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Does altruism matter on online group buying? Perspectives from egotistic and altruistic motivation

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Abstract

Purpose – The purpose of this paper is to identify whether altruistic motivation is a significant factor in online group buying and to examine the effects of altruistic and egotistic motivation on online group buying intention through the psychological processes of trust and satisfaction.

Design/methodology/approach – A field study on Ihergo (www.ihergo.com/) was chosen because it is the largest online group buying marketplace in Taiwan. An online survey method was used to collect data. Returned questionnaires numbered 302 responses with 20 incomplete data, resulting in 282 valid responses for data analysis. Collected data were analyzed using structural equation modeling.

Findings – The findings of the study shows that altruism is relevant to online group buying, and trust and satisfaction have significantly positive effects on online group buying intention. The results emphasize that altruism, reciprocity, and reputation of motivations are significantly positive predictors of trust. Altruism and reciprocity have significantly positive effects on satisfaction, whereas reputation does not.

Research limitations/implications – Altruism, reciprocity, and reputation represent three key elements of online group buying behavior. Integration of the altruism, reciprocity, and reputation results in a better explanation on online group buying intention through the psychological process, trust, and satisfaction. This study extends the value of online group buying and sheds light on the potential effects of altruistic and egotistic motivation on online group buying intention.

Practical implications – Online group buying is more complex than individual online shopping and is not easy to fulfill customer requirements. To satisfy online group buying, e-vendors might provide altruistic activities, enhance reciprocal services and products, develop better reputation mechanisms, and present an easier approach to encourage online group buying on the web site.

Originality/value – To the best of the knowledge, this is first paper to examine the effects of altruism on online group buying. The contribution of this study draws attention to the altruistic value of electronic commerce, by theorizing and validating the effects of altruistic and egotistic motivation on online group buying intention through psychological processes (trust and satisfaction).

Keywords Trust, Structural equation modeling, Reputation, Online shopping

Paper type Research paper

Introduction

With the rapid development of electronic commerce (EC), a frequently used business model has emerged, namely online group buying. Online group buying is a popular shopping model in which people with the same product interests form a group and purchase together with a better discount (Cheng and Huang, 2013; Hsu *et al.*, 2014). Online group buying has grown dramatically and become successful in many countries such as the USA, Canada, Mainland China, Russia, Brazil, Germany, and Taiwan (Shiau and Luo, 2012; Hsu *et al.*, 2014; www.groupon.com/). For example, a group coupon company, Groupon (e.g. www.groupon.com/), has more than 800 markets in

49 countries in North America, Europe, Asia, and South America, as of 2014. In general, people shop online individually has and have few or no discounts because of limited quantity. Online group buying differs from traditional individual purchasing, which involves group buying at a fixed period toward the completion of an auction, and group buying at a fixed price that is achieved only when enough buyers participate (Hsu *et al.*, 2014). Because of substantial discounts in online group buying, customers enjoy buying products and services jointly online, such as food, drink, beauty products and spas, sporting trips, city tours, cooking classes, automobiles, flowers and balloons, tattoo services, and musing lessons (www.groupon.com). Thus, online group buying has become popular worldwide (Kuan *et al.*, 2014; Pelaez *et al.*, 2013/2014; Lim and Ting, 2014).

In the competitive EC environment, many online group buying web sites have been designed for sharing information with online group buyers (e.g. www.ehow.com/ and www.yahoo.com). Altruism is acting with the goal of benefiting others (McConnell, 1997; Suh and Harrison, 2006), and the term is used to describe customers' sharing information without expecting a reward or benefit in return. The impact of altruism on purchase behavior is critical for business firms (Shimp and Sharma, 1987; Croson, 2007; Hopkins and Powers, 2007) because altruistic motivation (sharing information) can assist online group buyers in buying products easily. However, information systems (IS) research has suggested that people using online IS to benefit other online users is rare (Lowry *et al.*, 2011). In addition, previous online group buying studies have focussed on informational and normative social influence (Kuan *et al.*, 2014), group size, communication, and buyer performance (Pelaez *et al.*, 2013/2014), consumer acceptance and continuance (Lim and Ting, 2014), electronic word-of-mouth (eWOM), network embeddedness, and web site quality attitude (Cheng and Huang, 2013), sense of virtual community and technology acceptance (Tsai *et al.*, 2011). Few studies have investigated the impact of altruism on online group buying. Therefore, the primary objective of this study is to fill this gap by determining whether altruistic motivation is a significant factor in online group buying.

Participation in an online group buying determines long-term e-commerce success. To participate in online group buying users need to be willing to use online group buying service (e.g. groupon). Due to the difficulties measuring online group buying participation, previous studies usually use intention to measure consumer behavior (e.g. Venkatesh, 1999). Thus, this study focusses on online group buying intention. For online group buying firms, consumers' intention determining consumers' behavior becomes critical factors for business firms to survive. Two essential factors influence consumers' intention in an online shopping environment: the first is trust because trust is the foundation of all relationships (Gefen *et al.*, 2003); and the second factor is satisfaction. Satisfaction is a psychological or affective response on the degree to which consumers feel good or happy with certain objects. Satisfaction plays a central role in determining purchase intention or continuance (Oliver, 1980; Bhattacherjee, 2001; Shiau and Luo, 2012; Cheng, 2014) from businesses to consumer firms, such as online banks, online travel, and online retailers. Both trust and satisfaction are two important psychological processes for customers going for collective online purchasing. Moreover, most people shop online together for themselves (egotistic motivation). Egotistic motivation is human nature and takes action for themselves. If one act is or appears to be motivated mainly out of a consideration of one's own rather than another's need, we call it egotistic. The egotistic impulse does exist to consider his/her own interests – is natural to the human species. Therefore the second objective of this study is to examine the effects of altruistic and egotistic motivation on online group

buying intention through the psychological processes of trust and satisfaction. This paper addresses the following research questions:

RQ1. Does altruistic motivation matter on online group buying?

RQ2. How do altruistic and egotistic motivation influence online group buying intention?

This study draws attention to test a theoretical model of altruistic and egotistic motivation on the online group buying intention. The remainder of the paper is structured as follows. Section 2 introduces the theoretical background; Section 3 details the research model and hypotheses; Section 4 provides the research methodology, data analysis, and results; Section 5 presents a discussion and implications; and lastly, Section 6 offers a conclusion.

Literature review
Altruism
Research on altruism in the context of business behaviors represents an exciting application (Alcañiz *et al.*, 2010). Altruism is the principle or practice related to welfare toward others and has many different forms and definitions regarding altruistic motivation. For example, Hoffman (1978) defined altruism as a helping or sharing behavior that promotes the welfare of others without conscious regard for one's own interest. Smith (2000) defined altruism as an inner tendency of a person to focus on giving meaningful services to others. Although there is no single definition of altruism, most people who emphasize the motivational aspect of altruism involves willfully benefiting another person without the expectation of rewards (Berkowitz, 1972) and empathizes with the needs of another person (Cohen, 1972). Piliavin and Charng (1990) conducted a comprehensive review of altruism research including different types of altruism, cognitive factors of altruism, emotional factors of altruism, and helping behaviors. Piliavin and Charng concluded that true altruism with the goal of benefiting another person exists and is a part of human nature. Table I summarizes previous studies on altruism and shows related subject areas, purposes, factors, and results.

Reputation and reciprocity
Reputation is a social identity evaluated by other people. Individual reputation is widely conceptualized as individual attribution identified by collective perception. According to social exchange theory (Blau, 1964), individuals engage in social interaction expect that it will lead in some way to social rewards such as pay, prizes, recognition, status, and respect. In other words, an individual can benefit from other participation is the perception that participation enhances his or her personal reputation in the group. Reputation is an important factor that an individual can necessitate to achieve a certain status within a collective (McLure-Wasko and Faraj, 2005). In an online context, people share information and contribute their knowledge because they want to have an informal recognition and establish themselves as experts. Reputation is a kind of recognition and increased by information sharing among other users or sellers (Davenport and Prusak, 1998). For example, Cheung and Lee (2012) investigated consumers' motives for eWOM communication. Their results show that reputation, sense of belonging, and enjoyment of helping other consumers significantly related to consumers' eWOM intention. Moreover, people who share more knowledge receive a higher reputation (Davenport and Prusak, 1998). Previous studies have shown

Table I.
Altruism-related studies

Study	Area	Purpose	Factors related to altruism	Results
Alcañiz et al. (2010)	Alliances between brands and social causes	To know the influence of company credibility on social responsibility image	Trustworthiness Expertise	Altruistic attributions→trustworthiness[a] Altruistic attributions→expertise[a]
Hung et al. (2011b)	Knowledge management	Understanding influences of intrinsic and extrinsic motivation on individuals' knowledge-sharing behavior	Number of ideas generated Idea usefulness Idea creativity Meeting satisfaction	Altruism→number of ideas generated Altruism→idea usefulness Altruism→idea creativity Altruism→meeting satisfaction[a]
Hung et al. (2011a)	Electronic knowledge repository	Understanding factors affecting research and development (R&D) employees' knowledge sharing in electronic knowledge repository	Usage intention for knowledge sharing perceived usefulness Perceived ease of use	Altruism→usage intention for knowledge sharing[a] Altruism→perceived usefulness Altruism→perceived ease of use[a]
Zhao and Cao (2012)	Blog	To explore the factors that influence Sina microbloggers' intention to continue using this platform	Experimental value Satisfaction Continual usage intention	altruism→experimental value[a] altruism→satisfaction altruism→continual usage intention
Zhao et al. (2013)	Virtual communities	To explore the determinants of future participation that is critical to the survival of virtual communities	Continuance intention to consume Continuance intention to provide	Altruistic benefits→continuance intention to consume[a] Altruistic benefits→continuance intention to provide[a]
Ma and Chan (2014)	Social media	To investigate the motivational factors relating to knowledge sharing and to further identify whether altruism is a key determinant of such behavior	Online knowledge-sharing behavior	Altruism→online knowledge-sharing behavior[a]

Note: [a]Significant

that reputation is a strong motivator for knowledge sharing (Davenport and Prusak, 1998; Kankanhalli *et al.*, 2005; Hung *et al.*, 2011a). Therefore, reputation has become an important factor in shaping online consumer behavior.

Reciprocity is a positive or negative response for the actions which one should treat others as one would like others to treat oneself (Casaló *et al.*, 2013). In general, people suffer from limited time, energy, and other resources and not willing to share their knowledge unless they can get reward from them (Davenport and Prusak, 1998). In other words, people share information or knowledge may expect future benefits from their present actions. For example, Chen and Hung (2010) investigated factors influencing members' knowledge sharing and community promotion in professional virtual communities. Their results show that norm of reciprocity, interpersonal trust, knowledge-sharing self-efficacy, and perceived relative advantage were significant in affecting knowledge-sharing behaviors. Previous studies have shown that reciprocity is a strong motivator for knowledge sharing (Davenport and Prusak, 1998; Kankanhalli *et al.*, 2005; Chen and Hung, 2010). Therefore, reciprocity has become an important factor for users to contribute their knowledge in the context of online environment.

Trust
Trust is a kind of affective attitude (Jones, 1996). Trust plays a great role in interpersonal interactions (Mayer *et al.*, 1995) within a group or an organization. Moreover, trust plays an important role in EC and has diverse conceptualizations, such as a general belief that results in intended use in online shopping (Gefen *et al.*, 2003), a belief that combines trustworthiness, integrity, and benevolence, increases behavioral intentions in an online store (Jarvenpaa and Tractinsky, 1999), and a specific belief in complete integrity and benevolence that leads to intended behavior on trust (McKnight *et al.*, 2002a). Many studies have not only probed the trust factor, but have also investigated the antecedent and consequence of trust in the context of EC (Gefen *et al.*, 2003; Kim and Park, 2013). Therefore, trust has become an important factor in the context of online environment.

Satisfaction
User satisfaction has been an important research stream in IS. With the proliferation of EC, IS models focussing on system/information characteristics no longer suffice to explain satisfaction in an online context. Because online customers are similar to end-users, several studies have examined customer satisfaction in the EC context. Bhattacherjee (2001) extended expectation-confirmation theory to explore IS continuance intentions by using a post-acceptance model of IS continuance with a sample of 122 online banking users. The results of the expectation-confirmation model (ECM) showed that user satisfaction and perceived usefulness significantly influence IS continuance intentions. Perceived usefulness and confirmation also significantly affect user satisfaction; confirmation significantly influences perceived usefulness. Consequently, Kim (2010) studied a model with the theory of planned behavior (TPB) and the ECM to predict user continuance behavior toward mobile data service (MDS) by using a sample of 207 users who had prior experience with MDS. The results showed that user satisfaction, perceived usefulness, perceived enjoyment, and perceived fee have a significant effect on MDS continuance intention. The subject norm and perceived behavioral control of the TPB were also important for the formation of MDS continuance intention. Abdeldayem (2010) investigated the integrated model of

customer satisfaction with online shopping and collected a sample of 242 questionnaire surveys from university students in Dubai, UAE. The results showed that ease of use, usefulness, enjoyment, perceived web-store traits, channel traits, and consumer traits affected attitudes toward online shopping and the intention to shop online.

Research model and hypothesis

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Numerous studies have shown that motivation, attitude, and intention is an important research stream (Hsu and Lin, 2008; Hung *et al.*, 2011a; Solesvik, 2013), as shown in the Figure 1. For online group buying, most well-known online group buying vendors (Groupon and Yahoo!) offer space for users (customers) to share their shopping experiences. Many customers really like to share and exchange information on their experiences and thoughts (knowledge). Davenport and Prusak (1998) investigated knowledge sharing. Their results show that reciprocity, reputation, and altruism are critical factors affecting people's willingness to share information. Reciprocity should be a balance between giving and receiving (Wu *et al.*, 2008) and may be considered a part of altruism or egotism. Fong (2007) explained that conditional altruism is the same as reciprocal altruism. Similarly, conditional egotism is the same as reciprocal egotism. In this study, reciprocity is attributed to egotism caused by customers' sharing online group buying experiences and ideas to benefit themselves. Similarly, customers' sharing online group buying experiences and opinions to promote their reputation is also attributed to egotism. Various theories on attitudes have been presented to explain the intentions and actions (or behavior) of individuals (Bhattacherjee, 2001). Trust, a kind of attitude (Jones, 1996), is an affective response to a person or a thing based on a subject's feelings. Satisfaction is an attitude accounts for the feelings or emotions, such as users' positive or negative response. Trust and satisfaction are identified as critical factors on online environment (Bhattacherjee, 2001; Gefen *et al.*, 2003). For online firms, economic beneficiaries may be derived from customers' behavior determining by customers' intention. Similarly, online group buying yields more benefits to online firms by selling more services and products. Customers' intention has become an important factor for online firms (Kim, 2010; Kim and Park, 2013). However, studies verifying the effects of reciprocity, reputation, and
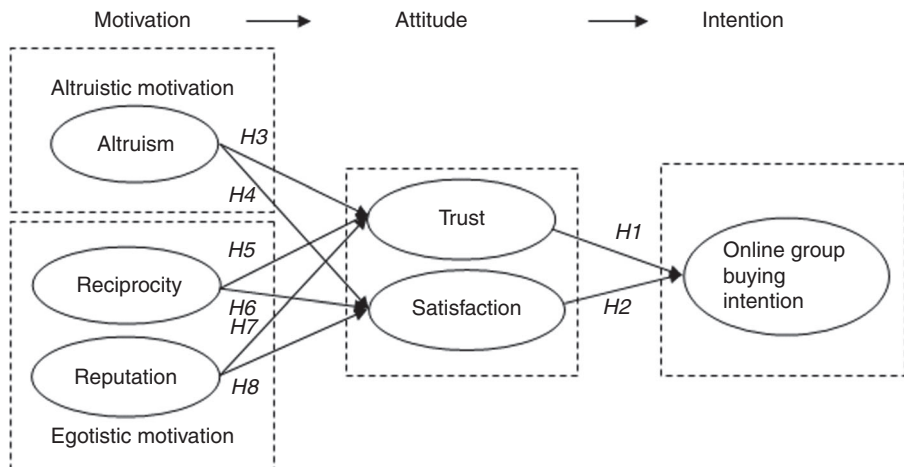

Figure 1.
Research model for online group buying

altruism on online group buying intention through trust and satisfaction are scant. Therefore, this study empirically investigated these relationships among reciprocity, reputation, altruism, rust, satisfaction, and on online group buying intention. Next, we discuss these relationships in detail.

In an online environment, trust is an effective factor for reducing the uncertainty and complexity of online transactions and for creating a positive intention toward transaction behavior. Previous studies have shown a relationship between trust and purchasing intention (Gefen *et al.*, 2003; Pavlou and Gefen, 2005; Shiau and Luo, 2012; Kim and Park, 2013). Gefen *et al.* (2003) showed that trust in an e-vendor had a positive impact on online purchase intentions of experienced buyers in the EC environment. Pavlou and Gefen (2005) investigated trust in online marketplaces. The results showed that trust in the seller community is an important factor to significantly determine the transaction intention of experienced buyers. Moreover, Kim and Park (2013) studied effects of various characteristics of social commerce on consumers' trust and trust performance. Their results show that the trust of social commerce has significantly positive effects on social commerce purchase intention. Therefore, the following hypothesis is proposed:

H1. Trust positively affects online group buying intention.

Satisfaction is the degree to which customers feel satisfied with or content with certain objects. Satisfied customers are more likely to repeat the same behavior. Previous studies have shown a relationship between satisfaction and purchasing intention (Lee, 2010; Shiau and Luo, 2012; Kim, 2010; Hsu *et al.*, 2014). Lee (2010) studied user continuance intention toward e-learning with a synthesized model of the ECM, the technology acceptance model (TAM), the TPB, and flow theory. The results showed that satisfaction is the salient factor on user continuance intention. In the electronic market, vendors attempt to satisfy customers and expect continuous usage. Bhattacherjee (2001) showed that user satisfaction significantly influences continuance intentions of experienced users in an online banking environment. Similarly, Kim (2010) showed the significant effect of user satisfaction on continuance intention of experienced users in MDS (e-service). Hsu *et al.* (2014) investigated the determinants of repurchase intention in online group buying and found that satisfaction with a web site positively affects repurchase intention. Therefore, we propose the following hypothesis:

H2. Satisfaction positively affects online group buying intention.

According to social exchange theory (Blau, 1964), a person may establish an exchange relationship with others by voluntarily providing benefits to others first and then expecting returns, such as trust and satisfaction. Altruistic people volunteer for online purchasing because they trust that their participation improves online group buying for others and those e-vendors minimize the risk for participants. In the online environment, trust is an important factor (Beldad *et al.*, 2010). Moreover, in the collective online purchasing environment, if a member helps others with little or no interest in a reward, he or she always gains the trust of others (Glaeser *et al.*, 1999). A more altruistic motivation has more trust that exists in collaborative online shopping. Therefore, we propose the following hypothesis:

H3. Altruism positively affects trust of online group buying.

Altruism is when a person performs a beneficial act for others without gaining a reward for his or her efforts (Hung *et al.*, 2011a; Zhao and Cao, 2012). A contribution

can be humanitarian or altruistic. Contributors admit to "a feeling of self-satisfaction" or even pride (Piliavin and Charng, 1990). Knowledge contributors can be satisfied by enhancing confidence in their ability to provide valuable knowledge that is useful to the organization (Kankanhalli *et al.*, 2005). Moreover, Hars and Ou (2002) investigated working for free and found that altruism drove students and hobby programmers to participate in open-source projects. People participating in an activity without gaining a reward may be partially determined by intrinsic motivation, for instance, the enjoyment of helping others (Lee *et al.*, 2006). On the contrary, Zhao and Cao (2012) found that altruism does not significantly affect satisfaction on sharing information in microblogging. In an online environment, group members contributing information to help other members without gaining a reward may increase satisfaction intrinsically. Therefore, we propose the following hypothesis.

H4. Altruism positively affects satisfaction of online group buying.

In an online environment, trust is an important precondition for people's adoption of electronic services (Beldad *et al.*, 2010). Lin *et al.* (2009) investigated and explained the relationships among contextual factors, personal perceptions of knowledge sharing, knowledge-sharing behavior, and community loyalty. Their results showed a significant effect of reciprocity on trust in knowledge sharing. Similarly, reciprocity is members receiving reciprocal benefits from information exchange and finishing an online group buying. Online group buying members will believe exchanged information and have a feeling of trust. Then, a higher degree of given reciprocity indicates stronger trust perceived by the giver and the recipient. Therefore, we propose the following hypothesis:

H5. Reciprocity positively affects trust of online group buying.

Reciprocity entails people or firms providing benefits to others with the expectation of rewards (Davenport and Prusak, 1998; Hung *et al.*, 2011a; Shiau and Luo, 2012; Casaló *et al.*, 2013). In a competitive environment, a firm sharing and learning knowledge with suppliers is important to interfirm buyer-supplier relationships (Dyer and Singh, 1998). The buyer and supplier may complement each other with knowledge and enjoy long-term competitive advantages. Wagner and Bukó (2005) investigated inter-organizational knowledge sharing with different actors in networks. Their results showed that knowledge sharing with suppliers increased firm satisfaction. Similarly, reciprocity in a person involves performing an activity while expecting to receive benefits from the exchange. Members of a group sharing online group buying information with others and receiving required information are pleased because of the smooth completion of their online purchasing experiences. Thus, a higher degree of given reciprocity results in stronger satisfaction perceived by the giver and the recipient (Casaló *et al.*, 2013). Therefore, we propose the following hypothesis:

H6. Reciprocity positively affects satisfaction of online group buying.

Numerous e-vendors, including eBay, OnSale, Yahoo, and Amazon, have built a reputation system (Dellarocas *et al.*, 2004). A customer can express trust in sellers by voting for them, and sellers can collect votes to build their reputation. User misbehavior may damage his or her reputation, causing other members of the group to lose confidence and trust in that user. Online shopping members do not allow a member with low credibility to join their group buying again because of the low reputation. In a previous electronic market study, McKnight *et al.* (2002b) found that perceived

e-vendor reputation significantly influenced consumer trust in the e-vendor. Teo and Liu (2007) found that perceived reputation of an e-vendor is positively related to consumer trust. Hsu *et al.* (2014) investigated the determinants of repurchase intention in online group buying and found that the reputation of a web site positively affects trust in that web site. Kim and Park (2013) also found that a social commerce firm's reputation has significantly positive effects on consumers' trust. Therefore, we propose the following hypothesis:

H7. Reputation positively affects trust of online group buying.

Reputation has been considered an important intangible asset of firms and people. From a firm's perspective, a favorable reputation has a significant impact on consumer purchase decisions (Carmeli and Tishler, 2005). Helm (2007) investigated the role of corporate reputation in determining investor satisfaction and loyalty. His results showed corporate reputation as a determinant in investor satisfaction. For people, reputation is a sign of quality and reduces uncertainty. This is the reason an e-vendor such as eBay needs a reputation system. In a reputation system, collaborative reputation mechanisms provide personalized evaluations of various ratings appointed to each user to predict reliability (Zacharia *et al.*, 2000). Each user has his or her personal criteria for what comprises a reputable user. A person may have a solid reputation for his or her consistent trustworthy behavior. A good reputation is not something one can demand; it is earned through action. A group member participating in online shopping and with a good reputation implies the recognition of member behavior by other members. A good reputation fulfills the inner needs of a member for recognition and respect, resulting in group member satisfaction. Therefore, we propose the following hypothesis:

H8. Reputation positively affects satisfaction of online group buying.

Research methodology
Measurement development
A survey methodology was used to enhance the generalizability of the results. All operational definitions of construct were adapted from related literature. Table II shows the summarized definitions of the constructs and sources.

We carefully reviewed and adapted altruism measurement items from related literature. The measurement items were slightly modified to suit the context of online

Construct	Operational definition	Adapted from
Altruism	Consumers enjoy to share online group buying information without expecting returns	Davenport and Prusak (1998)
Reciprocity	Consumers share online group buying information with others and expect to get feedback	Davenport and Prusak (1998)
Reputation	The perception of increased good name due to sharing online group buying information	Kankanhalli *et al.* (2005)
Trust	Consumers' confident feeling about online group buying	Odekerken-Schroder *et al.* (2003)
Satisfaction	Consumer feelings about online group buying	Bhattacherjee (2001)
Online group buying intention	The perception of individuals to perform a particular behavior, online group buying	Fishbein and Ajzen (1975)

Table II.
Operational
definition of
the constructs
and sources

group buying. All items were performed on a pre-test to validate the instrument. The pre-test included nine graduate students and two experts with online group buying experience to assess its logical consistency, items reflecting the constructs, ease in understanding semantic wording, length, and format of the questionnaire, and contextual relevance. Table III shows a summary of the measurement items.

Construct	Measurement items	Adapted from
Altruism	It feels good to help someone by sharing online group buying information through Ihergo	Kankanhalli *et al.* (2005)
	Sharing online group buying information with others through Ihergo gives me pleasure	
	I enjoy sharing online group buying information with friends through Ihergo	
	I enjoy helping others through sharing online group buying information through Ihergo	
Reciprocity	When I share my online group buying information through Ihergo, I believe I will receive an answer for giving an answer	Kankanhalli *et al.* (2005)
	When I share my online group buying information through Ihergo, I expect someone to respond when I need information	
	When I contribute online group buying information to Ihergo, I expect to get back information when I need it	
	When I share online group buying information through Ihergo, I believe that my queries for group buying information will be answered in the future	
	I find my participation in sharing online group buying information through Ihergo to be advantageous to me and others	Hsu and Lin (2008)
Reputation	Sharing online group buying information improves my image with friends	Kankanhalli *et al.* (2005)
	People who share online group buying information have more prestige than those who do not	
	Sharing online group buying information improves others recognition of me	
	I earn respect from others by sharing online group buying information	Hsu and Lin (2008)
	Sharing online group buying information enhances my personal status	
Trust	Online group buying gives me a feeling of trust	Odekerken-Schroder *et al.* (2003)
	I have confidence in online group buying	
	Online group buying gives me a trustworthy impression	
Satisfaction	I feel satisfied with the overall experience of online group buying	Bhattacherjee (2001)
	I feel pleased with the overall experience of online group buying	
	I feel content with the overall experience of online group buying	
	I feel delighted with the overall experience of online group buying	
Online group buying intention	I intend to purchase items by online group buying in the future	Ko *et al.* (2009)
	I intend to learn more about how to use online group buying in the future	
	I highly recommend online group buying to others	

Measurement items on this scale were scored on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The main survey was conducted after determining the content validity of the questionnaire.

Survey administration
The research model was tested with data from online group buyers. To examine the effects of motivations on online group buying intention, a field study on Ihergo (www.ihergo.com/) was chosen because it is the largest online group buying marketplace in Taiwan. Ihergo has customers-initiated and merchants-initiated transaction of online group buying. Both customers-initiated and merchants-initiated transaction have same purchasing procedures. Customers may join any activities of online group buying. Returned questionnaires numbered 302 responses with 20 incomplete data, resulting in 282 valid responses for data analysis. Table IV shows the details of respondent characteristics. Since our data were collected through self-report measures, non-response bias is an issue. We tested for this bias by comparing early respondents to the late ones. The concept behind this approach is consistent with the procedure suggested by Armstrong and Overton (1977), it is that late respondents are more likely to resemble non-respondents than early respondents.

Comparison of means (*t*-test) on demographic variables, such as age and job, revealed no significant difference ($p > 0.05$) between early and late responders. Thus, the non-response bias does not threaten our findings. Furthermore, a common method bias might be a threat to the validity of a research. The Harman's one-factor test is used to assess potential common method bias (Podsakoff and Organ, 1986). A principal component factor analysis, the evidence for common method bias exists when a general construct accounts for the majority of the covariance among all constructs. The result revealed six factors with an eigenvalue greater than one.

Measure	Items	Frequency	%
Gender	Male	141	50.0
	Female	141	50.0
Age	< 18 years old	6	2.1
	19-22 years old	59	20.9
	23-30 years old	197	69.9
	31-45 years old	18	6.4
	> 46 years old	2	0.7
Education	High school (below)	21	7.4
	College	198	70.3
	Master (above)	63	22.3
Online group buying frequencies within three months	< 3 times	208	73.8
	4-6 times	47	16.7
	7-9 times	12	4.2
	> 10 times	15	5.3
What types of goods do you purchase in group buying?	Foods	172	61.0
	Excellent costumes	47	16.7
	Daily life products	17	6.0
	3C products	12	4.3
	Cosmetics	12	4.2
	Others	22	7.8

Note: $n = 282$

Table IV.
Descriptive
statistics of survey
respondents

With six factors together accounted for 77.75 percent of the total variance, the first (largest) factor only accounted for 46.64 percent of the variance and there was no general factor in the un-rotated factor structure, indicating that common methods bias may not be a serious problem in the data.

Data analysis

The data in this study were examined using partial least square (PLS). PLS is recommended for use when: the sample size referring to the number of latent variables is small; the model is complex and has numerous latent and manifest variables; the model has less strict assumptions on the distribution of variables and error terms; and the model has both reflective and formative variables (Henseler *et al.*, 2009). PLS has become increasingly more popular because of less restrictions on measurement scales, sample size, and residual distribution (Chin and Newsted, 1999), and because it analyzes both a measurement model and a structural model. A measurement model was used to evaluate reliability, convergent validity, and discriminate validity. A structural model was used to determine the significance and association of each hypothesized path, and the explained variance (R^2 value).

Measurement model

The measurement model was evaluated by the criteria of reliability, convergent validity, and discriminate validity. Reliability was examined by composite reliability values above the 0.70 benchmark (Fornell and Larcker, 1981). Table V shows all values above 0.70, indicating satisfactory reliability. Convergent validity was examined by all indicator loadings that were significant and exceeding 0.7 and average variance extracted (AVE) by each construct exceeding 0.50 (Fornell and Larcker, 1981). Table V shows all indicator loadings above 0.70 and all AVEs exceeding 0.50, indicating satisfactory convergent validity.

Discriminant validity is demonstrated by the square root of the AVE for each construct exceeding the correlations between the constructs (Chin, 1998). The results displayed in Table VI show that all the criteria are met. These results indicate that the proposed models have good reliability and validity.

Structure model

In structural model analysis, determining the significance and association of each hypothesized path and the R^2 value is important. Figure 2 shows the standardized path coefficient and the significance of each path reported by PLS.

H1 and *H2* investigate the effect of online group buying intention. Trust ($\beta = 0.402$, *t*-value $= 5.227$, $p < 0.001$) and satisfaction ($\beta = 0.272$, *t*-value $= 3.503$, $p < 0.001$) are positively related to online group buying intention, and explain a significant percentage of the variance in continuance intention ($R^2 = 0.391$). These results support *H1* and *H2*.

H3, *H5*, and *H7* investigate the effects on trust. Altruism ($\gamma = 0.146$, *t*-value $= 2.052$, $p < 0.005$), reciprocity ($\gamma = 0.399$, *t*-value $= 5.622$, $p < 0.001$), and reputation ($\gamma = 0.168$, *t*-value $= 3.069$, $p < 0.01$) are positively related to trust, and explain a significant percentage of the variance in trust ($R^2 = 0.37$). These results support *H3*, *H5*, and *H7*. *H4*, *H6*, and *H8* investigate the effects on satisfaction. Altruism ($\gamma = 0.251$, *t*-value $= 3.110$, $p < 0.01$), reciprocity ($\gamma = 0.465$, *t*-value $= 6.190$, $p < 0.001$), and reputation ($\gamma = 0.058$, *t*-value $= 1.365$, $p > 0.05$) are positively related to trust, and explain a significant percentage of the variance in satisfaction ($R^2 = 0.474$). These results support *H4* and *H6*. Reputation does not have a significant effect on satisfaction.

Construct	Item	Item mean	SD	Error loading	Standardized item loading	t-Statistic	CR	AVE
AL	AL1	3.83	0.81	0.21	0.89	50.32***	0.93	0.78
	AL2	3.80	0.81	0.20	0.89	67.52***		
	AL3	3.93	0.73	0.25	0.87	48.91***		
	AL4	3.87	0.76	0.22	0.88	57.46***		
RECI	RECI1	3.91	0.67	0.37	0.79	25.19***	0.92	0.69
	RECI2	3.99	0.70	0.32	0.83	38.71***		
	RECI3	3.91	0.69	0.30	0.84	37.92***		
	RECI4	3.95	0.68	0.28	0.85	40.47***		
	RECI5	3.92	0.73	0.30	0.84	35.43***		
REPUT	REPUT1	3.36	0.83	0.27	0.86	42.77***	0.94	0.77
	REPUT2	3.32	0.85	0.20	0.89	52.67***		
	REPUT3	3.40	0.85	0.18	0.91	59.44***		
	REPUT4	3.27	0.84	0.18	0.91	73.72***		
	REPUT5	3.44	0.91	0.32	0.83	36.80***		
TRU	TRU1	3.62	0.78	0.19	0.90	66.22***	0.93	0.83
	TRU2	3.73	0.76	0.15	0.92	73.37***		
	TRU3	3.65	0.80	0.18	0.91	70.95***		
SAT	SAT1	3.93	0.72	0.23	0.88	51.61***	0.94	0.81
	SAT2	3.89	0.75	0.17	0.91	81.41***		
	SAT3	3.87	0.71	0.17	0.91	79.39***		
	SAT4	3.89	0.74	0.20	0.90	53.57***		
INT	INT1	3.89	0.74	0.43	0.76	19.26***	0.87	0.69
	INT2	3.41	0.87	0.21	0.89	61.11***		
	INT3	3.31	0.83	0.28	0.85	40.12***		

Notes: AL, altruism; RECI, reciprocity; REPUT, reputation; TRU, trust; SAT, satisfaction; INT, online group buying intention; ***Significant at $p < 0.001$

Table V.
Scale properties
and assessment
of reliability

Construct	Items	AL[a]	RECI	REPUT	TRU	SAT	INT
				Factor correlations			
AL	4	0.88					
RECI	5	0.65	0.83				
REPUT	5	0.52	0.44	0.88			
TRU	3	0.49	0.57	0.41	0.91		
SAT	4	0.58	0.65	0.38	0.71	0.90	
INT	3	0.55	0.51	0.43	0.58	0.53	0.83

Notes: [a]The diagonals represent the square root of average variance extracted (AVE). AL, altruism; RECI, reciprocity; REPUT, reputation; TRU, trust; SAT, satisfaction; INT, online group buying intention

Table VI.
Correlations among
constructs

Table VII computes and summarizes all the effects of factors (including direct effects, indirect effects, and total effects) and variance explanation.

Discussion and implication
Discussion
Online group buying is a group of buyers purchase together with the same product interests. This study developed an integrated model designed to investigate and explain the relationships among altruistic and egotistic motivation, trust, satisfaction,
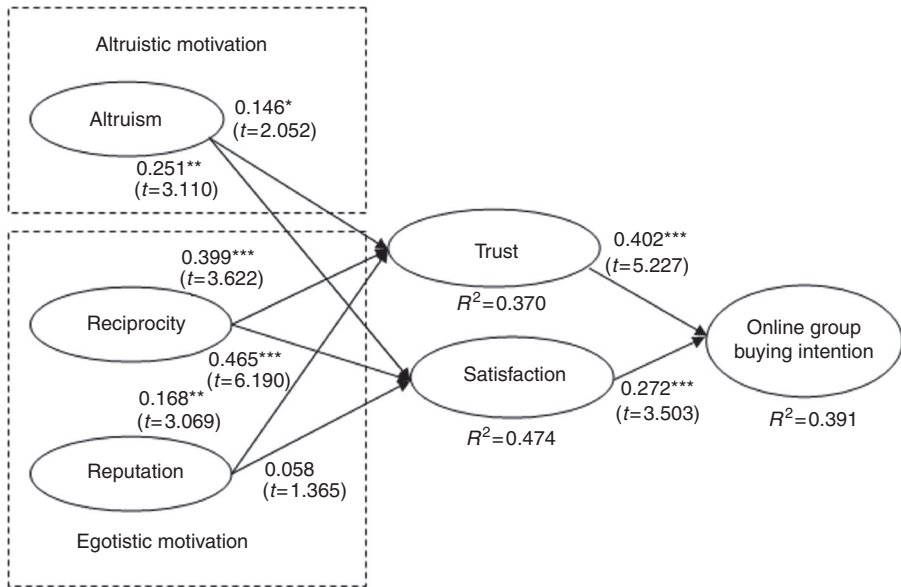
Figure 2.
Results of SEM
analyses

Notes: *,**,***Significant at $p < 0.05$; $p < 0.01$; $p < 0.001$

Factors			TRU	SAT	INT
AL		Direct effects	0.146	0.251	–
		Indirect effects	–	–	0.13
		Total effects	0.146	0.251	0.13
RECI		Direct effects	0.399	0.465	–
		Indirect effects	–	–	0.29
		Total effects	0.399	0.465	0.29
REPUT		Direct effects	0.168	0.058	–
		Indirect effects	–	–	0.08
		Total effects	0.168	0.058	0.08
TRU		Direct effects	–	–	0.402
		Indirect effects	–	–	–
		Total effects	–	–	0.402
SAT		Direct effects	–	–	0.272
		Indirect effects	–	–	–
		Total effects	–	–	0.272
Variance explanation (R^2)			0.370	0.474	0.391

Table VII.
Effects of factors

Notes: AL, Altruism; RECI, Reciprocity; REPUT, Reputation; TRU, Trust; SAT, Satisfaction; INT, Online group buying intention

and online group buying intention. The results provide support for the theoretical model and most of the proposed hypotheses, and add to existing research in validating group buying behavior in an online environment.

The effect of trust and satisfaction on online group buying intention
The psychological process factors of trust and satisfaction have a significant positive effect on online group buying intention. Trust is a prime determinant of how people

behave in social interactions when they feel they are in uncertain situations (Blau, 1964). Trust increases the certainty of how other people behave and reduces the fear of abuse (Zand, 1972). This similarly implies that online group buying exhibits care and competence, and that consumers can conduct transactions smoothly. This results in the consumer's desire for collaborative online buying. In such cases, trust determines the nature of human intention. The results of this study show that satisfaction significantly influences the continuance intentions of experienced users. Online group buying is more complex than online shopping and requires reaching a certain number of purchases. This type of shopping requires more members, unlike individual online purchasing. If a single group member fails to purchase, online group buying may fail. The quantity of delivered products and services is also large, increasing the complexity and difficulty of performing a transaction. A commercial transaction that finishes smoothly and fulfills customer needs will result in increased customer satisfaction with online group buying and the desire to further participate in online group buying.

Effects of altruistic and egotistic motivation on trust
This study examined effects of altruistic motivation (altruism) and egotistic motivation (reciprocity and reputation) on trust. The results show that altruism has a significant positive effect on trust. Altruism is that people engage in social interactions based on the expectation that it does not lead to social rewards from others. However, people may have intrinsic benefits from helping others. People taking part in online shopping are intrinsically motivated to share information with others because they enjoy helping others (McLure-Wasko and Faraj, 2000). Sharing information on online group buying web sites enhances product and service transparency. People trust more observable information. The results of helping others without expecting returns always increase the degree of trust in online group buying activities. In online group buying, participants always retrieve information when required, which is advantageous. When participants obtain goods on time and perceive product quality, their trust increases their online group buying intention. After experiencing the benefits of reciprocity, group members develop trust (Davenport and Prusak, 1998) and join online group buying activities. The result of this study show that reputation significantly influences trust. Online shopping members are keen to encourage highly credible members to join their group buying. Group members share information and experiences of online group buying to enhance their good image, earn respect, and gain recognition, thus winning the confidence and trustworthiness of other members. Failure to focus on this area could damage future online group buying opportunities.

The effects of altruistic and egotistic motivation on satisfaction
The factors of altruistic motivation (altruism) and egotistic motivation (reciprocity) have significant positive effects on satisfaction in the overall experience of online group buying, whereas reputation (egotistic motivation) does not. People feel contentment in helping others, which fulfills an inner desire. This altruistic motivation might be specific for human beings, in which a person senses pleasure from the happiness of others (Kawata, 2010). Sharing information with others results in pleasure through collective shopping web sites. Thus, altruistic motivations affect satisfaction (Lehmann, 2001). Reciprocity has significant positive effects on satisfaction. From the perspective of social exchange, customers participating in online group buying may expect rewards (reciprocity). When group members contribute online group buying

information to others, they always retrieve information when required. Participant sharing of online group buying information always benefits the participant and others, such as cost down, conveniences, and products and services through collective online purchasing. Thus, collective online shoppers feel satisfaction because of needs fulfillment by reciprocal benefits and the positive overall experience of online group buying activities.

Finally, contrary to our hypothesis, reputation does not significantly influence satisfaction. There are two possible reasons. First, sharing online group buying experiences and opinions may foster a favorable reputation. However, not every customer assigns his/her reputation as a priority, favoring instead prices and products. Thus, enhancing reputation may not fulfill the satisfaction of some customers. Second, according to expectation-disconfirmation theory, when a reward (reputation) outperforms expectations (positive disconfirmation), post-purchase satisfaction results. When a reward (reputation) falls short of expectations (negative disconfirmation), the consumer is likely to be dissatisfied (Oliver, 1980). The possible reason is that collective online shoppers have higher expectations of their own reputations. A responsive reputation typically falls short of their expectations. Thus, reputation does not significantly affect satisfaction.

Implication for academics
This study extends our understanding of the value of online group buying and sheds light on the potential effects of altruistic and egotistic motivation on online group buying intention. We developed an integrated model to examine the effects of altruistic motivation (altruism) and egotistic motivation (reciprocity and reputation) on online group buying intention through trust and satisfaction. From the perspective of altruistic and egotistic motivation, altruism, reciprocity, and reputation represent three key elements of collective behavior. Integration of the altruism, reciprocity, and reputation results in a better explanation on online group buying intention through the psychological process, trust, and satisfaction. A major finding of the study is the dominant role of reciprocity, which has a strong positive influence on trust and satisfaction and indirect effects on online group buying intention. This finding implies that online group shoppers enjoy receiving favorable feedback when they need information. Thus, online group shoppers may have higher online group buying intentions. In addition, the results indicate that trust and satisfaction play essential roles in online group buying intention. The finding implies that enhanced trust and satisfaction may increase online shoppers' intention to continue shopping online together in an e-vendor store.

Implication for practice
The results of the study show that trust and satisfaction are salient factors determining buying intention of collective online shopping. Building customer trust and consumer satisfaction is critical for an e-vendor. Online shoppers search diligently for detailed products or service information, and then purchase the most appropriate ones. E-vendors should reveal suitable and high-quality information to customers to increase their confidence in online stores. When they perceive risks related to certain products, consumers ask for help from friends or ask for advice from professionals concerned with said product or service. E-vendors should focus more on customer messages on an online group buying web site because positive messages attract more customers and have better reputation. In contrast, negative messages may lost customers and reduce

products and service sale number. Further, more e-vendors are establishing social web pages on Facebook, Twitter, and Plurk to promote their products and services. Plurk is a microblogging platform for people to post topics and gather audience responses. They must also focus more on comments regarding the stores from a motivational perspective, considering altruism, reciprocity, and reputation because the social network influences e-vendor image and customer trust. Online group buying is more complex than individual online shopping and is more difficult to fulfill customer requirements. To satisfy customers shopping online collectively, e-vendors could provide altruistic online group buying activities, enhance reciprocal services and products, develop enhanced reputation mechanisms, and present an easier approach to encourage online group buying on a web site. In addition to motivations, e-vendors must ensure that the entire process of online group buying runs smoothly, such as good internet access and stable and fast internet connections, delivering good products and service on time, and fast responses to customer complaints. Online group shoppers who are satisfied with the whole process of online group buying exhibit purchase intention.

Limitations
Our study has four limitations. First, we establish reciprocity and reputation as first-order factors. Egotistic motivation, including reciprocity and reputation, is a conceptual preference for a second-order variable. Future research may consider applying second-order variables. Second, using larger sample sizes increases precision (Hair *et al.*, 2013). Therefore, we suggest that future research collect larger samples. Third, the study was conducted in Taiwan which has its specific cultures. Generalization of the findings in this study to people in other countries with different culture should be done with caution. In fact, this is a good area for future research. Finally, the cross-sectional nature of the study restricts longitudinal comparison. Future researches may consider longitudinal studies to validate co-created value in the same or different context.

Future research
This study examined the influences of altruistic and egotistic motivation on online group buying intention through trust and satisfaction. Other factors influencing online group buying intention should be considered, such as community norms, enjoyment, and state of flow. These factors have not been examined in the context of the online group buying environment. Moreover, future research may examine the effects of motivations, such as playfulness, self-esteem, self-efficacy, and financial rewards, task characteristics, the process, governance on online group buying intention.

Conclusion
Although customers generally engage in online group buying to benefit themselves (egotism), altruism could be a critical motivation for online group buying intention. This study investigated the effects of altruistic and egotistic motivations on online group buying intention through the trust and satisfaction by collecting data from a field study, Ihergo, the largest online group buying marketplace in Taiwan. Our results show that online group buying intention is determined by both trust and satisfaction. Trust is determined primarily by reciprocity, followed by reputation and altruism, whereas satisfaction is determined primarily by reciprocity, followed by altruism. Reputation does not significantly affect satisfaction because of personal higher expectations of reputation. This study draws attention to the online group buying phenomenon, by theorizing and validating altruistic and egotistic effects on online group buying intention through

trust and satisfaction. Our research confirms not only that reciprocity and reputation are crucial motivations but also that altruism is a significant motivation in online group buying intention. We also provide clear insights for academic and practice in the online group buying context.

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