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Perceived benefits, perceived risk, and trust

Influences on consumers' group buying behaviour

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Abstract

Purpose – The purpose of this paper is to investigate how perceived benefits, perceived risk, and trust influence Chinese consumers' online group buying organized by institutional initiators.

Design/methodology/approach – In total, 578 valid samples were collected via an online survey. Multiple regressions were used to test the research model.

Findings – The results show that three perceived benefits (price benefit, convenience benefit, and recreational benefit) and three factors that together represent trust of the initiator (perceived reputation, structural assurance, and website trustworthiness) significantly positively influence consumers' attitudes toward online group buying.

Originality/value – This study is the first one to specifically focus on how perceived benefits and perceived risks influence consumers' attitudes toward online group buying.

Keywords China, Consumer behaviour, Group behaviour, Electronic commerce, Group buying behaviour, Online, Chinese consumers, Perceived benefit, Perceived risk, Trust to initiator, Attitude, Purchase intention

Paper type Research paper

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1. Introduction: what is group buying

Group buying as a new shopping method and an effective marketing method has made rapid progress in recent years (Jing and Xie, 2011; Liao *et al.*, 2012). Different individual buyers who are looking for the same product may find one another through the internet, then band together to negotiate with suppliers to get a discount based on the purchase volume, i.e. group buying is a discount model of pooling consumer demand and seeking quantity price discounts (Kauffman *et al.*, 2010a). Anand and Aron (2003) conclude that there are two core elements of group buying: demand aggregation and volume discounting. Group buying starts with a group of consumers who have the same demand. Then they form a coalition, bargain with the suppliers based on volume, and negotiate a discount or other benefits such as free gifts or special services (Li *et al.*, 2004). Consumers in groups can buy a wide range of goods including commodity items in daily use, home appliances, automobiles, upholstery materials, and even real estate. As more consumers join a group buying effort, the more bargaining power they have (Yuan and Lin, 2004). Chen *et al.* (2007) compare group buying actions to traditional quantity discount models and find two major differences. First, with traditional quantity discounts, suppliers set the discount quantity and price, and individual buyers order the product based on that information. In group buying, the price is determined by the total combined order of all the buyers. Second, in group buying actions, one buyer's order affects the other buyers because the price is dynamic and uncertain. As a new quantity discount model, enabled by internet technology that can bring different buyers together to pool their buying power, group buying may become increasingly effective with the continuous development and growth of e-commerce.

2. Internet upscales group buying

Group buying consists of like-minded individuals who join forces using a number of strategies to secure discounts that might not be otherwise achieved on their own. Group buying, under which consumers enjoy a discounted group price if they are willing and able to achieve a required group size and coordinate their transaction time, is similar to a cooperative, where informal groups organize and buy directly from a wholesaler (Jing and Xie, 2011). By using online group buying (OGB), customers can get extraordinary discounts on premium products and services. This not only meets customer demand, but also helps sellers to find new ways to increase sales and launch new business models. All parties benefit in these transactions; consumers can obtain goods less expensively through collaboration, and suppliers can obtain larger profits through selling more (Liao *et al.*, 2012; Chen *et al.*, 2007). However, in traditional markets, it has often been difficult to form a group of people with the identical demand necessary to create a sufficiently large aggregate demand. The internet makes this dream – "can we all get a better deal by making purchases together?" come true (Yuan and Lin, 2004). This dream is the likely motivation behind the newest group buying boom and a new breed of group buying web sites. By 2003, group buying began to be widely used in the USA, Europe, and Asia (Anand and Aron, 2003).

The group buying model appears as an online store price mechanism in the US and European counties. Most of these web sites have a full online transaction system, and an integrated dynamic auction system for group buying online: as more consumers are involved, the lower the price presented by the seller (Kauffman and Wang, 2001). The current global OGB industry leader, Groupon, was launched in November 2008 and in

2012 held close to 80 per cent of the US market (Draper, 2012). The company promotes deals in 31 countries and 300 cities and has 35 million worldwide members. The original Groupon model is to offer one deal per day in each of its markets. Consumers have 24 hours to buy the deal and, when enough people commit, the deal goes live with Groupon taking 50 per cent of the sale price of each coupon sold (Draper, 2012). Group buying continues to develop rapidly in many countries. Rationales for this rapid development include its nature (the attraction of a lower price) and changing macro environments (i.e. wider spread of the internet, larger number of internet users, more mature technological development).

Group buying can occur through responses to internet advertising, TV advertising, newspaper advertising, flyers, and various personal connections. However, most group buying today relies extensively on the internet, which plays an important role in sharing information, recruiting buyers, providing for convenient online payment, etc. (Kauffman *et al.*, 2010a). Thus, the internet is a powerful tool for demand aggregation and a great platform to organize group buying (Anand and Aron, 2003; Jing and Xie, 2011; Liao *et al.*, 2012). Although some early pioneers failed, OGB has been reviving in Europe, North America, and Asia in recent years, thanks in part to the increasing connectivity of people in online forums and social networks (Li *et al.*, 2010; Jing and Xie, 2011). In addition, there are differences among different online buying behaviours (Liao *et al.*, 2012; Jing and Xie, 2011; Kauffman *et al.*, 2010a; Lian and Lin, 2008; Chen *et al.*, 2007; Chang *et al.*, 2005; Gefen *et al.*, 2003), Table I offers a basic comparison.

3. Research gap

OGB is now a major phenomenon in many countries. Nevertheless, research in the field is limited, despite its rapid growth. There are some previous studies that investigated the factors influencing consumers' intentions to participate in online shopping (McKinney, 2004; Forsythe *et al.*, 2006; Li *et al.*, 2006) or online auction (Kauffman and Wang, 2001; Chen *et al.*, 2007; Kauffman *et al.*, 2010a, b). However, this study is the first to focus specifically on how perceived benefits and perceived risks influence consumers' attitudes toward OGB. In this sense, the results could provide updated and focused evidence to both e-commerce and marketing areas by helping to fill the research gap. Further, whereas individual online shopping-related studies have focused primarily on the trust between two sides of a transaction (sellers and buyers), the current study emphasizes trust of the initiator (the third party), who plays a critical

	Traditional individual online shopping	Online auction buying	Online group buying
Nature of initiator	Merchant	Customer	Intermediary
Pricing mechanism	Fixed pricing	Single highest bidder wins	Fixed pricing with time sensitive discounts
Product and service selection	Wide	Limited	Wide
Frequency of the deals	Depends	Decided by auctioneer	Two to three deals daily
Network and relations	Individualistic. Group interpersonal information sharing is sometimes available	Individualistic	Group interpersonal information sharing

Table I.
Comparisons among three online buying behaviours

role in group buying. Although OGB and online group auctions have some common features (e.g. having a third-party initiator; requiring many participating buyers), the circumstances that apply in online auctions may not apply to OGB (Van Horn *et al.*, 2003). The study could further replenish and reinforce online buying behaviour-related theories with empirical evidence about OGB. To address mentioned deficiencies, we integrated elements from traditional consumer decision-making frameworks and the online shopping literature to develop scales with which to measure the perceived benefits, perceived risks, and trust of the initiator associated with OGB. Further, the scales developed may prove a useful tool that enables online retailers to gain a better understanding of their grouped shoppers' current and potential future shopping behaviour in the online environment.

4. Hypotheses development

4.1 Perceived benefits

Perceived benefits are beliefs about the positive outcomes associated with a behaviour in response to a real or perceived threat (Chandon *et al.*, 2000). The perceived benefit of buying construct is most often applied to normal shopping behaviours and is specific to an individual's perception of the benefits that will yield satisfaction by engaging in a specific shopping action. There are two related research streams: research on traditional retail patronage issues (largely theoretical in nature) and research dealing with non-store patronage behaviour. Sheth (1983) postulated that personal determinants of shopping in traditional formats can be broadly understood as being influenced by functional and nonfunctional motives. Functional motives are related to utilitarian functions such as convenience, variety and quality of merchandise, and price, whereas nonfunctional (hedonic) motives are related to social and emotional needs for enjoyable, interesting shopping experiences (Forsythe *et al.*, 2006). Currently there is no unified classification of perceived benefits of OGB, so other similar studies need to serve here as references. Kauffman *et al.* (2010a) explore sequence-based, time-based, and quantity-based incentives, as well as consumers' perceptions of fairness in their participation in online group auctions. Forsythe *et al.* (2006) conclude four major perceived benefits of online shopping:

(1) shopping convenience;
(2) product selection;
(3) ease/comfort of shopping; and
(4) hedonic/enjoyment.

Furthermore, Li *et al.* (2006) sort out many previous perspectives and propose three major benefits associated with online buying behaviour:

(1) a price benefit;
(2) a convenience benefit; and
(3) a recreational benefit.

Tsai *et al.* (2011) use "perceived usefulness (PU)[1]", the benefits consumers could obtain through OGB, as determinants of OGB intention. Because OGB behaviour is similar to online shopping behaviour in many aspects, this study summarizes results of these studies as hypotheses references.

Price is a very attractive factor to most consumers when they make buying decisions. Biswas and Blair (1991) conclude that the price discount could affect consumers' price belief, and eventually affect their shopping intentions. Kauffman and Wang (2001) consider that the price would affect the recruitment of group buying. In competitive markets, if consumers cannot perceive the significance of the discount gained by group buying, they will turn to retail stores or buy individually online. Compared to traditional retail store shopping and online shopping, group buying has a bigger opportunity to gain better quantity price discounts:

H1a. The price benefit positively influences consumers' attitude towards group buying.

Convenience is a major concern for many consumers (Gehrt and Shim, 1998). Berkowitz *et al.* (1979) note that in-home shoppers actively seek shopping convenience and have negative attitudes towards shopping in stores. The more consumers are concerned about convenience, the more likely they are to shop online (Li *et al.*, 2006). Group buying saves buyers' time by locating lower prices and in the bargaining process; therefore, convenience is a plausible reason to affect group buying intention. Tsai *et al.* (2011) also recognize convenience as one of the elements of PU of OGB:

H1b. The convenience benefit positively influences consumers' attitude towards group buying.

A recreational benefit is important among white-collar females who treat shopping as a pleasurable experience (Bellenger and Korgaonkar, 1980). Compared to convenience shoppers, they spend more time shopping than making purchasing decisions. Sinha (2003) finds about 40 per cent of Indian shoppers are "fun shoppers" who see shopping as entertainment in a mall intercept survey. However, Li *et al.* (2006) conclude that although the internet offered such features as chat rooms, etc. it still could not satisfy some consumers' need to interact with one another. Internet technology has been developing rapidly and group buying is a new way for consumers to shop. As a result, this study examines whether a recreational benefit can also be a motivation to join group buying. Sheth and Parvatiyar (1995) point out consumers' empathized perceived benefits can be predictors of their buying behaviour. Li *et al.* (2006) also came to a similar conclusion:

H1c. The recreational benefit positively influences consumers' attitude towards group buying.

4.2 Perceived risks

According to the report by the Organization for Economic Cooperation and Development, the financial tsunami of 2008-2009 and the global economic recession have prompted customers and businesses to find low-priced goods through the internet (Liao *et al.*, 2012). Thus, the global online shopping platform is flourishing. However, the growth of online shopping will depend in part on potential obstacles and risks, including the security of personal information, dissatisfaction with products, goods delivery that does not meet customer expectations and so on (Liao *et al.*, 2012). To date there is no universally recognized conclusion about perceived risks of OGB, so this study refers primarily to perceived risks of online shopping. In online shopping, when consumers' perceived risk is low, their purchase intention is high (Järvenpää and Tractinsky, 1999). Bhatnagar *et al.* (2000) consider that the risks associated with internet shopping were financial risk and product risk. Miyazaki and Fernandez (2001) indicate that privacy risk

and credit card security risk were also associated with online buying behaviour. Chang *et al.* (2005) summarize four significant perceived risk types, as follows:

(1) product risk;
(2) credit card fault risk;
(3) uncertainty; and
(4) concern of system security.

Forsythe and Shi (2003) and Forsythe *et al.* (2006) merge credit card security risk with financial risk; and merge privacy risk with psychological risk; they further summarize that there are four perceived risks when customers buy offerings through the internet:

(1) financial;
(2) product;
(3) psychological; and
(4) time/convenience.

Forsythe and Shi include two variables (credit fault risk and concern about system security) into their financial risk and psychological risk; they also divide uncertainty risk into psychological risk and time risk. Although Zhou *et al.* (2011) scan ten different types of risks[2] and finally integrate five specific ones (financial risk, performance risk, information services risk, risk to choose partners, and web site core services risk) that they believe are applied to OGB in their preliminary study, research from Forsythe and Shi (2003) and Forsythe *et al.* (2006) provides a more convincing and useful framework for explaining perceived risks in OGB.

Financial risk is the potential for monetary loss in almost all transactions, including online buying (Forsythe *et al.*, 2006). Forsythe and Shi (2003) find there is a negative relationship between perceived risk and online shopping behaviour, and specifically that perceived financial risk is the most consistent predictor of internet patronage behaviour. When consumers are involved in OGB, they might worry about, for example, not receiving the product (e.g. due to an act-of-God/force majeure[3]) or being overcharged. Psychological risk in online buying is also high because internet security is not stable. Consumers' personal and credit card information can be stolen, creating a combination of both financial and psychological risk (Forsythe *et al.*, 2006; Forsythe and Shi, 2003; Järvenpää and Tractinsky, 1999). In OGB, many credible corporate initiators, for example Alibaba (www.alibaba.com) have begun using a secure online payment system to lower financial risk. For example, Alipay, similar to PayPal, allows the trusted entity/bank to hold the buyers' payments and forward them to the seller after all buyers have received the products. In any event, group buying participants provide their personal information to the initiator to keep in touch, and even provide their account number or a deposit to make the deal, so that some degree of financial and psychological risk is unavoidably related to group buying behaviour. Regarding the nature of OGB, financial risk is always accompanied by privacy risk when someone gives personal information for a transaction (especially personal financial information, e.g. credit card and/or bank account numbers). Since Forsythe and Shi (2003) and Forsythe *et al.* (2006) merge credit card security risk with financial risk, and merge privacy risk with psychological risk. Our study also gave clear definitions about

financial risk (including financial related privacy risk, mainly about credit card and bank account numbers) and psychological risk (including non-financial related privacy risk, e.g. name, postal address, etc.):

H2a. Financial risk negatively influences consumers' attitude towards group buying.

H2b. Psychological risk negatively influences consumers' attitude towards group buying.

Product risk is the loss incurred when the product does not perform as expected. Spence *et al.* (1970) indicate that consumers perceive more risks when they shop by mail-order than retail store buying. When consumers buy online – similar to mail-order in this respect – they cannot personally inspect products beforehand, thus increasing product performance risk. Currently, most group buying initiated by credible companies/web sites offers detailed product information (e.g. series number of specific model, photos, bar code), reasonable refund policy, warranty, and after sale service to compensate for any perceived product risk. Internet enables "information equalization" and reduces information asymmetries that characterized earlier production-based economies. The growing equality in access to information about production, quality and price is often thought to generate a more transparent market with more product information and lower product risk (Draper, 2012). Furthermore, Kauffman *et al.* (2010b) does not list product risk a critical factor in online group auction behaviour. However, Forsythe and Shi (2003) conclude that product performance risk was most frequently cited as the reason for not purchasing online, and it is also a significant predictor to those heavy/frequent online shoppers. In this sense, this study still acknowledges product risk:

H2c. Product risk negatively influences consumers' attitude towards group buying.

Time risk is the opportunity cost of time in searching for, delivering, fitting or customization of a product (Stone and Grønhaug, 1993). Group buying transaction time coordination is a critical issue for consumers' willingness to join the collective buying (Jing and Xie, 2011). Unlike individual online buying, a characteristic of group buying is that early participants need to wait for others to join before reaching a specific discount threshold, when the total order is placed. Obviously, if the total order never reaches closure those early participants will need to find an alternative purchase arrangement. Similarly, despite the availability of information to help consumers know the current status of their order and decide on the value of the deal, the limited timeframe provided to make a decision about whether or not to purchase might restrict the research a late comer (individual) is able to do. The technique of applying time pressure is widely used in traditional advertising where sales are described as "limited time offers" and infomercials urge consumers to "order now" to receive some added value on their purchase (Draper, 2012). To shorten the wait time for each deal, group buying initiators are introducing more efficient systems (to generate a proper deal offer with decent order sizes and discounts) to create a faster "turnover rate" of group buying activity. No matter what, based on the very nature that group buying requires some patience in exchange for favorable discount pricing, perceived time risk still influences group buying behaviour even though many participants already understand that:

H2d. Time risk negatively influences consumers' attitude towards group buying.

4.3 Trust of the initiator

The literature includes several definitions and operational metrics for trust. Some trust definitions stress a functional point of view, i.e. trust reduces complexity in situations of uncertainty (Grabner-Kräuter, 2002). Trust is also the willingness of a party to believe the actions of another party based on the expectation that the other will perform a particular action properly, irrespective of the ability to monitor or control the other party (Mayer *et al.*, 1995). Trust is extraordinarily important in online shopping (Gefen *et al.*, 2003), which differs from traditional shopping in that it has the unique features of uncertainty, anonymity, lack of control, and potential opportunism (Järvenpää and Tractinsky, 1999). Sonja (2002) concludes that the importance of trust is based on considerations of economic benefits and an efficient use of the trust mechanism in e-commerce transactions. Tan and Thoen (2000) also identify that the lack of trust in online transactions and in e-retailers generally are major obstacles in the adoption of online shopping. The most unique part of group buying, in comparison to traditional buying behaviour, is that in online buying there must be an initiator, who could be a seller, a mediator (third-party web site), or a buyer, before group buying can happen. So the variable "trust (by buyers) of the initiator" is necessary instead of merging it into perceived risks (Mayer *et al.*, 1995) a position supported by others (Mayer *et al.*, 1995; Cheung and Lee, 2001), who conclude that isolating "trust" as an independent variable instead of being a mediator is reasonable. Extensive research focusing on the relationship between e-vendors and online shoppers support this idea (Bart *et al.*, 2005; Gefen *et al.*, 2003).

Group buying initiated by buyers usually starts with a single individual who may act in the interests of all potential group buying participants. A serious concern is that the individual initiator lacks universal certification and yet there are few effective structural assurances (e.g. privacy statement and protective measures for payment) to prevent both initiator and participants from possible fraud or other problems. As a result, individual initiators are usually involved in smaller scale transactions. Group buying initiated by the sellers or a third-party platform are usually more credible and reliable, although they focus mainly on their own profit. The deals and orders tend to be much larger than those launched by individual initiators; the intermediary has considerable latitude in determining the discount offered to buyers because the large order may enable a larger discount than buyers expect. Because institutionally initiated group buying usually involves greater influence than that of individual initiators with respect to total transaction size and thus lower prices, this study focuses on the more trusted third-party institutional group buying initiator (and excludes individual initiators and merchants/sellers).

A few scholars have advanced the idea that some factors associated with group buying behaviour affect trust. Gefen *et al.* (2003) offer an integrated model of trust and the technology acceptance model in online shopping, summarizing 44 previous related studies regarding the trust concept. That research selects five items with which to measure consumers' trust in online vendors, and has emerged as one of the most important studies for following related research. Bart *et al.*'s (2005) study, which discusses drivers and the role of online trust for different web sites and consumers, uses another five items to measure consumers' perceived trust of web sites in online shopping. Kauffman *et al.* (2010b) list trust of the initiator as a dependent variable in their study regarding the group buying auction intention model. Järvenpää and

Tractinsky (1999) summarize that (1) reputation, (2) perceived size, and (3) store trustworthiness are three major factors to enhance consumers' trust in an internet store. Chang *et al.* (2005) compare "willingness to depend or trust (overall trust)" and "trust (beliefs)" and find common variables to present trust as consisting of:

(1) perceived reputation;

(2) structural assurance; and

(3) web site quality.

The three studies from Kauffman *et al.* (2010b), Järvenpää and Tractinsky (1999) and Chang *et al.* (2005) are most closely related to the present study because of the research subject/content, and this suggests a deeper inspection of these variables[4]. Perceived reputation is one of the two most important factors that influence people's trust in a webstore. The greater the perceived reputation, the greater the trust in the company (Järvenpää and Tractinsky, 1999). Perceived reputation is closely related to familiarity with the store, which researchers have also identified as an antecedent of trust. Familiarity deals with an understanding of current actions of the store, while trust deals with beliefs about the future actions of other people (Gefen *et al.*, 2003). In marketing area, brand equity or vendor's trustworthiness is always allied with the idea of reputation from a marketing standpoint. The role of perceived reputation in the virtual environment is more important than the traditional market environment (Hyde and Gosschalk, 2005). In the virtual environment, consumers cannot directly examine the goods before they purchase. They can only obtain the information about the product from the web site and trust the product description of vendor or initiator. Perceived reputation of online vendors has become a significant factor that influences consumers' attitudes towards online shopping. The research of McDonald and Slawson (2002) and Melnik and Aim (2002) have both shown that a seller's overall reputation often has a positive and statistically significant impact on the consumers' willingness to adopt online auctions. The current study posits that the reputation of the initiator also influences consumers' attitude toward group buying, as follows:

H3a. Perceived reputation influences consumers' attitude towards group buying.

Structural assurance is defined as the degree to which consumers believe that institutional structures "like guarantees, regulations, promises, legal recourse, or other procedures are in place to promote success" (McKnight *et al.*, 2002). Simply put existing institutional structures can influence consumers' beliefs and intentions. The construct of structural assurance is sometimes referred to as institution-based trust (Pavlou and Gefen, 2004) or technology trust (Ratnasingam and Pavlou, 2003). All these constructs share the same theme, i.e. consumers' beliefs about the available protection provided by institutional structures and mechanisms. It should be noted that trust in the company does not have to be a necessary condition to purchase online. It has been argued that lack of trust in the organization can be offset by trust in the control system of structural assurance (Tan and Thoen, 2002). Such a structural assurance would include the procedures and protocols that monitor and control the successful performance of a transaction, and could include the option to insure oneself against damage. When a web site contains high level structural assurance (e.g. guarantees criteria), it increases the company's overall reliability (Kaplan and Nieschwietz, 2003). Wingreen and Baglione (2005) find that structural assurance can increase both vendor

trustworthiness and technology trustworthiness. Chiu *et al.* (2010) indicate structural assurance has a positive impact on attitudes toward online auctions. Sha (2011) indicates that customer perceptions about structural assurance can significantly influence trusting intentions in business-to-consumer e-commerce. It follows to ask whether structural assurance also plays a certain role in group buying:

H3b. Structural assurance positively influences consumers' attitude towards group buying.

Because almost all group buying deals are made through initiators' web sites, web site related features (e.g. style, design, quality, appearance, etc.) become critical elements for building consumers' trust. For example, Cyr (2008) and Cyr *et al.* (2009) suggest that appropriate web site design and image could induce a user to perceive the web site as more appealing and more trustworthy. McKnight *et al.* (2002) find that perception web site quality reflects the consumer's initial perceptions about the web site and is a strong predictor of trust in the online vendor. Cyr *et al.* (2010) point out that web site color appeal is a significant determinant for web site trust and satisfaction, with differences noted across cultures. Järvenpää and Tractinsky (1999) use "online store trustworthiness" to summarize various web site related elements. In the field of online shopping, specific web site quality and trustworthiness factors are also believed to be critical in affecting the usage of virtual communities (Gefen *et al.*, 2003; Lian and Lin, 2008). If consumers perceive that the web site is trustworthy, they perceive high usefulness towards it and will develop a willingness to purchase (Van der Heijden *et al.*, 2003). Based on the previous literature:

H3c. Web site trustworthiness positively influences consumers' attitudes towards group buying.

Ajzen and Fishbein (1980) propose that the more positive a person's attitude towards a particular behaviour, the higher the behavioural intention will be. Järvenpää and Tractinsky (1999) confirm that favorable attitudes towards an internet store will increase consumers' willingness to purchase from that internet store:

H4. Consumers' attitude towards group buying influences their intention to join group buying.

5. Research method

5.1 Location: China

Chinese consumers are enthusiastic about group buying. This phenomenon is so popular that some English language media such as CNN and MSN.com have reported on the group buying situation in China. The popularity of group buying in China may owe a great deal both to the Chinese tradition of bargaining and its large population. Bargaining is common in daily life in China. Shoppers treat sticker prices as a starting point for negotiations, and then bargain with sellers to arrive at a price satisfactory for both parties (Lee, 2000). The large population base in China also contributes to the success of group buying. The China Internet Network Information Center (CINIC) reports that by July 2012, the number of Chinese internet users had increased to 538 million and the penetration rate of the internet had risen steadily to 39.9 per cent. Also by June 2012, the number of Chinese OGB shoppers had reached 61 million

(included with 210 million general online shoppers), and some 3,900 group buying web sites were generating about US$1.8 billion in annual sales (CNNIC, 2012a, b). The range of categories of group buying in China is wide, including fast moving consumer goods (e.g. cosmetics, toiletries, foods, clothes, and accessories), durable goods (e.g. appliances, automobiles, upholstery materials, and real estate), and even services (e.g. wedding planning, car-driving courses, and housekeeping).

5.2 Sampling

Half of internet users in China are between the ages of 20 and 40. This age cohort interfaces regularly with the internet and enjoys stronger consuming power than people over 40 (CNNIC, 2012a, b). Most group buyers in China are young, well-educated, familiar with the internet, more eager than average to try new things, and enjoying limited disposable budgets, either from their families or working salaries. For these reasons the target samples for the current research were Chinese between 20 and 40 years old. Most are students and young office workers. To better reflect Chinese consumers' current group buying behaviour and their actual concerns, every qualified respondent had participated in at least one successful group buying experience, initiated by a third-party initiator/web site online, not by an individual or the merchants themselves, in the previous 12 months. Two leading Chinese group buying web sites, TeamBuy (www.teambuy.com.cn) and Shanghai Tuangou Net (www.tg.com.cn), offered e-mail address lists of some previous group buying participants, with legal permission[5]. The research sample was selected after a qualifying survey identified volunteers in their 20s and 30s.

5.3 Questionnaire

Five-point Likert scales were used in the research. Questions and items of measures were designed based on previous literature (the Appendix). Two pretests were conducted, in October 2009 (with 47 valid respondents) and January 2010 (with 58 valid respondents) both in Shanghai in order to enhance the quality of the questions by performing a validity check. Nine items were dropped because of low corrected item-total correlations (< 0.5). Formal questions were confirmed after the dropping of the disqualified items.

Because most group buying behaviours have been performed with the assistance of the internet (e.g. information sharing, purchase registration, etc.), the samples were collected by sending an online questionnaire webpage in the formal survey. The formal survey was administered between January and March 2010, and designed such that respondents needed to answer all questions before submission. In order to enhance the quality and accuracy of survey responses, participants were informed at the beginning that if they completed their surveys correctly they would immediately receive an e-coupon (from the aforementioned two Chinese group buying web sites) to receive a free gift. As a result, all surveys received are valid.

6. Data analysis

6.1 Descriptive information

A total of 578 valid surveys were received. Three-quarters of the respondents (74.4 per cent) were female[6]. The majority of respondents were in the 20-25 age group and 26-30 age group (43.9 and 42.9 per cent, respectively). Most (69.6 per cent) were single. Nearly 90 per cent of the respondents were office workers (56.1 per cent) and students (32.5 per cent). Almost half of the respondents (43.3 per cent) reported earning

2,001-5,000 RMB per month (1,000 RMB = approximately US$160). Over half of all respondents (51.9 per cent) reported having two or three successful group buying experiences in the previous 12 months. Their average expenditure (each time) was relatively evenly distributed from less than 200 RMB to more than 800 RMB (Table II). Cosmetics and toiletries (57.8 per cent) and clothes and accessories (50.3 per cent) were the mostly common items purchased by survey participants through group buying.

6.2 Data analysis

The Cronbach's α-coefficient is used to assess internal reliability of each construct and variable. Higher reliability leads to higher stability. The results show that all the Cronbach's α-values are higher than 0.7 (except "price" with 0.687), a level regarded as a high reliability standard (Hair *et al.*, 1998). Cuieford (1965) advises that an α larger than 0.7 has a high reliability; and an α between 0.35 and 0.7 is still in an acceptable range. In this sense, the Cronbach's α-coefficients are qualified and the reliability of the scale is acceptable. The first step is to examine the item-to-total correlations to identify items that may display measurement error (Churchill, 1979). Thus, the extent to which the item correlates with the total score is indicative of construct validity of the item. Furthermore, most of the items in the questionnaire were based on previous research and theories; therefore the content of the questionnaire may be assumed to be valid. Principal component analysis was performed to explore the underlying factors associated with 32 items. With varimax rotation, Table III shows the final results of the factor analysis. Factor loadings for all items are over 0.5, and eigenvalues are all qualified (>1.0) with no cross-construct loadings. Thus, the scale shows satisfactory validity according to suggestions from Hair *et al.* (1998) and Nunnally (1978). Table III reports the basic statistics and correlation matrix of the variables in the study. Before employing multiple linear regressions, the potential problem of multicollinearity was examined according to a suggestion from Hair *et al.* (1998). In this sense, the model is acceptable without the aforementioned concern.

Multiple regressions were performed to test hypotheses (Table IV). Price benefit ($\beta = 0.463, p = 0.000, t = 9.716$), convenience benefit ($\beta = 0.277, p = 0.000, t = 4.810$), and recreational benefit ($\beta = 0.387, p = 0.000, t = 6.622$) have significant and positive effects on consumers' attitudes toward OGB. The findings support *H1a-H1c*. As to perceived risks, financial risk, psychological risk, product risk, and time risk have different influences on consumers' attitude toward group buying; however, the effects are not significant in this study. Thus, the findings fail to support *H2a-H2d*. Perceived reputation ($\beta = 0.647$, $p = 0.000$, $t = 14.369$), structural assurance ($\beta = 0.421$, $p = 0.000$, $t = 8.523$), and web site trustworthiness ($\beta = 0.255$, $p = 0.000$, $t = 4.784$) have significant and positive effects on consumers' attitudes toward OGB; thus the findings support *H3a-H3c*. Attitude is modeled as a function of perceived benefits, perceived risk, and trust of the initiator. Results indicate that the overall model has a good fit ($F = 31.553$, $p < 0.01$, $R^2 = 0.581$, adjusted $R^2 = 0.576$). All variance inflationary factor (VIF) values of independent variables in this model are less than 3; therefore no significant multicollinearity problem exists. The firmly positive relationship between attitude toward group buying and purchase intention to OGB is also reasonably verified with significance ($\beta = 0.739, p < 0.01, t = 18.573$). The result is consistent with those reported by several previous similar studies, accompanied with highly qualified figures and good fit values ($F = 34.940; p < 0.01; R^2 = 0.546$; adjusted $R^2 = 0.544$). The findings support *H4* (Table V).

	1	2	3	4	5	6	7	8	9	10	11	12	Mean	SD
1. Price benefit	1.000												3.73	0.69
2. Convenience benefit	0.606*	1.000											4.02	0.78
3. Recreational benefit	0.445*	0.497*	1.000										4.38	0.81
4. Financial risk	0.038	0.023	0.104	1.000									4.05	2.08
5. Product risk	0.276*	0.297*	0.227*	0.383*	1.000								3.68	1.02
6. Psychological risk	0.316*	0.228*	0.232*	0.440*	0.600*	1.000							3.66	0.94
7. Time risk	0.030	−0.039	0.189*	0.347*	0.255*	0.365*	1.000						4.12	1.57
8. Perceived reputation	0.366*	0.612*	0.414*	0.401*	0.572*	0.532*	0.056	1.000					3.76	0.78
9. Structural assurance	0.556*	0.279*	0.388*	0.640*	0.212*	0.348*	0.342*	0.205*	1.000				4.10	0.39
10. Web site trustworthiness	0.226*	0.304*	0.512*	0.312*	0.266*	0.488*	0.214*	0.589*	0.443*	1.000			3.92	0.71
11. Attitude	0.559*	0.579*	0.542*	−0.009	0.178*	0.173*	−0.016	0.672*	0.581*	0.647*	1.000		3.27	0.78
12. Purchase intention	0.501*	0.495*	0.479*	−0.032	0.187*	0.187*	0.005	0.652*	0.614*	0.593*	0.739*	1.000	3.93	0.81

Note: Significant at: $^{*}p < 0.01$ level (two-tailed)

Table II.
Correlations of key variables

Variable	Frequency	%
Gender		
Female	430	74.4
Male	148	25.6
Age		
20-25	254	43.9
26-30	248	42.9
31-35	50	8.7
36-40	26	4.5
Marriage		
Single	402	69.6
Married	176	30.4
Monthly income (RMB)		
Less than 2,000	96	16.6
2,001-5,000	250	43.3
5,001-8,000	124	21.5
More than 8,001	108	18.7
Occupation		
Students	188	32.5
Office workers	324	56.1
Others	66	11.4
Successful group buying experience		
Once	12	2.1
Two or three times	300	51.9
Four or five times	208	36.0
More than five times	58	10.0
Average spending in each purchase with group buying (RMB)		
Less than 200	176	30.5
201-500	125	21.6
501-800	106	18.3
More than 801	171	29.6
What did you purchase through group buying (multiple choice)		
Cosmetics and toiletries	334	57.8
Clothes and accessories	291	50.3
Appliances	232	40.1
Upholstery materials and furniture	183	31.7
Food and snacks	78	13.5
Tickets[a]	72	12.5
Others[b]	93	16.1

Notes: $n = 578$; [a]various types of tickets (airplane ticket, concert, movie, theme park, etc.) are included; [b]including sports equipment (25), camping/outdoor equipment (19), CDs (17), milk powder (13), wedding services (six), books (three), flowers (three), automobile driving courses (two), imported red wines (two), gardening plants (two), automobiles (one); it is a multiple choice question with open option, so some answers are given by respondents, and the accumulative percentage is over 100 per cent

Table III.
Personal information of respondents

7. Conclusion and implications

7.1 Discussion

This study focuses on OGB and presents some new and significant findings, and also supports previous research. In particular, it finds that three perceived benefits positively influence consumers' attitudes toward group buying. The first, a price benefit, supports

Table IV.
Factor analysis and reliability analysis

Factor	Item	Factor loadings F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	Eigenvalue	Percentage of variance	Cumulative %	Cronbach's α
1. Price benefit	PB1	0.811												1.868	20.754	20.754	0.687
	PB2	0.752															
	PB3	0.558															
2. Convenience benefit	CB1		0.814											2.272	25.246	46.000	0.803
	CB2		0.784														
	CB3		0.766														
3. Recreational benefit	RB1			0.821										2.139	23.766	69.766	0.794
	RB2			0.897													
	RB3			0.674													
4. Financial risk	FR1				0.837									2.039	20.389	20.389	0.759
	FR2				0.872												
	FR3				0.621												
5. Product risk	PR1					0.844								1.860	18.601	38.990	0.838
	PR2					0.845											
6. Psychological risk	PsyR1						0.799							1.560	15.599	54.589	0.764
	PsyR2						0.809										
7. Time risk	TR1							0.741						2.178	21.782	76.370	0.788
	TR2							0.822									
	TR3							0.857									
8. Perceived reputation	PRep1								0.843					2.876	30.876	78.676	0.832
	PRep2								0.856								
	PRep3								0.774								
9. Structural assurance	SA1									0.754				2.023	20.286	50.883	0.786
	SA2									0.902							
10. Web site trustworthiness	WT1										0.762			1.836	19. 872	47.182	0.814
	WT2										0.828						
	WT3										0.881						
11. Attitude																	
	Att1											0.789		1.602	16.046	81.605	0.773
	Att2											0.837					
12. Purchase intention																	
	PI1												0.886	3.471	34.716	84.241	0.930
	PI2												0.792				
	PI3												0.813				

Table V.
Linear regression for attitude toward group buying

Dependent variable	Independent variable	β	t	p-value	VIF
Attitude	Price benefit	0.463	9.716*	0.000	1.653
	Convenience benefit	0.277	4.810*	0.000	1.760
	Recreational benefit	0.387	6.622*	0.000	1.388
	Financial risk	−0.110	−1.644	0.101	1.339
	Product risk	0.141	1.927	0.055	1.606
	Psychological risk	0.164	2.134	0.034	1.779
	Time risk	−0.074	−1.167	0.244	1.215
	Perceived reputation	0.647	14.369*	0.000	1.388
	Structural assurance	0.421	8.523*	0.000	1.567
	Web site trustworthiness	0.255	4.784*	0.000	1.376

Note: Significant at: $^{*}p < 0.01$

many previous studies, including that of Sheth and Parvatiyar (1995): the more price-sensitive consumers are, the more positive their attitudes toward group buying. This is consistent with an earlier confirmation: that price discounting affects consumers' shopping intentions (Biswas and Blair, 1991). Although the internet and search engines make the price of a product more transparent to the individual consumer, as compared to traditional retail store and online shopping, group buyers may get larger discounts based on much larger order quantities. The second, a convenience benefit, has a significant positive influence on consumers' attitude toward group buying. This reinforces the notion that greater convenience is the driver behind consumer willingness to make online purchases (Li *et al.*, 2006; Tsai *et al.*, 2011). Group buying can provide even greater convenience by reducing the efforts consumers invest in information gathering and bargaining. For consumers who participate in group buying, all they must do is sign up or place an order on the internet, and they receive a discount price after the appointed auction time. Finally, a recreational benefit has a significant positive influence on consumers' attitudes toward group buying. As mentioned earlier, Bellenger and Korgaonkar (1980) and Sinha (2003) both find that some consumers, especially white-collar females, treat shopping as a form of entertainment. In group buying, one transaction can involve many buyers, most of whom are strangers to one another. They gather based on a single, shared goal. The more that consumers perceive the experience to have recreational benefits, the more favorable attitudes they will hold toward group buying.

The new finding of this study is to verify that various perceived risks do not influence consumers' attitudes toward group buying significantly. OGB enables consumers to obtain volume discounts, but they still face some of the risks present in other e-retailing formats. However, even though some studies have concluded that various risks negatively influence consumers' attitudes or intentions toward purchases online (Vijayasarathy and Jones, 2000; Chang *et al.*, 2005), group buying schemes have been in vogue for very many years (Jing and Xie, 2011), and the risks are decreasing with the improvement of transaction security mechanisms and internet technology. In this sense, we conclude that although internet shoppers perceive risks, these risks might not significantly influence their OGB behaviour. The finding is also consistent with some previous related studies (Vijayasarathy and Jones, 2000; Forsythe and Shi, 2003).

Results of this study indicate that perceived reputation, structural assurance, and web site trustworthiness all positively influence consumers' attitudes toward group buying.

This finding enriches understanding of OGB behaviour a possibility because in group buying, a trusted initiator can represent either the company (seller) itself or be an independent third party. Previous studies (Mayer *et al.*, 1995; Cheung and Lee, 2001; Gefen *et al.*, 2003; Bart *et al.*, 2005; Lian and Lin, 2008; Sha, 2011; Tsai *et al.*, 2011) focus on the relationship between e-vendors and internet shoppers without discussion of the group buying concept. The findings above help to provide a more comprehensive understanding of consumers' OGB behaviour.

7.2 Managerial implication

Getting more consumers involved in a group buying process is key to their receiving better discounts. Simultaneously, more companies are addressing how to use the group buying model to create more business opportunities. Sellers can benefit by focusing their attention on consumers' shopping orientation, making full use of lower prices and a convenient service/shopping experience, and offering more added value, so that consumers will conclude that group buying has more advantages than other purchase channels. Although all perceived risks were not significant in this study, perceived financial and time risks were found to be the only two risks to have negative relationships with consumers' attitudes in the context of OGB. In other words, it is quite possible that high perceived financial and time risks may lead consumers to avoid OGB, and this prediction could be more prominent if this study included people who have never participated OGB. Therefore, to attract those new users, management on one hand could reduce perceived time risks by developing more efficient systems (to generate an offer with decent order sizes, discounts, and waiting time) that reduce order cycle times (and reduce negative influence from time risk and psychological risk) to not only reinforce existing online group buyers' confidence but also further attract more new online group buyers. Order cycles will also be shortened when more consumers participate in group buying activity. Moreover, some form of "delivery on time" assurance could be very effective in reducing perceived time risk as well. On the other hand, management could also attract new users by reducing perceived financial risk among consumers. Increasing the security level of the web site database and payment system to prevent hackers or other compromises would be the first step to help lower consumers' perceived financial risk. Group buying initiators/management could also provide consumers a way of payment after they receive the products (i.e. to cash on delivery) which is believed a valid way to greatly reduce the financial uncertainty. Moreover, the contact information should be made obvious so that consumers can easily communicate with the initiators or sellers once they have some financial losses in the group buying process.

According to the data, 7.3 per cent (42 respondents in "other" category) of all respondents reported being full-time housewives. This is also a growing segment as most young Chinese housewives have considerable time to surf the internet. They are price sensitive when shopping, and some of them even control the family spending budget. Marketers could offer more promotions of group buying and offer more related packages to them.

Traditional clubs or associations (e.g. mountain-climbing clubs, car clubs, etc.) where members share the same hobbies and interests may also hold strong potential for group buying. New social media can play a role as well; companies might use web sites such as Facebook or Twitter in generating group buying (Jing and Xie, 2011).

In virtual communities, people share interests and exchange information, and provide an excellent communication platform for businesses. Greater trust and satisfaction enhance the members' relationships. Therefore, companies could try to communicate with the opinion leaders of the virtual communities to increase group buying transactions.

7.3 Limitations and future study

First, this study only investigates the general motives that lead consumers to join group buying, and does not focus on any particular genre of products or services. Consumers' group buying perspectives may differ when purchasing different products. For example, several perceived risks did not significantly affect attitude in this study, but risks could vary considerably across a broad spectrum of products in group buying. With the growing popularity of group buying, future research could focus on several specific product categories, just as researchers did to traditional buying behaviour. Second, these findings cannot be generalized beyond active group buyers. Future studies could also focus on people who do not want to participate in group buying, and explore the reasons behind their reticence. Third, although previous literature suggests there are more female group buyers than male in China, the results of this study present a female-skewed view point based on collected samples. Future studies could try to focus specifically on female or male subjects, respectively. Finally, this study focuses on OGB initiated by institutional organizers. Individually launched group buying, as well as group buying activities without internet involvement (e.g. small scale group buying in personal networks to purchase jewelry, flower-art programs, and even Botox treatments) may merit further investigation because of their special contribution to some niche markets.

Notes

1. In Tsai *et al.* (2011)'s study, the measurement of PU of OGB contains four questions that state: (1) OGB enables me to save money (price benefit); (2) OGB makes it easier for me to obtain goods (convenience benefit); (3) I find OGB useful; and (4) overall, I find OGB to be advantageous.
2. Zhou *et al.* (2011) listed ten risks about OGB: (1) financial risk; (2) performance risk; (3) social risk; (4) psychological risk; (5) physical risk; (6) privacy risk; (7) time/convenience loss; (8) source risk; (9) service risk; and (10) delivery risk.
3. Act-of-God (force majeure) is a legal term for events outside of human control, such as sudden floods, war, typhoon, fire, strikes, storm, earthquake, or other natural disasters that cannot be foreseen, for which no one can be held responsible. All parties of the transaction have no obligation/right to claim loss or compensation.
4. Most of the Chinese group buying web sites are new, without large-scale or a long history. Even so, many of them can still collect a large enough number of participants to make deals due to China's great population base and traditional bargain culture. In this sense, a web site's/perceived size is ruled out for consideration as the major variable in this study.
5. The legal permission is from/based on group buying web sites and participants' mutual agreement.
6. According to the *Statistical Report on Group Buying Behavior in China* issued by The CINIC in August 2011, most of the Chinese group buyers are female (53.9 per cent).

Also, 72.5 per cent of 40 major leading Chinese group buying web sites registered themselves as "female" in "Sina Weibo", the largest mini-Blog in China (Sina Weibo is recognized as "the Chinese Twitter") to promote their business (Chinese Electric Commerce Research Center, 2012). In this sense, we could conclude that there are much more female group buyers than male ones in China for sure. However, in this study, the fact that 74.4 per cent of respondents were female is nevertheless unbalanced, so this issue is listed as one of research limitations.

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Appendix

Variable	Item	Question	Reference source
Price benefit	PB1	I often buy discount products	McKinney (2004), Sinha (2003)
	PB2	To get an economic product is worth the extra effort it takes	
	PB3	I will join group buying as long as the price is low	
Convenience benefit	CB1	Join group buying can save the time for bargaining by myself	McKinney (2004), Li *et al.* (2006)
	CB2	Joining group buying can save me the time for comparing products	
	CB3	I think it is convenient if the product which I want to buy has group buying activity	
Recreational benefit	RB1	Joining group buying makes me feel fashionable	Sinha (2003), Järvenpää and Tractinsky (1999)
	RB2	I feel group buying is a novel shopping method	
	RB3	Group buying is an interesting shopping way	
Financial risk	FR1	I am concerned that I cannot get the product after paying	Stone and Grønhaug (1993), Kuhlmeier and Knight (2005), Forsythe *et al.* (2006)
	FR2	I do not trust the security of my credit card when I paid online	
	FR3	I am afraid I will have future financial loss when I submit my personal information (e.g. credit card numbers, bank account numbers)	
Product risk	PR1	I am concerned whether products will be good as well as they advertised	Forsythe and Shi (2003), Tan (2000), Forsythe *et al.* (2006)
	PR2	I am concerned that the product cannot reach my expectation	
Psychological risk	PsyR1	The thought of group buying may make me feel psychological uncomfortable	Stone and Grønhaug (1993), Forsythe and Shi (2003)
	PsyR2	I am worried about that my personal information will not be kept private	
Time risk	TR1	I am afraid of getting the product for too long time	Stone and Grønhaug (1993), Forsythe and Shi (2003), Forsythe *et al.* (2006)
	TR2	Group buying is not as fast as other shopping ways	
	TR3	The process of group buying is too fussy	
Perceived reputation	PRep1	I know the initiator is honest	Gefen *et al.* (2003), Järvenpää and Tractinsky (1999), Bart *et al.* (2005)
	PRep2	I know the initiator cares about customers	
	PRep3	I know the initiator is predictable, not opportunistic	
Structural assurance	SA1	The offerings of legal privacy statements from group buying initiator make me feel trusted	Gefen *et al.* (2003), Zhou and Tian (2010)
	SA2	Initiator's protective measures for payment make me feel secured	
Web site trustworthiness	WT1	This site of initiator appeals to be more trustworthy than other sites I have visited	Järvenpää and Tractinsky (1999), Gefen *et al.* (2003), Bart *et al.* (2005)
	WT2	The site of initiator represents a company or organization that will deliver on promises made	
	WT3	My overall believability of the information on this site of initiator is	

(*continued*)

Table AI.
The confirmed items/questions with reference sources

Table AI.

Variable	Item	Question	Reference source
Attitude	Att1	Joining group buying is a good idea	Gefen *et al.* (2003), Järvenpää and Tractinsky (1999)
	Att2	I like the idea of using internet for group buying	
Purchase intention	PI1	I will consider joining group buying	Järvenpää and Tractinsky (1999), Liu and Brock (2011)
	PI2	I am glad to join group buying	
	PI3	I will recommend my friends to join group buying	

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