>
<th>AVE</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand externalities</td>
<td>0.87</td>
<td>0.68</td>
<td>0.769</td>
</tr>
<tr>
<td>Price consciousness</td>
<td>0.89</td>
<td>0.73</td>
<td>0.812</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td>0.90</td>
<td>0.74</td>
<td>0.826</td>
</tr>
<tr>
<td>Reciprocity</td>
<td>0.90</td>
<td>0.69</td>
<td>0.846</td>
</tr>
<tr>
<td>Conformism</td>
<td>0.88</td>
<td>0.79</td>
<td>0.732</td>
</tr>
<tr>
<td>Group-buying intention</td>
<td>0.94</td>
<td>0.79</td>
<td>0.907</td>
</tr>
<tr>
<td>Trust</td>
<td>0.98</td>
<td>0.92</td>
<td>0.969</td>
</tr>
<tr>
<td>Perceived responsiveness</td>
<td>0.94</td>
<td>0.84</td>
<td>0.907</td>
</tr>
<tr>
<td>Disclosing personal information</td>
<td>0.92</td>
<td>0.85</td>
<td>0.827</td>
</tr>
<tr>
<td>Disposition to trust</td>
<td>0.96</td>
<td>0.93</td>
<td>0.925</td>
</tr>
<tr>
<td>Feedback mechanism</td>
<td>0.93</td>
<td>0.76</td>
<td>0.892</td>
</tr>
<tr>
<td>Trust in the intermediary</td>
<td>0.92</td>
<td>0.79</td>
<td>0.871</td>
</tr>
</tbody>
</table>

hypotheses were tested using PLS. Discriminate validity is also acceptable, as shown by the square root of the AVE being larger than any of the correlations among the construct. The bold diagonal elements are the square root of the variance shared between the latent constructs. For strong discriminate validity, the diagonal elements should be larger than any other corresponding row or column entry.

RESULTS

Immediately the measurement model in PLS was determined to be adequate, the explanatory and predictive power of the model was assessed. The explanatory power of the model was examined by testing how well the observed data fit the hypothesized relationships among the constructs. This was done by examining the size, sign, and statistical significance of the path coefficients between constructs in the model. The statistics for the paths were generated using a bootstrapping technique. The predictive capacity of the PLS model was evaluated by examining the variance explained as $R^2$. In this study, $R^2$ was 0.46, which is an acceptable value.

The study found that the results of economic perspective show that demand externalities (the path coefficient was 0.112, t value was 2.338, p <0.05) and price consciousness (path coefficient was 0.120, t value was 2.448, p < 0.05) both had a significant impact on group-buying intention, the hypotheses $H_{1a}$, and $H_{1b}$ were supported. The price sensitivity (path coefficient was -0.041, t value was -0.089) had a negative path coefficient but was not significant. In the social perspective, reciprocal (the path coefficient was 0.324, t value was
Table 3. Discriminant validity analysis.

<table>
<thead>
<tr>
<th>Research construct</th>
<th>The number of matrix associated with the AVE $^{1/2}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand externalities</td>
<td>0.81</td>
</tr>
<tr>
<td>Price consciousness</td>
<td>0.24 0.85</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td>0.24 0.62 0.86</td>
</tr>
<tr>
<td>Reciprocity</td>
<td>0.45 0.40 0.47 0.83</td>
</tr>
<tr>
<td>Conformism</td>
<td>0.50 0.33 0.30 0.64 0.80</td>
</tr>
<tr>
<td>Group-buying intention</td>
<td>0.44 0.35 0.31 0.60 0.57 0.89</td>
</tr>
<tr>
<td>Trust</td>
<td>0.35 0.19 0.22 0.39 0.34 0.40 0.96</td>
</tr>
<tr>
<td>Perceived responsiveness</td>
<td>0.35 0.25 0.18 0.35 0.37 0.35 0.51 0.92</td>
</tr>
<tr>
<td>Confiding personal information</td>
<td>0.29 0.18 0.18 0.34 0.34 0.39 0.36 0.53 0.92</td>
</tr>
<tr>
<td>Disposition to trust</td>
<td>0.34 0.22 0.17 0.40 0.41 0.44 0.59 0.63 -0.47 0.96</td>
</tr>
<tr>
<td>Feedback mechanism</td>
<td>0.33 0.23 0.21 0.44 0.39 0.46 0.59 0.60 -0.50 0.67 0.87</td>
</tr>
<tr>
<td>Trust in the intermediary</td>
<td>0.29 0.15 0.15 0.37 0.37 0.47 0.60 0.55 -0.44 0.67 0.79 0.89</td>
</tr>
</tbody>
</table>

4.624, $p < 0.01$) and conformity (path coefficient was $0.231$, $t$ value was 3.850, $p < 0.01$) both had a significant impact on group-buying intention, the hypotheses $H_{2a}$ and $H_{2b}$ were supported. In the psychological perspective, trust (path coefficient was 0.137, $t$ value was 2.639, $p < 0.01$) had a significant impact on group-buying intention, the hypothesis $H_3$ was supported. Perceived responsiveness (path coefficient was 0.141, $t$ value was 2.100, $p < 0.05$), disposition to trust (path coefficient was 0.233, $t$ value was 2.766, $p < 0.01$), feedback mechanism (path coefficient was 0.161, $t$ value was 2.155, $p < 0.05$), and trust in the intermediary (path coefficient was 0.249, $t$ value was 3.401, $p < 0.01$, all had a significant impact on trust, these hypotheses ($H_{4a}$, $H_{4c}$, $H_{4d}$ and $H_{4e}$) were supported. However, disclosing personal information (path coefficient was 0.008, $t$ value was 0.296), although it had a positive relationship to trust, was not significant. These results are shown in Figure 2.

This study continued focusing on the relationship between actual consumer grouping-shopping behavior and intention. This is a crucial question because some research questions whether behavioral intentions are a reasonable proxy for actual behavior (Pavlou and Gefen, 2004). The follow-up study samples from 100 shoppers were from those agreeing to join the follow-up study of the first instrument. Using ordinary least squares regression, the results from the follow-up study show an insignificant relationship between group-buying intention and behavior ($r = 0.037$). This result means consumers have high shopping intention, but their activities do not really support their intentions.

Most of the samples were students, therefore this study used income as a variable. There were three groups; group 1 had 56 samples; group 2 had 12 samples; group 3 had 31 samples. Table 4 shows that group 1, with a lower income, had a negative and insignificant relationship between intention and behavior; group 2, with a middle level income, had an insignificant relationship; and group 3, with higher income, had a significant relationship. This shows that the relationship between group-buying intention and behavior is affected by income.

DISCUSSION

This study discusses the factors affecting the group shopping behavior of consumers from an economic, psychological, and sociological viewpoint. When the consumer precedes the group-buying, the conformity and reciprocity from the sociological viewpoint has a powerful effect on group-buying. Trust from the psychological perspective is the next most important. Finally, price consciousness and the demand externalities from the economic perspective have the least effect. Price sensitivity from the economic perspective has no positive effect on the group-buying behavior of consumers. There is no positive relationship between group-buying intention and action. The sociological perspective is clearly a very important factor.

Price consciousness and demand externality from the economic perspective can affect group-buying. There is a negative and insignificant relationship between price sensitivity and group-buying. This means the consumer considered that with more people group-buying the product, the price may be reduced to the threshold of group-buying. The consumer considered the group-buying product of a lot of people can increase the product value, to the credit of the factory-owner and service. The consumers have respect for efficacy in the viewpoint of
economics. The number of people attending the purchase group increased and consumer utility also increased. As a result of price consciousness, most consumers make group-buying decisions because they get more discounts and better prices. However, the relationship between price sensitivity and group-buying behavior is insignificant. This means consumers are not highly sensitive to price changes. They have a group-buying intention because the price is lower than other platforms, and they will not try their best to find the lowest price, such as searching for the price in different groups. This study argues low price helps consumers join group-buying, but not everyone makes shopping decisions because they require the lowest price.

Reciprocity and conformity are significantly related to group-buying intention, showing consumers make a group-buying decision in accordance with the information postings and exchange in the virtual communities. They increase intention because of the persuasion or dissuasion of other group members. In societal view, reciprocity and conformity have the highest effects on intention, meaning the information and members from the community can affect consumers when they make a group-buying decision.

Trust and group-buying intention are significantly related. Trust is an important factor in the e-commerce environment. Some other factors affect trust in the virtual community. Perceived responsiveness and disposition to trust directly affect trust, meaning community members do not know others as in a real society, but they increase their trust with others through interacting in a community. Disclosing personal information does not really affect trust, and this study found there was less disclosure of personal information, so consumers did not increase trust.
Group-buying intention and behavior are insignificantly related, meaning consumers have a higher intention for group-buying but their shopping behavior does not match the degree of intention. This study found this relationship is affected by income levels. The higher income group can spend money more freely because they have a regular salary. Most of the students were in the lower income group, so the relationship between intention and behavior was insignificant and negative. This shows that the group has a higher intention level but their limited income restricts them from shopping more freely with other community members.

Combining the above findings, consumers making a group-buying decision price is one motive to encourage community members to join the group. However, lower prices are not the only important factor for consumers. They will also be affected by information exchange and member interaction in the community. Trust is still important for consumers, if there is more information in the community consumers will be more active in posting articles, further facilitating trust in the product. According to our research results, conformism and reciprocity have a significant impact on group-buying intention. In the social commerce context, when consumers want to buy something on the web, they will listen to others (conformism). If these opinions help them accomplish their purchasing task, they will express gratitude and post their comments on the web (reciprocity). The accumulated information on the website enables consumers to have more knowledge and increase their trust in the product (trust), it also strengthens consumers’ group-buying intention on the website. Therefore, online group-buying can use price as a factor for initially getting consumers’ attention and then use community power, information communication, and member discussion to increase group-buying intention.

Future research

This study investigated online group-buying intention among Taiwanese users. We integrated the perspectives of sociology, economics, and psychology to propose factors influencing the behavior of online group-buying. The results indicate that reciprocal and conformism from the social perspective has the most significant impact on group-buying intention. Next is the factor of trust from the psychological perspective, and last is the factor of price consciousness and demand externalities from the economic perspective. According to the study, there are some suggestions for future research. First, we can try to explore other possible factors that affect online group-buying, especially from the social and psychological perspective. Second, due to the limitation of the online survey, the sample may have a problem of inadequate representation; we suggest seeking cooperation with the websites in order to send the questionnaires to their members. Third, although this study used two phases to investigate the actual online group-buying behavior, it may not have been long enough (two months), resulting in the correlation between intention and behavior of online group-buying not being significant. We suggest future studies and an extension of observation time. Finally, we conducted the survey in a society that has stronger social bonding (Taiwan). Because the results show that social perspective has a strong impact on consumers' group-buying intention, it would be interesting if future research explored the influence of cultural differences on participating in group-buying.

REFERENCES

APPENDIX

Demand externalities
If more people use the same product, I think that the better the quality of the product
If more people use the same product, I think that credibility will be enhanced of the product
If more people use the same product, I think that visibility will increase of the product

Price consciousness
I tend to buy the lowest-priced product that will fit my needs.
When it comes to group-buying, I rely heavily on price.
When buying a product, I look for the more discount product available.

Price sensitivity
I am sensitive to differences in prices of group-buying.
I will change what I had planned to buy in order to take advantage of a lower price for group-buying.
I am willing to make an extra effort to find a low price for group-buying.

Reciprocity
Based on the principle of mutual help, I am willing to share product information on group-buying platform
I take note of the group-buying information on my life.
I join the group-buying in accordance with online information.
I will make more participate in group-buying because the information provided by online group-buying platform.

Conformism
I often observe what others are buying and using for group-buying.
I will make more participate in group-buying because other community member discussion.
I will make more participate in group-buying because this product is popular.

Trust
This group-buying platform is in general dependable.
This group-buying platform is in general reliable.
This group-buying platform is in general honest.
This group-buying platform is in general trustworthy.

Perceived responsiveness
The people on this group-buying platform are very responsive to my posts.
I can always count on getting a lot of responses to my posts on this group-buying platform.
I can always count on getting responses to my posts fairly quickly on this group-buying platform.

Confiding personal information
The posts on this group-buying platform often contain personal information.
People seem very willing to divulge private information about themselves to other participants.

Disposition to trust
I feel that people are generally reliable.
I generally trust other people unless they give me reason not to.

Feedback mechanism
I feel confident that this group-buying platform Ratings and Feedback mechanism gives accurate information about the auction sellers' reputation.
A considerable amount of useful feedback information about the transaction history of auction sellers is available through this group-buying platform Ratings and Feedback mechanism.
I believe that the Ratings and Feedback mechanism in this group-buying platform auctions is effective.
I believe that the Ratings and Feedback mechanism in this group-buying platform auctions is reliable and dependable.

Trust in the intermediary
As an auction host/intermediary, this group-buying platform can be counted on to do what is right. Dropped.
As an auction host/intermediary, this group-buying platform has high integrity.
This group-buying platform is a competent and knowledgeable auction host/intermediary.

Group-buying intention
Group-buying has attraction for me:
I would consider browse group-buying platform in the future.
I would consider buy group-buying products in the future.
I would consider put my friend up for group-buying.