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UNDERSTANDING ONLINE GROUP PURCHASE DECISION MAKING: A MEANS-END CHAIN APPROACH

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Abstract

Given the enormous growth and significant impacts of group buying on Internet business marketplaces, this study aims to understand consumer decision making process in an online group buying context from a Means-end Chain (MEC) theory perspective. The laddering interview technique was used to interview 58 online group buying users and to capture their reasons behind the online shopping behaviour, with grounded theory used to determine categories. The study found 35 factors in relation to consumer decision making process, which were classified into attributes, consequences, and values. The hierarchical relationships among 35 factors were developed, in which consumer decision making paths were identified. This study has the potential to make significant contributions to both IS research and e-business regarding consumer online group buying decision making process by identifying not only the major consequences/ benefits consumers emphasising, but also the concrete attributes which directly correspond with these benefits as well as the goals/values consumers aim to achieve.

Keywords: Online group buying, Means-end chain (MEC), Laddering, Hierarchical value map (HVM)

1 INTRODUCTION

Online group buying, one of many e-commerce models, is becoming a popular consumption pattern widely accepted across the world, especially in China. According to a report published by CNNIC (2013), the number of users of online group buying reached 141 million in 2013 in China, an increase of 68.9% compared to 2012, and accounting for 22.8% of the netizens while online shoppers accounted 48.9% of the netizens. The revenue of group buying in China reached 23.9 billion Yuan (equivalent to 3.9 billion US dollars) in the first half of 2013, which increased 63% compared to first half of 2012.

With the increasing number of consumers participating in online group buying activities, more and more group buying websites emerged in recent years. This resulted in intense market competition, leading to low profitability and survival rates for online group buying businesses despite increased sales. For instance, reports indicate that 4670 Chinese owned small group buying sites went out of business by June, 2013 (China Electronic Commerce centre 2013), accounting for 75% of the total number of group buying websites. Thus, it is extremely difficult for group buying websites to survive in the e-market place, since they compete not only with each other, but also with traditional brick-and-mortar stores and other online shops. E-commerce research has long supported the view that to ensure the success of online business, it is important for e-vendors to understand their target customers, especially factors affecting customer decision making (Delafruez et al. 2009). Only by understanding what factors can influence consumers' purchase decisions, group buying website can then provide appropriate strategies to attract and retain consumers.

In addition, prior research has emphasised consumer behaviour as a cognitive process which involves mental and emotional process, in addition to physical actions (Zanoli & Naspetti 2002). This indicates that consumer decision making behaviour is influenced by a chain of related factors (Olson & Reynolds 2001; Wagner 2007). This hierarchical view of consumer decision making process has been highly recognised in consumer's online shopping behaviour, with the aid of Means-End Chain (MEC) theory. Generally speaking, MEC is focused on obtaining insight into consumer buying behaviour, by viewing consumers as goal-oriented decision makers, who choose to perform behaviours that seem most likely to lead to desired goals (Grunert & Grunert 1995; Reynolds & Olson 2001). Specifically, MEC focuses on the cognitive linkages between the relative concrete attributes of products/services (the "means"), the more abstract consequences these attributes provide people, and the highly abstract personal values or goals (the "ends") these consequences help reinforce (Reynolds & Olson 2001). Given the increasing number of online group websites and available products that consumers can select, we extend the notion of the MEC theory to online group buying behaviour, in which consumers' decision making criteria are based on the benefits (positive consequences) the online group buying websites can provide, unique attributes of each website are ultimately a means to achieving important values in the domain of goal-oriented online group buying behaviour. The framework of such an inter-relationship could provide a guide for understanding why consumers select (or reject) a specific online group buying website and help direct actions taken to attract more consumers to shop online. Accordingly, this study aims to examine the following research questions.

- (1) What are the key factors (benefits) consumers' consider when making purchase from group buying websites?
- (2) What are the websites/product attributes that associated with those benefits? and
- (3) Why are those benefits important to consumers?

The rest of this paper is organised as follows. First, online group buying phenomenon is introduced, followed by the discussion about MEC theory adopted in this study. Then the research methodology is described, data analysis results and discussion are presented subsequently. Finally, the implications from both theoretical and practical perspectives are discussed.

2 LITERATURE REVIEW

2.1 Online Group Buying

Online group buying is an online retailing concept that seeks to offer cheap services or products through leveraging the buying power of individual consumer as a group. As a U.S. based online coupon seller, Groupon.com is a pioneer in doing online group buying business. Launched on November 2008, Groupon currently offers deals in 44 countries, while similar businesses witness a rapid growth across the world, particularly in China (Liu et al. 2013). Specifically, group buying websites seek to offer low-price local service or products to consumers after a minimal amount of shoppers signing up for the offer has been reached during a short period of selling time. Urged by its rapid growth and vast potentials, online group buying is regarded to be one of the most innovative online business models ((CNNIC) 2013).

Despite the rapid growth, research about online group buying is somewhat sparse due to its relative newness. Earlier studies focus on describing the phenomenon of group buying online (Chen et al. 2007; Li et al. 2009), comparing consumer characteristics in online and offline group buying (Tan & Tan 2010), and mined customer knowledge for exploring online group buying behaviour (Liao et al. 2011). Most studies are descriptive in nature. Recognising the success of online group buying and the high enthusiasm of customers in this novel e-business model, a few studies attempted to explore factors that influence consumers to participate in online group buying. For instance, Chen and Wu (2010) found that price sensitivity, conformity, and perceived risk can significantly impact consumers' intention to join in online group buying. Erdogmus and Cicek's (2011) study indicated that price opportunity, exploration of new activities and places, seeking joy and variety, trial of non-routine activities, socialising, and need satisfaction were the primary motives for participating in online group buying. Tsai et al. (2011) provided a research model to examine the impact of technology acceptance factors and social factors on online group buying. Using surveys from 346 buyers in Taiwan, they found that perceived usefulness, a sense of virtual community, and trust in the virtual community were determinants of online group buying intention. Liu et al. (2013) identified that website attributes such as product availability, visual appeal, and website ease of use were important factors that affected personality traits which finally led to impulse purchase in online group buying. Though these studies provide preliminary indications for factors that influence consumer decision to adopt this innovative buying approach, little research has been conducted to offer a systematic analysis of factors which influence consumers' purchasing decisions from group buying websites. Moreover, the mechanism underlying their decision making process also deserves consideration which can provide actionable information for group buying websites.

2.2 Theory of Means-End Chain

The means-end chain (MEC) theory was developed by Gutman (1982) to understand how product or service attributes facilitate consumer' achievement of values or goals. Specifically, this theory focuses on understanding the consumer decision-making process by connecting product attributes, consequences (benefits) of using a product, and personal goals or values achieved by use of that product (Reynolds et al. 1995). The common MEC framework consists of three elements, namely, attributes, consequences/benefits, and values (Olson & Reynolds 2001). Attributes represent the observable or perceived characteristics of a product or service. Consequences reflect the perceived benefits associated with specific attributes. Satisfactions of consequences lead to realization of personal values. By uncovering the ways attributes, consequences, and values are linked in consumption decision-making, MEC can nevertheless shed light into how the decision making process comes to being (Olson & Reynolds 2001).

The MEC model is based on two fundamental assumptions about consumer behaviour. Firstly, people do not buy products for the products' sake, but for the benefits that their consumption can provide. Thus, MEC emphasize the benefits or outcomes of a decision – as experienced by the consumers. It

explicitly assumes that these desirable experienced benefits are the most salient considerations in decision making. Secondly, consumers' goal-directed purchase behaviours are voluntary and conscious. These behaviours are guided by the search of positive consequences or the avoidance of the negative outcomes (Olson & Reynolds 2001). Overall, the MEC approach assumes that consumers decide which product/service to buy based on the anticipated consequences (experienced outcomes, need satisfaction, goal or value achievement) associated with each considered alternatives. Thus, the most important factors in decision making are the anticipated consequences/benefits associated with various choice alternatives.

The MEC theory has been successfully adopted in Information Systems to explore various problems. For instance, Jung and Kang (2010) applied MEC analysis to investigate user goals in social virtual worlds and developed a hierarchical system of interrelated goals. Kuisma et al. (2007) identified the reasons for consumer resistance to Internet banking based on MEC analysis. Chiu (2005) used the MEC approach to eliciting user requirements for a system design and resulted in a better understanding of the user's perceptual orientation toward the web-based document management system under design. Guo et al. (2012) adopted the MEC theory to explain the interrelated and hierarchically organized motivations for students' technology use behaviour in learning. Pai and Arnott (2013) applied MEC theory to understand the fundamental reasons behind social networking sites (SNSs) adoption behaviour. As a powerful method to provide meaningful results and valuable insights, MEC theory will be adopted in this study to understand consumer decision making process in online group buying context. However, those higher level personal relevant consequence/benefits in consumer decision making process cannot be obtained by straightforwardly asking the consumer, since in most cases he/she is not able to directly reveal his higher level personal reasons for behaviour (Zanoli & Naspetti 2002). The laddering interview technique associated with MEC is a useful tool to successfully achieve this purpose which will be discussed in greater depth in methodology section.

3 RESEARCH METHODOLOGY

3.1 Sampling and Data Collection

The research subjects are people who have online group buying experience in China. To recruit the subjects for interviews, announcements were posted on the Public Discussion Forum of a few famous group buying websites (www.dianping.com, www.bbs.tuan800.com). In total, 58 consumers were interviewed. 52 valid interviews out of 58 were considered for analysis. Gender distribution was random but the total sample has resulted in 13 males and 39 females. Majority of people spent 1 to 5 hours surfing the group buying websites each week. 48.08% of people used online group buying for 1 to 2 years, 32.69% of them used it for 2 to 3 years. 36.54% of them spent 301 to 500 RMB (50 to 83 US dollar) on group buying each month. More than half of them (69.23%) purchased more than 10 times using online group buying in the most recent one year. With 38.46% of respondents aged between 25 and 30, and 30.77% of them aged between 19 and 24, we found that the respondents were relatively young. In terms of education, 1.92% of the sample had high school level education, 28.85% had some college, 61.54% of them had bachelor degree, and 7.64% had postgraduate or above degree. Finally, 32.69% of respondents' monthly income was between 3001 and 5000 RMB (500 to 830 US dollar), 30.77% of them had salary between 5001 and 8000 RMB (830 to 1300 US dollar).

3.2 Data Collection Technique--Laddering Technique

Laddering was originally introduced by Hinkle (1965) in a clinical psychology. The laddering technique attempts to model individual's belief structure in a simple and systematic way (Veludo-de-Oliveria et al. 2006). It is a popular interview technique used to identify Means-end Chain. Specifically, it is designed to develop an understanding of how consumers translate product attributes into meaningful associations with respect to themselves (Gutman 1982). In other words, its purpose is to reveal people's decision making process for choosing a particular product, or service (Russell et al.

2004). The laddering technique allows researchers to dig below consumer's surface knowledge about the perceived product or service attributes and consequences/benefits to their underlying beliefs and values that motivate their behavior (Peter et al. 2005). The interview consists of two steps: eliciting relevant attributes and getting the ladders (Reynolds et al. 1988).

Step 1: Eliciting relevant attributes

The laddering interview started with eliciting attributes, which can be used as the bases for eliciting the respondents' self-relevant consequences and values (Zanoli & Naspetti 2002). There are five specific methods for eliciting attributes for the purpose of means-end chain analysis: choose from a list of attributes; free elicitation; direct elicitation; triadic sorting; and ranking. In this study, ranking was utilised after testing different elicitation methods in a pilot study. During the interview process, respondents were asked to provide a list of group buying websites they have used, and to rank the websites according to their preferences. After the ranking, they were asked "why do you prefer the first website to the second website?", and "why do you prefer the second website to the third one?" Reasons for ranking of all the websites were obtained using this question. After this stage, a list of attributes was obtained from participants.

Step 2: Getting the ladders

In this step, the consequences, values, and linkages among attributes, consequence, and values were established by using probing questions such as "why is this important to you?" First, the list of attributes pre-established in the elicitation stage was presented and the respondent was asked "why is that important to you?" The laddering process continued with repeated probes using this question, "why is that important to you?" after each response until the value/goal level was reached or respondent was not able to provide an answer rather directly. All the attributes obtained in the first stage were used for probing. The development of such a procedure allows the consumer to naturally reveal the higher level reasons behind decision making process (Zanoli & Naspetti 2002).

4 RESULTS AND DISCUSSION

4.1 Means-end Chain Analysis Results

The data collected from interview was analysed using three steps as suggested by Reynolds and Gutman (1988).

1) content analysis (coding)

The list of factors which influence consumer online group purchase decisions can be obtained through content analysis.

2) construction of an implication matrix,

3) construction of a Hierarchical Value Map (HVM)

By looking at HVM, consumer decision making paths can be identified. The HVM not only provides information about the key benefits consumer emphasize when making purchase decisions, but also the corresponding attributes which are associated with those benefits. In addition, how benefits are related to consumers' personal values/goals can be explained through the paths in HVM. These paths indicate consumer decision making process which started from attributes and end in values/goals.

4.1.1 Content Analysis

Content analysis serves to reduce the raw data in order to facilitate interpretation. It consists of two steps: data reduction (coding) and categorization. Data reduction involves the consolidation of constructs with the same underlying ideas. In this step, sentences in each interview were coded and combined under constructs. Then the constructs that were expressions of the same underlying idea were combined. Relationships among constructs were also coded. As a result, 112 unique constructs were produced. After data reduction, categorization process was conducted to categorize the constructs

into different dimensions. Based on the literature, the constructs were finally categorized into different dimensions. The categorization of constructs was discussed by two researchers until agreement was reached for all the dimensions. In total, 35 dimensions were obtained. The dimensions were further classified into attributes (12), consequences (17), and values/goals (6). Table 1 displays the 35 dimensions.

Elements	N*	Percentage	Elements	N	Percentage
Attributes			Consequences		
D1: Marketing communication	21	40.38%	D13: Socialise	10	19.23%
D2: Product price	45	86.54%	D14: Information access	36	69.23%
D3: Relative advantage	30	57.69%	D15: Ease of navigation	21	40.38%
D4: Product assortment	45	86.54%	D16: Cost saving	38	73.08%
D5: System quality	27	51.92%	D17: Arousal	4	7.69%
D6: Service quality	35	67.31%	D18: Perceived value	31	59.62%
D7: Company profile	32	61.54%	D19: Convenience	40	76.92%
D8: Information quality	41	78.85%	D20: Choice optimization	30	57.69%
D9: Network externality	33	64.46%	D21: Trust	41	78.85%
D10: Buyer experience	9	17.31%	D22: Perceived usefulness	18	34.62%
D11: Supplier profile	14	26.92%	D23: Perceived risk	38	73.08%
D12: Product quality	11	21.15%	D24: Sensory stimulation	19	36.54%
Values/Goals			D25: Decision quality	29	55.77%
D30: Browse intention	28	53.85%	D26: Online impulsivity	18	34.62%
D31: Self-actualization	27	51.92%	D27: Freedom	10	19.23%
D32: Purchase intention	33	63.46%	D28: Satisfaction	42	80.77%
D33: Improve life quality	13	25%	D29: Entertainment	10	19.23%
D34: Loyalty	33	63.46%			
D35: Social affiliation	7	13.46%			

*N: Number of participants mentioned this dimension

Table 1: Dimensions identified in content analysis

4.1.2 Construction of Implication Matrix

The implication matrix is used to summarise the connections between each attribute, consequence, and value. It displays the number of times each element leads to other elements. Two kinds of linkages exist between elements. A direct linkage between two elements exists when one element is mentioned directly after another element in the same ladder, without any intermediary elements. An indirect linkage between two elements exists when the two elements are mentioned in the same ladder, but separated by one or more intermediary element. Both direct and indirect linkages were shown in implication matrix, with direct linkages appeared on the left of the decimal and indirect linkages on the right. In this study, subjects listed a total of 829 direct linkages and 373 indirect linkages. The implication matrix is presented in Appendix.

4.1.3 Development of Hierarchical Value Map

Once the implication matrix has been completed, the data was converted to construct HVM. HVM visually illustrates the relationships between concepts by showing the links between the attributes, consequences, and values/goals. To construct a HVM from the implication matrix, one begins by considering adjacent relations, that is, if $A \rightarrow B$ and $B \rightarrow C$ and $C \rightarrow D$, then a chain $A-B-C-D$ is formed (Reynolds & Gutman 1988). A HVM is gradually built up by connecting all the chains by considering the linkages in the implication matrix. Usually, the HVM does not display all the elements and linkages in the implication matrix. The decision regarding what elements and links should be represented in a HVM is usually the result of a trade-off between retaining enough information from the interviews and producing a simple, clear and sufficient HVM (Costa et al. 2004). Thus, only the relations value above the cut-off level will be considered. Following Reynolds and Gutman's (1988) suggestion, a cut-off of 5 was selected.

Figure 1 depicts the hierarchical map obtained by drawing all linkages that were equal or exceed the cutoff level of 5. The relative strength of association between elements is represented by the width of the connecting lines. The frequency of the linkages is also marked in the connecting lines, with direct linkages appeared on the left of the decimal and indirect linkages on the right. For instance, the number of 21.03 on the line connecting corporate profile and trust means that 21 respondents mentioned that corporate profile can directly lead to trust and 3 respondents mentioned that it can lead to trust indirectly through other elements. Three elements (entertainment, sensory stimulation, and arousal) are not presented in the map due to the low number of connections with other elements in the map. It is important to note that an HVM does not depict "redundant" links which would occur when two elements are linked both directly and indirectly (Reynolds & Gutman 1988; Wagner 2007). In such a case, only the indirect link is depicted for sake of simplicity.

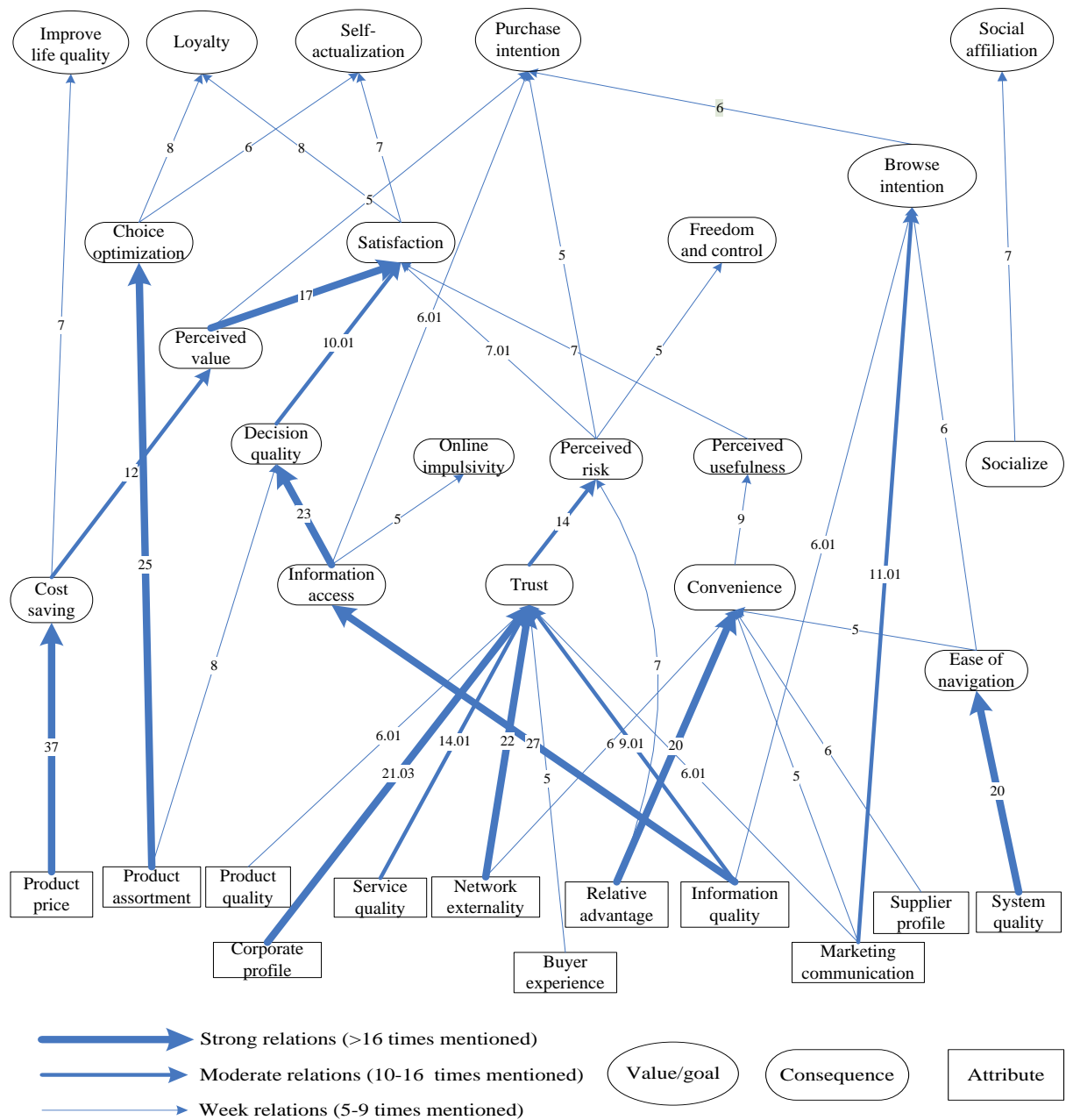


Figure 1: HVM of factors affecting consumer decision making in purchasing from group buying websites

4.2 Key Benefits and Consumer Decision Making Paths

As indicated in the HVM, cost saving, choice optimisation, information access, trust, and convenience are the five basic benefits consumer emphasise when making purchase decisions from group buying websites. These five factors, on one hand, can lead to higher level benefits or values/goals such as satisfaction, loyalty and self-actualisation, on the other hand, can be achieved through corresponding attributes. To understand how these five benefits can lead to higher level personal relevant benefits and goals/values, and what are the corresponding attributes that associated with each of the five benefits, paths that go through these five benefits were drawn out and discussed in the following sections.

4.2.1 Cost Saving

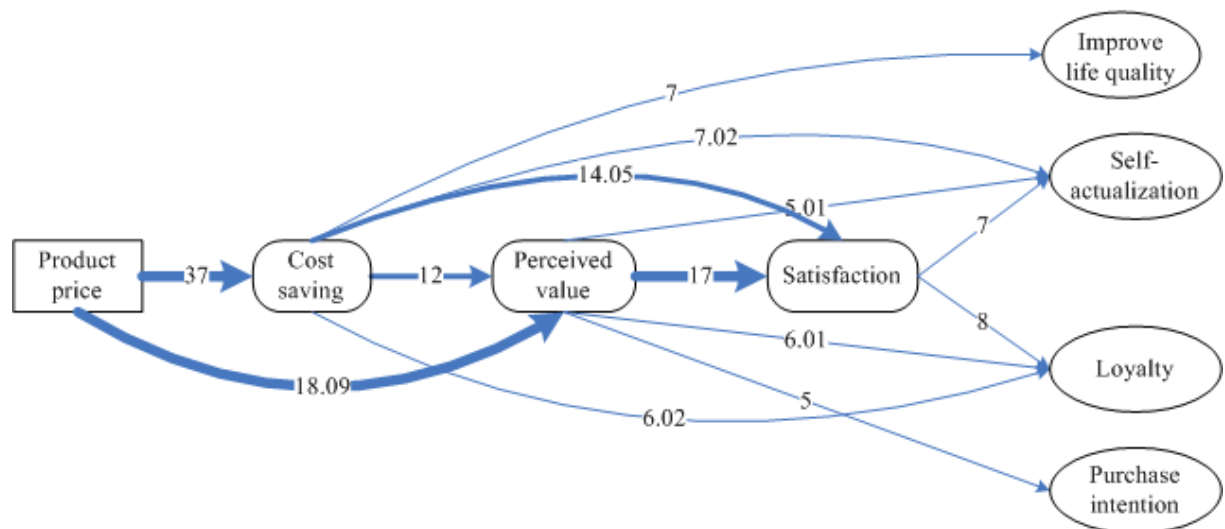


Figure 2: Chains going through benefit of cost saving

Starting from the left side of the HVM, cost saving is the first basic benefit consumers consider when making group buying decisions. As shown in Table 1, 38 respondents mentioned cost saving, which accounted 73.08% of the total number of respondents. In addition, the product price - cost saving linkage is the strongest in the HVM with 37 respondents mentioned this relationship. Thus, cost saving is supported to be an important benefit for consumers to consider in the decision making process. In online shopping literature, there is a limited literature that has found cost saving as a factor influencing consumers' online shopping behaviour, (Khalifa & Limayem 2003; To et al. 2007). Results in this study illustrate that costing saving is emphasized more by consumers in online group buying context, which deserve attention for group buying websites to promote their sales. To provide a clear understanding of what attributes can lead to cost saving and how cost saving can help consumers achieve higher level benefits and personal relevant values/goals, all elements that are connected with cost saving directly and indirectly are shown in Figure 2.

From figure 2, it is evident that product price is the only attribute which contributes to cost saving. Thus, in order to attract consumers, group buying websites need to make efforts to set an optimal price for deals on the website. From this figure, it is also possible to understand why consumers emphasize the benefit of cost saving. As can be seen, cost saving can directly lead to consumer perception of perceived value of the products/services, which further lead to satisfaction and finally achieve self-actualization related values such as accomplishment and fulfilment or result in loyalty behaviour. A few respondents also indicated that cost saving can help to improve their life quality. In addition, some respondents would have purchase intentions if they perceive the value of products/services triggered by low price or cost saving.

4.2.2 Choice Optimization

Choice optimization is described as the desire to search for the right product to fit one's demands (Westbrook & Black 1985). 30 respondents mentioned this benefit, which accounted 57.69% of the overall respondents. Product assortment is the only attribute which can lead to choice optimization. With 25 respondents mentioned this linkage. As a relatively strong relationship in the HVM, it indicates that the group buying websites need to pay attention to the variety of products/brands/suppliers to make consumer choose the right product when purchasing from group buying websites. Choice optimization can further result in consumers' loyalty behaviour and realize consumers' self-actualization value. Westbrook (1985) proposed that choice optimization is an important factor affecting consumer purchasing behaviour in shopping context and the self-fulfilment or self-actualization, and need for achievement can be derived from finding exactly the right product. However, few studies have tested whether choice optimization can affect consumer buying behaviour in online context. Results in this study confirmed their proposition in the online group buying context.

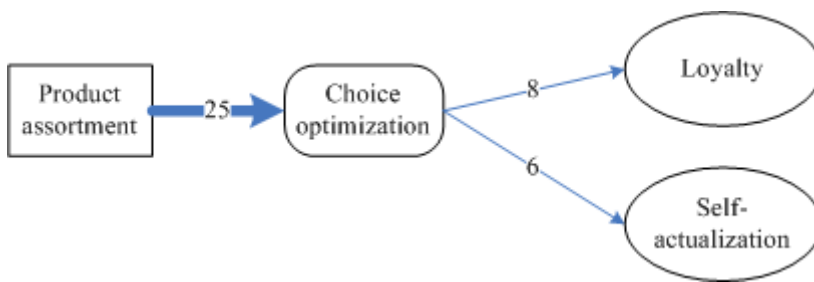


Figure 3: Chains going through benefit of choice optimization

4.2.3 Information Access

Information access means consumers' ability to obtain information from group buying websites such as the comments, pictures, price, supplier information, product information etc. Information quality is the only attribute which can contribute to information access. It refers to a consumer's general perceptions of the information content on the websites, covering currency, detail, accuracy, reliability, relevant, and completeness aspects of information in this study. Results indicated that group buying websites should consider the information quality of their websites providing accessibility to required information by their customers. In this study, the information accessibility can help consumers make better decisions and finally result in loyal behaviour, impulse buying tendency, purchasing intention, or self-actualization value. It is one of the most popular factors that affect consumer purchase behaviour in online shopping literature (Joines et al. 2003; To et al. 2007) as the Internet can provide the most efficient means for consumers to get information. However, none of prior studies have explored what attributes can contribute to information access and what are the higher level hidden benefits and goals/values consumers can achieve through information access. This research filled this gap.

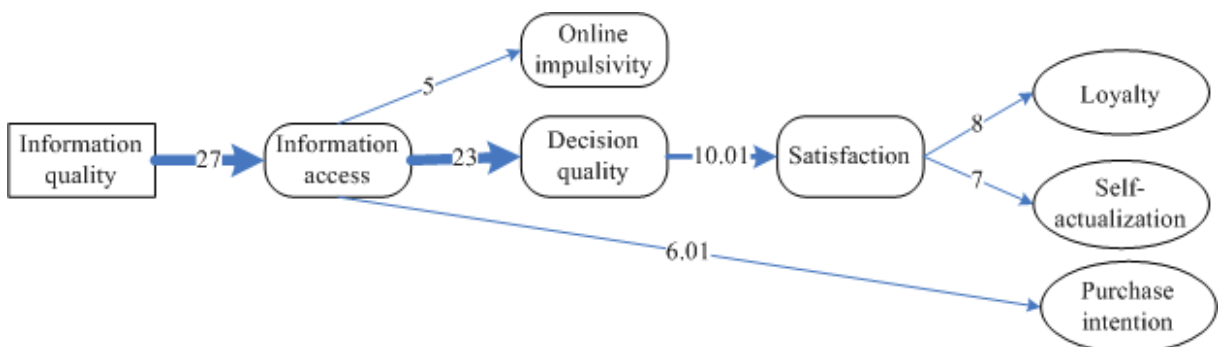


Figure 4: Chains going through benefit of information access

4.2.4 Trust

Trust measures whether the owner of the group buying website is reliable, competent, and benevolent (Kim et al. 2008). It was mentioned by 41 respondents, accounted 78.85% of the overall number of respondents. As shown in Figure 5, trust can lead to purchase intention and loyalty both directly and indirectly through perceived risk and satisfaction. However, compared to indirect linkages, the direct linkages were stronger. In addition, trust can help achieve self-actualization and freedom perception, though with weak relationships.

A list of attributes can help to achieve trust: service quality, information quality, product quality, marketing communication, network externality, buyer experience, and corporate profile. Among these attributes, network externality is the most important with 22 respondents mentioned the linkage between network externality and trust. Network externality is composed of three parts: the impacts of friends, mass consumers, and complementary applications. The results indicated that many consumers are impacted by the effects bringing by other consumers, as more consumers participate in online group buying, they would be more likely to trust online group buying websites. Though network externality has been found to have impacts on perceived usefulness, enjoyment, and continued use intention in multiple contexts such as mobile communication, online game, social networking sites in prior research (Lin & Lu 2011; Yang & Mai 2010), little research has explored the impacts of network externality on trust. This study illustrated that network externality can help achieve consumer trust in online group buying context. Further research can also be conducted to explore whether network externality works in other contexts such as online shopping.

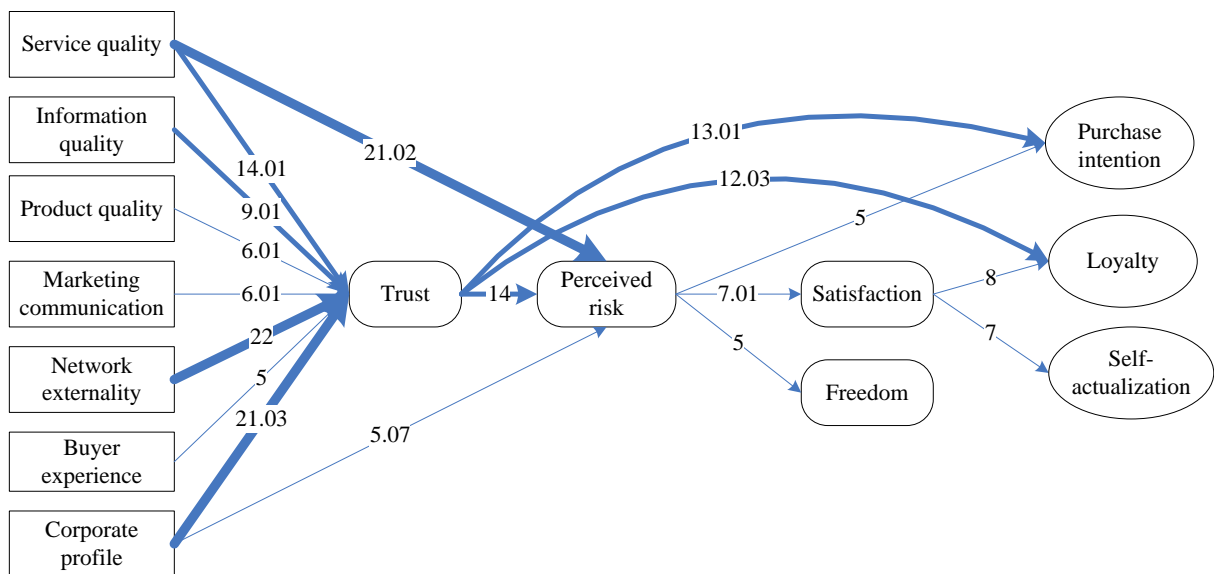


Figure 5: Chains going through benefits of trust

Following network externality, corporate profile was ranked the second in terms of frequency of associations with trust, with 21 direct and 3 indirect relations. In addition, corporate profile has been found to influence perceived risk, with 5 direct and 7 indirect relations to perceived risk. Corporate profile is the description of the firm's history, resources, structure, performance, and reputation (Shareef et al. 2008). The results indicated that consumers consider the background of the company as a signal to develop trust towards group buying website, and finally achieve higher level benefits and goals.

Service quality refers to the extent to which websites facilitate efficient and effective buying process (Parasuraman et al. 2005). With 21 direct relations and 2 indirect relations with perceived risk, service quality plays a more important role in minimizing the perceived risk directly rather than through trust.

As most research in e-commerce context has confirmed the service quality - trust relationship (Chang & Chen 2008; Kassim & Abdullah 2008; Kim et al. 2004), results in this study indicated that future research needs to test how service quality can impact perceived risk both directly and indirectly through trust.

Information quality of group buying website is also an important factor which can contribute to trust, though not as important as network externality, company profile, and service quality. It indicated that consumers consider the information quality of website as important criteria when they evaluate the trustworthiness of the group buying websites. This result is also in line with previous research which confirmed that information quality is an importance antecedent of trust in e-commerce (Kim et al. 2008; Kim et al. 2004).

Other factors such as product quality, marketing communication, buyer experience can also contribute to trust and finally lead to loyalty, purchase intention, and self-actualization. However, the relationships are weak as fewer respondents mentioned these linkages, indicating that these factors are less important compared to other four factors (network externality, company profile, service quality, and information quality,).

4.2.5 Convenience

Convenience refers to consumers' time and effort perceptions related to buying or using services (Seiders et al. 2000). Marketing communication, network externality, relative advantage, supplier profile, and system quality can all lead to consumers' perceptions of convenience. However, only relative advantage has strong relationship with convenience, with 20 respondents mentioned this relationship. Relative advantage is the degree to which the online group buying provides an advantage over other shopping patterns, for instance, time restriction for transaction, flexibility in choosing seats online for movie ticket etc. These relative advantage features give convenience for consumers and further lead to perceived usefulness of online group buying, for instance, making consumer easy to plan their life and finish shopping effectively. These benefits would result in satisfaction and finally lead to loyalty behaviour and self-actualization value. Convenience and perceived usefulness have been confirmed as important factors affecting consumer purchase decisions in a large number of online shopping studies (Schroder & Zaharia 2008; To et al. 2007). Results in this study confirmed its significant role in consumer decision making process in online group buying context. In addition, this study found that the unique feature of online group buying is an important attribute that can be used to develop convenience perception, which has not been touched in the literature.

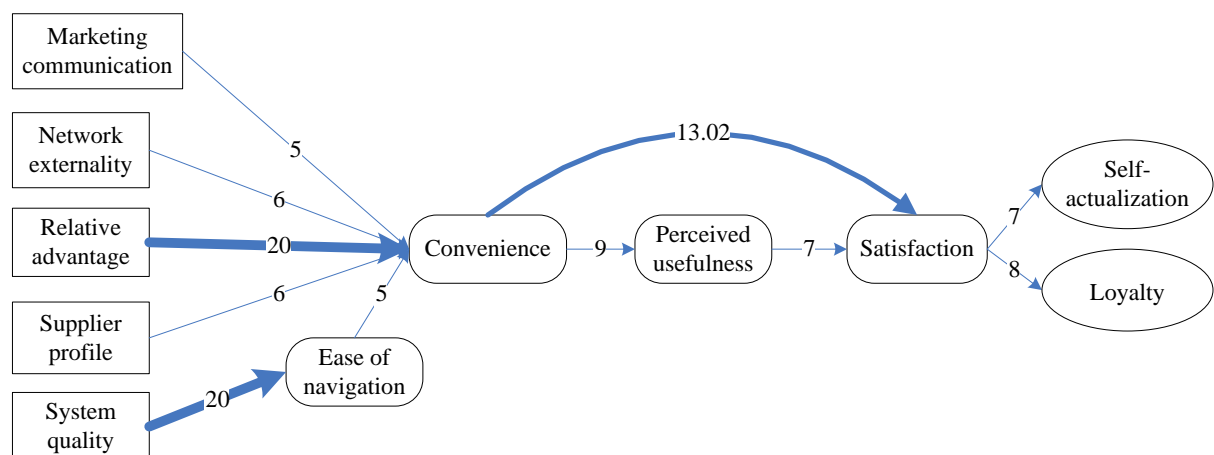


Figure 6: Chains going through benefit of convenience

5 IMPLICATIONS AND CONCLUSIONS

This study has implications for information systems, in particular e-commerce research and practice.

Theoretically, this study has two implications. Firstly, although researchers begin to focus on the phenomenon of online group buying, to date, studies on the online group buying have provided a limited view of this phenomenon. Most previous studies focused on description of characteristics of online group buying. Though a few studies have quantitatively examined factors that influenced consumer online group buying decisions, the factors identified in these studies are limited, and are adopted from literature in online shopping or traditional brick-and-mortar shopping contexts. This study is the first (to the knowledge of the authors) using a qualitative method to comprehensively explore factors that influence consumer decision making in online group buying context. As online group phenomenon is still a new business model in e-commerce, results in this study can provide valuable suggestions for future research exploring consumer behaviour in online group buying context.

Secondly, by using MEC analysis, the factors have been classified into attributes, benefits, and goals/values levels. The linkages among these factors were also developed through a single systematic framework. The hierarchical structure model identified in this study indicated that these factors are related, and influence one another in a specific causal structure. In addition, unlike other qualitative methods, unique advantages of MEC theory make it possible to estimate the relative importance of linkages in the hierarchical structure model. The outcomes provided an improved understanding of consumer decision making process, specifically, what are relevant benefits consumer seek when making decisions, how these benefits are related to personal values/goals, and which attributes and to what extent the attributes can deliver those benefits. The hierarchical structure model obtained in this study can be tested using surveys in future research.

Practically, as many online group buying sites emerged in recent years, it is highly competitive for them to attract consumers and suppliers. This study can provide implications for online group buying websites. Using MEC as the theoretical framework, this study can not only provide in-depth insights into the major benefits consumers seek in making purchasing decision on the group buying website, but also the attributes which directly correspond with these benefits. These lower level attributes can be employed by group buying websites to fulfil consumers hidden needs (higher level needs). For instance, given that cost saving is the most important benefit consumers emphasize, to achieve this, group buying websites can make strategies to decrease the product price or have promotions, which can help consumer save cost and finally achieve value and goals. As trust plays an important role in the consumers' decision making process, to improve consumers' trust, group buying websites can provide high level service quality, improve their reputation to make consumers have positive perceptions of company profile, and provide more complementary applications or encourage word of mouth among friends to have network externality. Though this study utilizes a qualitative method, the results have been quantified and relative importance of each relationship identified can help marketers effectively allocate their resources to maximize the profits.

There are several limitations in this research. Firstly, the sample in this study only contains Chinese online group buyers. Whereas the applied sampling approach and given sample size are appropriate for this kind of qualitative research, the generalisability of the study can be improved by subsequent empirical research using a larger sample size in other countries. This may enable both researchers and practitioners to obtain a more representative view of online group buying behaviour. Secondly, the data analysis is being criticised for being subjective in nature. There are not many concrete rules on determining how to clearly distinct among attributes, consequences, and values. Thus, the content analysis of the laddering data remains complex and subjective. Thirdly, the evaluation of the ability of a HVM to accurately express consumer decision making process remains fairly subjective. Little is known about how software type, cut-off point selection, and content analysis procedure affect the content validity of a HVM (Grunert & Grunert 1995). In addition, there is no general accepted consistency index value that separates a valid from an inappropriate HVM. Future research is needed to explore a more structural data analysis method to differentiate attributes, consequences, and values, and a more systematic method is needed to analyse the HVM.

Appendix: Implication Matrix

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28	D29	D30	D31	D32	D33	D34	D35		
D1							1		1					3					5	0.01	6.01	0.03	0.01		0.01	0.01											
D2									1					0.01		37		18.09				0.02		0.04				0.25	2.01		3	0.10	2.07	0.07	2.11		
D3														1		1		0.01	20			1.02	7		0.01	1	3	0.13			0.02						
D4							1							4					3	25	1.03	1.01	1	4	8	4	1	2.04	0.01	1	0.10	1.01	0.01	1.09			
D5															20	0.01	4		1.04		1	0.04	0.01			0.01		1.03	0.01	1.06		1.02	0.02	1.01			
D6					2		1					1		1		0.01		1	4.01		14.01		21.02			0.02	1.05	3.06		1.01	0.02	0.01	0.01	2.06			
D7						2		4	4		2	4		0.01		0.01					21.03	4	5.07		0.01			1.02		0.01			0.09		2.04		
D8				1										27	1	0.01			4.01	2.02	9.01	1.02	2.04	0.01	2.13	1.02		1.05	0.02	6.01	0.03	2.05		2.01			
D9				1		1	1	1		1		2							6	0.01	22		1.05	1.01	0.01	1.01	0.01	0.02	2			3.09		0.06			
D10																						5						1								3.02	
D11								1										1	6	1				2.03							0.02	1.01					
D12																						6.01		2.01		1		1.01			0.01	0.03			2.02		
D13																																					7
D14				1									2			1.02			2.01	3	3	1	2	2	23	5		0.07	2		0.03	6.01	2.01		0.01		
D15																0.01			5			3.02				1		0.04	1	6		1.01	0.01	1			
D16																		12							4		1		14.05	0.01		7.02	2.01	7	6.02		
D17																															3		1				
D18																1					1											5.01	5		6.01		
D19																		1		2		9	1			1	2	13.02			3.01		3.02	0.02			
D20																						2										6				8	
D21																								14			0.01	0.01	2.02			13.01			12.03		
D22																																2	1	2	1		
D23																						1.01				1.01	5	7.01		1	2	5	1	3.01			
D24																													2			5					
D25																2										1		10.01				2					
D26																2																2		1	2		
D27																										1		2									
D28																																	7	2		8	
D29																																					
D30														1						0.01				2	0.01	1.01			2		6						
D31																																				2	
D32																																				2	
D33																																					
D34																																					
D35																																					

Note: the entries in the matrix indicate the number of times each dimension (the rows) directly or indirectly elicited each of the other dimensions (the columns)

References

- China Network Information Centre(CNNIC), C. N. I. C. 2013. The 33rd china internet development statistics.
- Centre, C. E. C. R. (2013). China online group buying market statistics in first half of 2013.
- Chang, H. H. and Chen, S. W. (2008). The impact of customer interface quality, satisfaction and switching costs on e-loyalty: Internet experience as a moderator. *Computers in Human Behavior*, 24 (6), 2-18.
- Chen, J., Chen, X. and Song, X. (2007). Comparison of the group-buying auction and the fixed pricing mechanism. *Decision Support Systems*, 43 (2), 445-459.
- Chen, W.-Y. and Wu, P.-H. 2010. Factors affecting consumers' motivation in online group buyers. *2010 Sixth International Conference on Intelligent Information Hiding and Multimedia Signal Processing*.
- Chiu, C.-M. (2005). Applying means-end chain theory to eliciting system requirements and understanding users perceptual orientations. *Information & Management*, 42 (3), 455-468.
- Costa, A. I. A., Dekker, M. and Jongen, W. M. F. (2004). An overview of means-end theory: Potential application in consumer-oriented food product design. *Trends in Food Science & Technology*, 15 (7-8), 403-415.
- Delafrooz, N., Pain, H. L. and Haron, S. A. (2009). Factors affecting attitude toward online shopping. *African Journal of Business Management*, 3 (5), 200-209.
- Erdogmus, I. E. and Cicek, M. (2011). Online group buying: What is there for the consumers? *Procedia Social and Behavioral Sciences*, 24 308-316.
- Grunert, K. G. and Grunert, S. C. (1995). Measuring subjective meaning structures by the laddering method: Theoretical considerations and methodological problems. *International Journal of Research in Marketing*, 12 (3), 209-225.
- Guo, Z., Li, Y. and Stevens, K. J. (2012). Analyzing students' technology use motivations: An interpretive modeling approach. *Communications of the Association for Information Systems*, 30 (1).
- Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing*, 46 (2), 60-72.
- Joines, J. L., Scherer, C. W. and Scheufele, D. A. (2003). Exploring motivations for consumer web use and their implications for e-commerce. *Journal of Consumer Marketing*, 20 (2), 90-108.
- Jung, Y. and Kang, H. (2010). User goals in social virtual worlds: A means-end chain approach. *Computers in Human Behavior*, 26 (2), 218-225.
- Kassim, N. M. and Abdullah, N. A. (2008). Customer loyalty in e-commerce settings: An empirical study. *Electronic Markets*, 18 (3), 275-290.
- Khalifa, M. and Limayem, M. (2003). Drivers of internet shopping. *Communications of Theacm*, 46 (12), 233-239.
- Kim, D., J, Ferrin, D., L. and Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, 44 (2), 544-564.
- Kim, H.-W., Xu, Y. and Koh, J. (2004). A comparison of online trust building factors between potential customers and repeat customers. *Journal of the Association for Information Systems*, 5 (10), 392-421.
- Kuisma, T., Laukkanen, T. and Mika, H. (2007). Mapping the reasons for resistance to internet banking: A means-end approach. *International Journal of Information Management*, 27 (2), 75-85.
- Li, H., Zhao, P., Wang, Y. and Wang, G. A qualitative research of tuangou: Modes, characteristics and roles of the new e-business model. In *International Symposium on Information Engineering and Electronic Commerce*. 750-753.

- Liao, S.-h., Chu, P.-h., Chen, Y.-j. and Chang, C.-C. (2011). Mining customer knowledge for exploring online group buying behavior. *Expert Systems with Applications*, 39 (3), 3708-3716.
- Lin, K.-Y. and Lu, H.-P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27 1152-1161.
- Liu, Y., Li, H. and Hu, f. (2013). Websites attributes in urging online impulse purchase: An empirical investigation on consumer perceptions. *Decision Support Systems*, 55 829-837.
- Olson, J. C. and Reynolds, T. J. (2001). Understanding consumer decision making: The means-end approach to marketing and advertising strategy. Lawrence Erlbaum Associates. New Jersey.
- Pai, P. and Arnott, D. C. (2013). User adoption of social networking sites: Eliciting uses and gratifications through a means-end approach. *Computers in Human Behavior*, 29 (3), 1039-1053.
- Parasuraman, A., Zeithaml, V. A. and Malholtra, A. (2005). E-s-qual: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7 (3), 213-235.
- Reynolds, T. J., Gengler, C. E. and Howard, D. J. (1995). A means-end analysis of brand persuasion through advertising. *International Journal of Research in Marketing*, 12 (3), 257-266.
- Reynolds, T. J. and Gutman, J. (1988). Laddering theory, method, analysis, and interpretation. *Journal of Advertising Research*, 28 (1), 18-31.
- Reynolds, T. J. and Olson, J. C. (2001). The means-end approach to understanding consumer decision making. In: REYNOLDS, T. J. & OLSON, J. C. (eds.) *Understanding consumer decision making: The means-end approach to marketing and advertising strategy*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Schroder, H. and Zaharia, S. (2008). Linking multi-channel customer behavior with shopping motives: An epirical investigation of a german retailer. *Journal of Retailing Consumer Services*, 15 (6), 452-468.
- Seiders, K., Berry, L. L. and Gresham, L. (2000). Attention retailers: How convenient is your convenience strategy? *Sloan Management Review*, 49 (3), 79-90.
- Shareef, M. A., Kumar, U. and Kumar, V. (2008). Role of different electronic-commerce quality factors on purchase decision: A developing country perspective. *Journal of Electronic Commerce Research*, 9 (2), 92-113.
- Tan, W.-K. and Tan, Y.-J. 2010. Online or offline group buying. *2010 Seventh International Conference on Fuzzy Systems and Knowledge Discovery*.
- To, P.-L., Liao, C. and Lin, T.-H. (2007). Shopping motivations on internet: A study based on utilitarian and hedonic value. *Technovation*, 27 (12), 774-787.
- Tsai, M.-T., Cheng, N.-C. and Chen, K.-S. (2011). Understanding online group buying intention: The roles of sense of virtual community and technology acceptance factors. *Total Quality Management & Business Excellence*, 20 (10), 1091-1104.
- Wagner, T. (2007). Shopping motivation revised: A means-end chain analytical perspective. *International Journal of Retail & Distribution*, 35 (7), 569-582.
- Westbrook, R. A. and Black, W. C. (1985). A motivation-based shopper typology. *Journal of Retail* 61 (1), 78-103.
- Yang, J. and Mai, E. (2010). Experiential goods with network externalities effects: An empirical study of online rating system. *Journal of Business Research*, 63 1050-1057.
- Zanoli, R. and Naspetti, S. (2002). Consumer motivations in the purchase of organic food - a means-end approach. *British Food Journal*, 104 (8), 643-653.