
Social reference group influence on mobile phone purchasing behaviour: a cross-nation comparative study

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Abstract: This paper describes a comparative study investigating the influence of different reference group on consumer purchasing behaviour between the mobile phone users of USA and China. This study reveals that among the three reference group influence examined, only the utilitarian influence has resulted in statistically significant difference between China and US mobile phone buyers, and another two reference group influences, informational and value-expressive, have relative insignificant impacts. Based on the results of this study, managerial insights and practical implications for marketing strategies in the mobile phone market are recommended accordingly.

Keywords: consumer purchasing behaviour; social reference group influence; mobile communications; marketing strategy.

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1 Introduction

Mobile communication has been viewed as one of the hottest industries for the future of world economy. As such, mobile phone industry has been one of those bright spots in Asian economy during the last decade, and just in China, the mobile phone market has been increasing at a rate of 80% since 1990 and became a market of 130 million users in 2001 – exceeding US for the first time (Robertson, 2001), and over 335 millions by 2004 – about 25% of the total Chinese population (CMII, 2005). Along the increase of mobile communication and mobile phone usage worldwide, the competition for global mobile phone market has been extremely intensified. For instance, in current China's mobile phone market, there are more than 600 mobile phone models on sale by over 110 mobile phone manufacturers (Motsay, 2004), including both domestic and international mobile phone producers competing with a variety of different marketing strategies and competitive advantages. For example, some companies are competing by promoting its high tech features while others competing through so-called 'star power' with celebrity endorsement to their products. Not unusual, there are also companies competing with unique aesthetical features such as: attractive appearance, dialling speed, colour, shape and the possibility of customisation. Those marketing strategies have been widely used in many different industries based on the related market analysis about consumers purchasing behaviour, especially, the influence of these so-called social influence groups.

Historically, a mobile phone has been pricy with the market dominated by business users (Kendall, 1997). It has been considered a status symbol for the rich and famous during the early 1990s all over the world. In China, people still could remember a common scenario that those mobile phone owners talked anywhere and everywhere with such a proud to send a message that the ownership of a mobile phone representing rich, power, prestige, and success. In contrast, American mobile phone consumers used to believe that when they sign up with a mobile phone service, a free phone was included. At that time, it was the ownership of a mobile phone, not its technology or its appearance, that distinguished the owner from others. It was predicted in 1994 that the demand for

mobile communication would make a continuing growth of US mobile phone market and reaching a penetration of 50% in 2005 (Scouras, 1995). The real market growth was in fact better than the expected with 74% of Americans were viewed as mobile phone users in 2003 (Palenchar, 2004). In comparison, the time that mobile phone being viewed as an expensive luxury only affordable to the power and rich in China has long gone. Today, not only in all urban areas, also in smaller towns and remote rural farms, the mobile phone has become a common, affordable, and convenient communication device. It has been contributed to a simple marketing strategy: for users in China's income-constrained agricultural sector, the promotion of 'frugal' handset phone that eliminate features such as displays and reduce service fees by offering prepaid pay-per-call phone cards (Robertson, 2001). Currently, one can easily find many advanced new emerging generations of mobile phones, smaller, lighter, better designed, multi-functional, and with a much affordable price.

The purchase decision of products such as mobile phone, which are used publicly, is strongly influenced by the consumer's reference groups (Bearden and Etzel, 1982; Bourne, 1957). Mobile phone manufacturers have been applying such interpersonal influence in their advertising and marketing practice. For example, an advertisement focused on personalisation through colour faceplates was used when Siemens launched its series of GSM phones in USA during 2002, while a mobile phone looking like a compact case complete with a mirror inside was promoted by Samsung (Luna, 2002).

This paper describes a comparative study investigating the influence of different reference groups on consumer purchasing behaviour between the mobile phone users of USA and China. The motivation for this study is to investigate the strength of those social reference group influences on the mobile phone buyers in both USA and China, and reveal any significant differences between the mobile phone buyers of two nations in terms of the actual influences of those social reference groups on the mobile phone purchase behaviour – due to the different cultural and societal traditions and norms. For example, the stereotyped collectivism of Chinese culture emphasising conformity to group norms, social acceptance and hierarchical interpersonal relationships are expected to indicate higher reference group influence about the same product compared to those consumers in USA (Zhou and Hui, 2003). We expect that the result of this research will provide meaningful managerial guidelines for mobile phone manufacturers of both countries in their marketing practices. In addition, this paper is also an attempt to test certain theoretical implication and provide an empirical evidence for the future study about the reference group influence research literature.

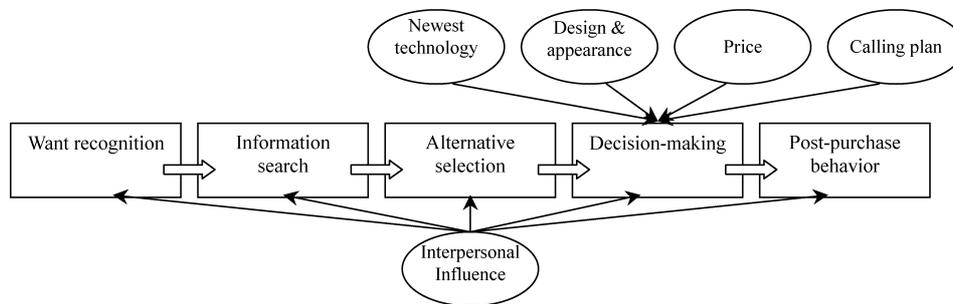
2 Literature review

As the increased demand of mobile communication, there has been an increasing research stream in the current literature addressing various issues related to mobile communication (*m-communication*) and mobile commerce (*m-commerce*) (Barnes and Corbitt, 2003; Siau and Shen, 2003; Scornavacca and Barnes, 2004; Laukkanen and Lauronen, 2005). Some recent examples include: an overview of the mobile communication industry for its global trend in the 21st Century by addressing all related hot topics such as mobile market, mobile applications and m-commerce (Kumar, 2004). Specifically, Kumar (2004) explored the competitive landscape of the mobile phone market based on competing protocols or standards, airtime carriers and handset providers, and compared

the key characteristics of US mobile market with both European and Asian markets. Massoud and Gupta (2003) investigate the consumer perception and attitude toward mobile communication through a consumer survey. Arguing that successful solutions to e-commerce may not simply translate into successful solutions to m-commerce, this paper is an attempt to identify key factors for successful m-commerce solutions. Following the trend, Wen and Mahatanankoon (2004) describe a study on m-commerce operation modes and applications for both consumers and industries; while Chan and Chen (2003) focus on the usage pattern of web-based support system for mobile phone purchasing and reveal five important factors for mobile phone purchasing decision: the quality of signal transmission, product shape and colour choice, the size and weight, price along with associated service fees, and ease of use. They conclude that a good web-based support system can enhance the quality of phone service to customers and thus become an attractive lure in mobile phone purchasing selection.

Regarding the consumer purchasing behaviour of a mobile phone, in addition to traditional marketing claim that a consumer's purchasing motivation will be influenced directly by the phone and service related factors including: new technology, phone design and appearance, the relative price, and the associated calling plan, consumer behaviour research on consumers' social and interpersonal environment has indicated that the mobile phone consumer's final purchasing decision will also be influenced by reference groups (such as friends, family, work associates and etc.) on whether to buy a specific product and which brand or model to choose among competing alternatives (Moschis, 1976), as shown in Figure 1.

Figure 1 Mobile phone purchaser decision-making process and major influence factors



Social and interpersonal influence research can be traced back to Hyman (1942), who first elaborated the term 'reference group' when he asked respondents with which individuals or groups they compare themselves. The term has been redefined thereafter with additional research and now with a broader definition – the reference group refers to the groups used by an individual to direct one's purchasing behaviour in a particular situation. More specifically, the reference groups in this research consist of not only the groups that an individual has a frequent contact with (such as family members, work associates, friends, classmates and etc.) but also include the groups that an individual does not have a membership in or a direct contact with, such as certain expected groups or people in a certain social level (Hawkins et al., 1998). Bourne (1957) studied group influence in marketing and behavioural research, and concluded the concept of the reference group has a pervasive influence on marketing studies. The research on reference groups has been used thereafter as a basis for a variety of applications in

several different fields. For example, it has been argued that the reference group concept should be applied in behaviour studies of specific groups, such as: farmers, scientists, alcoholics, mentally ill patients, and of course, different segments of consumers (Hyman and Singer, 1968). In some follow-up research, the reference group theory was applied to more social groups including: physicians (Coleman et al., 1966), auto owners (Grubb and Stern, 1971), cosmetic users (Chao and Schor, 1998), religious change and alcohol use (Beeghley et al., 1990), and students and housewives (Park and Lessig, 1977; Bearden and Etzel, 1982). In the business practice, marketers have applied these concepts widely by portraying products being consumed in social situations and inviting prominent/attractive spokespersons to endorse products.

There are many published reports in the current literature on the consumer behaviour from the perspective of reference group influence with the broad defined concept. Witt and Bruce (1972) suggested seven influence determinants including perceived risk, expertise of the referent, and the individual's need for social approval. One study found that consumers used both reflective and comparative appraisal to choose their products (Morchis, 1976). Another revealed that consumers would not only apply direct and verbal interaction to obtain the evaluations from reference group, but also observe reference group members' behaviour to make a decision and suggested that the individual's choice of different brands might also be influenced by one's reference groups (Bearden and Etzel, 1982). Comparing young students with generally more conservative housewives, Park and Lessig (1977) concluded that American students were more likely to be influenced by reference groups than general American housewives were when making their purchasing decisions and that the advertisements and promotions utilising reference group had more direct and significant influence over consumers' final purchases. In their research, Park and Lessig (1977) developed the first set of scales for measuring reference group influence functions, concluding that reference group influence varied across products. Bearden et al. (1989) believed that consumer susceptibility to interpersonal influence is a general trait that varies across individuals and developed a scale to measure it. Becker (1991) found that demand by a typical consumer is positively related to quantities demanded by other consumers by exploring restaurant pricing. Wooten and Reed (2004) suggested that consumers with high susceptibility to normative influence tend to use protective self-presentation to avoid undesirable disapproval.

Researchers also believe that interdependent cultures such as those popular in China, Japan, Korea and most East Asian countries emphasise conformity to group norms and social acceptance (Zhou and Hui, 2003; Gürhan-Canli and Maheswaran, 2000; Han and Schmitt, 1997; Triandis, 1995; Triandis and Gelfand, 1998). Wong and Ahuvia (1998) also noted that there is a strong tendency for East Asians to consume luxuries conspicuously to show their pertaining to social status and wealth. In summary, the existing literature has demonstrated that reference groups have significant influence on consumer's purchasing behaviours. While a consumer may consider whether to follow the group consciously, in most cases, one will agree with the group subconsciously. An individual who is more susceptible to interpersonal influence will try to satisfy reference groups' expectation by complying with groups' norms – here refer to those compliance expectations for every group member within a particular social background, or acting in an expected role displayed by the group.

Previous research has identified three major types of reference group influences: informational influence, utilitarian influence and value-expressive influence (Park and Lessig, 1977; Bearden and Etzel, 1982), which are briefly described below.

Informational influence

The informational influence is based on the desire to make informed decisions and optimise the choice. Kelman (1961) suggested that an individual would accept an influence that improves one's knowledge and ability to cope with the environment. The informational influence only functions when the individual regards the behaviour and value of reference group members as potentially useful information and takes them into consideration. Especially when a consumer lacks the knowledge of a certain product and the experience of purchasing this item, one may perceive the information and recommendation from his/her reference group as credible and thus accept them with certain confidence. Marketing practical applications can be seen from the use of expert power and internalisation in advertising with the ads that feature doctors impersonating as spokespersons for over-the-counter medicines.

Utilitarian influence

This influence can be explained by the so-called 'compliance process' in which an individual is willing to satisfy a certain group's expectation in order to obtain the praise or to avoid the punishment from the group (Kelman, 1961). A best demonstration for the utilitarian influence may be the famous Asch Experiment in which participants were found to willingly conform to the group answers, even changing their original right answers (Rock, 1990). From a marketing research view of point, that is, by suggesting in the advertisements that one could obtain social approval and acceptance by just using a certain commodity, or in an opposite direction, by suggesting that one might be reject by a certain group by not using a specific product, will have an influence on certain groups of consumers. A good example is an advertisement for personal care products in which consumers are punished by co-workers or friends for not using anti-dandruff shampoo, deodorant or mouthwash in fact take advantage of the reference group's utilitarian influence.

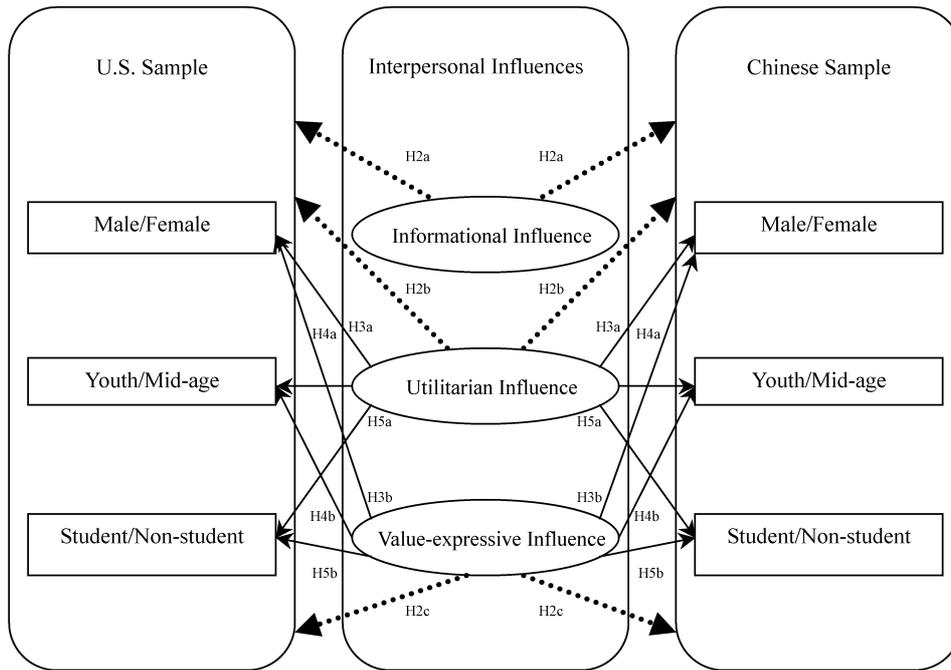
Value-expressive influence

This influence may be best explained by the 'identification process' in which people are willing to better express themselves to the society by making themselves similar to the group that they want to belong to (Kelman, 1961). Under this influence, one may actively follow the groups' beliefs and rules while neglecting the praises or punishments, and decide to completely accept and internalise the value of that reference group. One good example of using this influence in marketing practice was used by soft drink giant Pepsi, the company has aired its Young Generation brand image extensively so that its targeted consumers had accepted the value of this specific group. Electronic products giant Sony has a famous celebrity playing a successful manager's role in its Sony mobile phone advertisement and implying that people who use the same mobile phone will have the same characteristics with that expected group.

This paper is an attempt to empirically investigate the influence of different reference groups on consumer purchasing behaviour between the mobile phone users of USA and China. More specifically, hypotheses about – if there are significant differences in those social reference groups' influences between US and Chinese mobile phone consumers due to the cultural and societal differences between the two nations – will be statistically tested in this research. The data for this study are collected through a web-based survey with about 200 participants in each nation. Three control variables used in the study are:

gender (male vs. female), age (youth vs. non-youth), and income level (measured by student vs. non-student). As such, three major reference group influences identified and widely used in previous research: informational, utilitarian, and value-expressive influences are tested under the three control factors: gender, age, and income level with two sample consumers: US consumers vs. Chinese consumers. In summary, the following 11 hypotheses are empirically tested in this study, as shown in Figure 2.

Figure 2 Sample segments and hypotheses



3 Research design and data collection

As shown in Figure 2, the following five research hypotheses are constructed and tested in this research to compare the influence of reference groups on the mobile phone consumers in USA and China.

As suggested by Hawkins et al. (1998) that the products/services that are highly visible and relatively luxurious (e.g., televisions, automobiles, insurance, expensive furniture) are in the category for which consumers purchasing decisions are more likely to be influenced by those social references groups. The mobile phone certainly belongs to this product/service category. As such, the first two hypotheses to be tested in this study are:

Hypothesis-1(a): Reference groups have a significant influence on US mobile phone consumers in their purchasing behavior.

Hypothesis-1(b): Reference groups have a significant influence on Chinese mobile phone consumers in their purchasing behavior.

Since traditional Chinese culture rests on kinship and for many years before recent economic reform, people rely on word-of-mouth communication to obtain credible product information with the belief that only 'bad' product or service need advertising (Gong et al., 2004). Compared with US consumers who are heavily exposed to advertisements, it should be assumed that among three reference group influences, the informational influence should have a stronger influence on Chinese consumers than their US counterparts (*Hypothesis-2(a)*). Collectivism has long been recognised as a distinguishable trait of Chinese culture. The high tendency to conform to social norms makes Chinese people consume similar brands or products that their peers consuming. Tracing back to old days of 1990s, everyone was wearing the same military greens no matter the timing and season. In comparison, individualism is a popular trait among US consumers, so most American consumers focus more on their personal needs and less concerning about the opinion of others. It can be further supported by a recent research (Mourali et al., 2005) that reveals that individualistic orientation had a significant negative effect on both the utilitarian and the value-expressive dimensions of consumer susceptibility to interpersonal influence (*Hypothesis-2(b)* and *Hypothesis-2(c)*).

Hypothesis-2(a): Reference groups have a lower informational influence on US mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-2(b): Reference groups have a lower utilitarian influence on US mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-2(c): Reference groups have a lower value-expressive influence on US mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Furthermore, as the American culture is traditionally more individualistic-oriented than Chinese culture, it should be consequential to assume that US consumer segments in terms of gender, age and income level will also less likely to be influenced by both the utilitarian and value-expressive influences than their Chinese respected counterpart. Thus, we hypothesise the following three Hypotheses (3)–(5):

Hypothesis-3(a1): Reference groups have a lower utilitarian influence on US male mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-3(a2): Reference groups have a lower utilitarian influence on US female mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-3(b1): Reference groups have a lower value-expressive influence on US male mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-3(b2): Reference groups have a lower value-expressive influence on US female mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-4 (a1): Reference groups have a lower utilitarian influence on US young mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-4(a2): Reference groups have a lower utilitarian influence on US mid-age mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-4(b1): Reference groups have a lower value-expressive influence on US young mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-4(b2): Reference groups have a lower value-expressive influence on US mid-age mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-5 (a1): Reference groups have a lower utilitarian influence on US student mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-5(a2): Reference groups have a lower utilitarian influence on US non-student mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-5 (b1): Reference groups have a lower value-expressive influence on US student mobile phone consumers in their purchasing behavior than their Chinese counterparts.

Hypothesis-5(b1): Reference groups have a lower value-expressive influence on US non-student mobile phone consumers in their purchasing behavior than their Chinese counterparts.

The primary data for this study were collected through a web-based questionnaire survey. The requests for participation in this research were sent to several universities, companies and e-mail list servers. The e-mail list servers were selected based on proposed research objective – to target a large population of active mobile phone users. The participation in this research is therefore totally random and volunteer based so as to ensure the relative randomness of sample selection. The survey was conducted both in China and USA in September 2005 with about 200 validated responses from each nation. Participants were invited by e-mail to join the survey and asked to fill in and submit the survey online. The survey was worded in English across the two countries. (Note: the selected survey participants in China are college students and professionals both have no difficulty to understand the survey).

The survey has three sections. Section 1 is a scale of interpersonal influence with 14 statements carefully worded based on the reference group influence scale developed by Park and Lessig (1977). As shown in Table 1, those statements are designed to address the majority of key questions and decisions in a mobile phone purchasing process so that the information collected can reflect and capture the three interpersonal influences – informational, utilitarian, and value-expressive influence. Following the early research,

“these statements were designed to be general enough to encompass different forms of behavior underlying a given type of reference group influence, yet specific enough to reflect only one motivational function.”
(Park and Lessig, 1977)

Table 1 Reference group influence manifestation statements

<i>Reference group influence manifestation statements</i>	<i>Order</i>
<i>Informational influence</i>	
I would search information about various cell phones' brands and models from an association of professionals or independent group of experts	1
I seek information from those who work in the cell phone industry	5
I will collect cell phone information from those friends, neighbours, relatives, or work associates (such as how Brand A cell phone's performance compares to Brand B)	7
If I see the cell phones' brand or model which are used by cell phone R&D people or cell phone retailers, I may change my mind	10
My choice of cell phone is influenced by other consumers' word of mouth or some evaluation reports from an independent testing agency. (e.g., online cell phone reviews)	13
<i>Utilitarian influence</i>	
My friends' evaluation and preference will influence my choice	3
Other people's recommendation may influence my final decision	6
The preferences of family members can influence my choice of cell phones	9
To satisfy the expectations of classmates or fellow work associates, my decision to purchase a cell phone is influenced by their preferences	11
<i>Value-expressive influence</i>	
I tend to choose those brands or models that will enhance my image in others' eye	2
I feel that those who purchase or use the cell phone of a particular brand or model possess the characteristics which I would like to have	4
I feel that it would be nice to act like the type of person which advertisements show using the cell phone of a particular brand or model	8
I think that the people who purchase the cell phone of particular brand or model (e.g., palmOne Treo 650, Motorola A1000) are sometimes admired or respected by others	12
Using the cell phone of a particular brand or model helps me show others who I am, or who I would like to be (such as a successful businessman, a female professional, etc.)	14

The 14-item reference group influence scale was recorded on a widely used 5-point scale (ranged from 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, to 1 = Strongly Disagree). The scores were computed by assigning the highest score obtained on any one of the items representing a given dimension of the three interpersonal influences. These scores were then averaged across the participants for each component of

interpersonal influence. Section 2 of the survey is about demographic profile – designed to collect the information including three control variables in this study: the participant's gender, age, income level, ethnicity, and profession. Finally, Section 3 is designed to examine the relative importance of those social reference group influences to other important purchasing decision factors by asking the participants – how would they rank the interpersonal influence (worded as peer influence in the questionnaire) comparing to other important factors such as: technology, design and appearance, price and calling plan in their mobile phone purchasing decision.

Based on the information collected from the survey, the hypotheses constructed early in this section are tested with statistical analysis and comparative studies to examine the consumer's susceptibility to interpersonal influence during their mobile phone purchasing decision. The results are presented along with managerial implications in the next section.

4 Results and analysis

The comparative statistical results for the three main reference group influences on US and Chinese mobile phone consumers are presented in Table 2. As shown in Table 2, both the US and Chinese participants in this research validate the influences of all those three reference groups. That is, *Hypothesis-1(a)* and *1(b)* is strongly supported by the statistical evidence from the results of this research. While not surprising for the positive testing outcome here, it may be still noteworthy to see the strength of those influences. For instance, over the maximum value of 5.0, a mean higher than 3.0 will be recognised as a strong influence, in this regard, for informational influence, US and Chinese mobile phone consumers scored exceptional high 4.44 and 4.26 respectively; for utilitarian influence, participants had a 4.23 (USA) and 3.85 (China) respectively, and for value-expressive influence, while relatively lower, US and Chinese mobile phone consumers still have reached 3.13 and 4.18 respectively, and all have *p* values less than 0.001. Looking back, the significance of reference group influence of US sample is consistent with the reference group influence revealed by Lessig and Park (1978). In addition, the results of Table 2 reveal that among the three influences, the value-expressive influence may have the weakest and most diversified impact on US mobile phone consumers, with the lowest mean (of the three) of 3.13 (over 5.00), larger *p* value of 0.025 and the highest standard deviation of 1.04 respectively. This result is consistent with early research that focused on need for uniqueness in US consumer decision-making process (Simonson and Nowlis, 2005).

Table 2 Reference group influences on mobile phone consumers: US and Chinese samples

	No. of items	Range	US sample (n = 232)			Chinese sample (n = 174)		
			Reference group mean score	SD	<i>p</i>	Reference group mean score	SD	<i>p</i>
Informational influence	5	1–5	4.44	0.56	0.00	4.26	0.83	0.00
Utilitarian influence	4	1–5	4.23	0.63	0.00	3.85	0.82	0.00
Value-expressive influence	5	1–5	3.13	1.04	0.025	4.18	0.72	0.00

As stated in *Hypothesis-2*, one key research question of this research is to investigate the differences between US and Chinese mobile phone buyers in terms of those three main reference group influences, due to possible culture and tradition difference between USA and China – which could provide some useful insights to those multi-national mobile phone marketers.

As shown in Table 3, for the two survey participant groups: US sample vs. Chinese sample, there do exist significant differences in terms of their responses to the three reference group influences. However, contradict to the presumption that the Chinese mobile phone consumers should be influenced more by those references groups in their purchasing decisions, the results of this research show that Chinese sample has a relatively lower mean influence score than their US counterpart does – a (4.26 vs. 4.44) in informational influence and a (3.85 vs. 4.23) in utilitarian influence. That is, both (a) and (b) of *Hypothesis-2* are not supported by the statistic evidences from participants in this research. In comparison, for the value-expressive influence, the Chinese sample scored a much higher mean score (4.18–3.13), making the *Hypothesis-2(c)* being the only one strongly supported by the statistic evidences of this research. There are many possible explanations for the above results, such as the fact that the presumption used in setting up *Hypothesis-2* is clearly out-of-date and simply ignoring the fast changes among the new generation of young consumers, especially mobile phone consumers – who are more likely already influenced by the recent Western culture ‘invasion’ in China through the introduction of Western style Hollywood movies and popular pop music. A possible lesson can be learned here for those multi-national mobile phone manufactures is that they certainly can and should use those marketing strategies which have been proven effective in the Western nations, and apply them in China to target Chinese mobile phone consumers. More empirical research is clearly in need to investigate further for more insightful explanations.

Table 3 Reference group influence comparison between US and Chinese samples

	No. of items	Range	US Sample	Chinese sample	p (US vs. Chinese)
			(n = 232)	(n = 174)	
			Reference group mean score	Reference group mean score	
Informational influence	5	1–5	4.44	4.26	0.053 (US > Chinese)
Utilitarian influence	4	1–5	4.23	3.85	0.001 (US > Chinese)
Value-expressive influence	5	1–5	3.13	4.18	0.000 (US < Chinese)

Another research objective of this research is to empirically test the consumers’ susceptibility to the three major reference group influences among different segments of mobile phone consumers in both nations in terms of gender, age, and occupation, as stated in *Hypotheses 3–5*. Considering there should be more than two levels with each of those control variables in the future study, a series of ANOVA tests were conducted to see if there are significant statistic differences among different segments of consumers participated in this research between US and China samples. Those results, as shown in Table 4, have revealed that unlike some presumptions made before the study, most of

those difference are rather quite statistically insignificant, and only a limited few showing the impact of supposed cultural and traditional differences between two nations.

Table 4 ANOVA test results on gender, age and occupation difference

<i>Analysis of variance for utilitarian influences</i>						
<i>Source</i>	<i>DF</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>	
Gender	3	14.939	4.980	8.93	0.000	
<i>Level</i>	<i>N</i>	<i>Mean</i>	<i>StDev</i>	<i>Individual 95% CIs for mean</i>		
Ch.Female	105	3.79	0.88	*	–	–
US.Female	177	4.25	0.64	–	–	*
Ch.Male	69	3.98	0.87	–	*	–
US.Male	55	4.16	0.60	–	–	*

<i>Analysis of variance for value-expressive influences</i>						
<i>Source</i>	<i>DF</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>	
Gender	3	67.747	22.582	24.11	0.000	
<i>Level</i>	<i>N</i>	<i>Mean</i>	<i>StDev</i>	<i>Individual 95% CIs for mean</i>		
Ch.Female	105	3.86	0.87	–	–	*
US.Female	177	3.08	1.04	*	–	–
Ch.Male	69	4.05	0.87	–	–	*
US.Male	55	3.31	1.03	–	*	–

<i>Analysis of variance for utilitarian influences</i>						
<i>Source</i>	<i>DF</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>	
Gender	3	13.661	4.554	8.12	0.000	
<i>Level</i>	<i>N</i>	<i>Mean</i>	<i>StDev</i>	<i>Individual 95% CIs for mean</i>		
Ch.Mid-age	10	3.80	0.79	–	*	–
US.Mid-age	83	4.17	0.66	–	–	*
Ch.Young	164	3.87	0.88	–	*	–
US.Young	149	4.26	0.62	–	–	*

<i>Analysis of variance for value-expressive influences</i>						
<i>Source</i>	<i>DF</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>	
Gender	3	67.747	22.582	24.11	0.000	
<i>Level</i>	<i>N</i>	<i>Mean</i>	<i>StDev</i>	<i>Individual 95% CIs for mean</i>		
Ch.Mid-age	10	4.20	0.91	–	–	*
US.Mid-age	83	2.71	1.12	*	–	–
Ch.Young	164	3.92	0.87	–	–	*
US.Young	149	3.37	0.91	–	*	–

Table 4 ANOVA test results on gender, age and occupation difference (continued)

<i>Analysis of variance for value-expressive influences</i>						
<i>Source</i>	<i>DF</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P</i>	
Gender	3	84.015	28.005	31.25	0.000	
<i>Level</i>	<i>N</i>	<i>Mean</i>	<i>StDev</i>	<i>Individual 95% CIs for mean</i>		
Ch.Non-Stu	78	3.91	0.91	–	–	*
US.Non-Stu	91	2.77	1.10	*	–	–
Ch.Stu	96	3.96	0.84	–	–	*
US.Stu	141	3.37	0.93	–	*	–

For example, in terms of gender, the mean influence score of the US female mobile phone consumers is significantly higher than their Chinese counterpart for utilitarian influence (4.24 vs. 3.79) with p value less than 0.001 (Table 4). In comparison, for value-expressive influence, the mean score of the US female in the sample is significantly lower than their Chinese counterpart (3.08 vs. 3.86) with p value less than 0.0001 (Table 4). That is, for *Hypotheses 3*, while part (b2) is supported by the participants of this research, but part (a2) is totally discredited. Based on this result, the two females groups could be viewed completely different regarding to their susceptibility to interpersonal influence. For the implications to the marketing strategy of those multi-national mobile phone manufacturers, this result certainly indicates that when targeting female consumers, different promotional efforts should be adopted accordingly to maximise their advertising effects. Such a contradiction to the presumption to *Hypotheses-3(a2)* could be explained by the fact that Chinese female consumers are more likely to express their feelings implicatively and indirectly compared to US female consumers. Thus, those direct expressions of utilitarian purposes are more likely agreed by US female consumers using the self-report method. It is also noteworthy that the fact that the part (b2) of *Hypotheses-3* is supported by this research is consistent with an early result (Mourali et al., 2005) that US female consumers have a more individualistic orientation and less affiliated to a certain reference group psychologically compared to their Chinese counterparts. But for male mobile phone consumers, the ANOVA results are supportive for both parts (a1) and (b1) of *Hypotheses-3*, but the differences for both utilitarian influence and value-expressive influence are statistically insignificant, as shown in Table 4.

When comparing the differences between the mobile phone consumers of two nations in terms of age groups (young vs. mid-age), similar results can be seen in Table 4. The mean influence score of the US young mobile phone consumers is significantly higher than their Chinese counterpart for utilitarian influence (4.26 vs. 3.86) with p value less than 0.0001, and for value-expressive influence, the mean score of the US young in the sample is significantly lower than their Chinese counterpart (3.37 vs. 3.92) with p value less than 0.001. For the mid-age group, the US sample scored a higher value for utilitarian influence (4.17 vs. 3.80) with p value less than 0.001, but for value-expressive influence, the US score is significantly lower than their Chinese counterpart (2.71 vs. 4.20) with p value less than 0.0000. That is, for *Hypotheses-4*, both part b (1 and 2) is supported by this research, but part a (1 and 2) is not by the statistical evidence from this research. The contradiction to *Hypothesis-4(a)* could also be explained by the perception that in general the US youth has a higher motivation to agree with the

direct expression of utilitarian statements while Chinese youth has a closer psychological affiliation to certain reference groups.

Finally, an exception is about the differences between the mobile phone consumers of two nations in terms of occupation groups (student vs. non-student). As shown in Table 4, both student and non-student groups of the US mobile phone consumers have a lower mean influence scores than their Chinese counterpart for both utilitarian and value-expressive influence (2.77 vs. 3.91 and 3.36 vs. 3.96) with p value less than 0.0001. That is, *Hypotheses-5* (both (a) and (b)) is strongly supported by the statistical evidence from this research, and again consistent with the results of Mourali et al. (2005). Considering the fact that no significant results are obtained in this research concerning the difference of susceptibility to informational influence by the samples of two nations in this research, but there are significant differences between US and Chinese mobile phone consumers regarding to the utilitarian and value-expressive influences, such result is clearly against the two-dimensional approach suggested by Bearden et al. (1989) in which they promote examining informative influence and normative influence while ignoring the difference between utilitarian influence and value-expressive influence.

In order to provide some insights about the relative importance of the reference group influences against other important factors in mobile phone consumers' purchasing decision, participants of this research in both nations were asked to rank those concerns from *most important* and *least important* when choosing a mobile phone, and the statistic results are displayed in Table 5. Among the five listed factors,

- the newest technology (i.e., newest functions, such as blue teeth)
- the best design and appearance
- the lowest price among relatively similar products
- the most attractive calling plan package associated
- the reference group influences.

The US mobile phone consumers rank "the most attractive calling plan package" being the most important (with 36%), followed by the "lowest price among relatively similar products (ranked 2nd with 34%). In comparison, their Chinese counterpart ranks "the best design and appearance" as the most important consideration (with 41%) while also place "lowest price among relatively similar products as the 2nd most important concerns with 24% (Table 5). The above difference may be attributed to the fact that US mobile phone consumers rely more on economic rational when purchasing a mobile phone while pay very little attention to the possible reactions from their peers' about any specific features of product design, but their Chinese counterparts intend more to impress themselves and others with their mobile phones' fancy design and appearance, and are willing to pay a price for it. From the view of oriental cultural, it suggests that in the purchasing decisions, Chinese consumers try to build their own images similar to their intended reference groups in terms of its design features and appearance. For example, a low-priced but decent looking mobile phone could be a market star in China while a high-tech but malformed one may not sell well. On the contrary, nothing would be more persuasive than a price comparison together with an attractive calling plan for US mobile phone consumers.

Not surprisingly, the reference group influence (worded as 'peer influence' here for survey participants' easy understanding) was ranked the last (among the five listed factors) for both US mobile phone consumers (ranked 5th with only 1%) and Chinese mobile phone consumers (tied for 4th with 9%) – as the most important purchasing decision factor. This result reconfirms the common belief in the business strategy research that while the marketing effort can help a firm to sell its products or services, to be competitive in today's global marketplace, a firm must, and foremost, be able to produce the best available products or services with the best available technology in terms of better design, high quality, and low price. It must also be said that here it is not to suggest that the theory and practice of those reference group influences (i.e., using them in firms' marketing effort) have no practical implications. In fact, while other factors being equal (i.e., no significant differences), the marketing effort with the appropriate application of those reference group influence certainly can help firms to better sell their products or services.

When checking their rankings on 'least important factors', however, there is an interesting result, which needs to be explained from the cultural differences between the two nations. That is, while a majority (41%) US participants rank 'the peer influences' as the 'least important' purchasing factor, but a majority (29%) of Chinese consumers list the 'newest technology' as their least important' purchasing factor. This fact has been verified by the results of this research earlier (*Hypothesis-2* is supported by this research) – i.e., the US consumers in general are less influenced by those reference groups than their Chinese counterparts. But future research may be needed here to provide a possible explanation on – why the technology factor are viewed so unimportant in the purchasing choices among Chinese mobile phone consumers. A related explanation may be lie on the fact that currently – while there is an intensified competition in the US market among many different mobile phone service providers such as: Cingular, Verizon, and Sprint and consumers pay more attention in choosing a calling plan service meanwhile can only get a mobile phone model that is available from their service provider at the time, when models are often very limited. In comparison, there are only two companies, China Unicom and China Mobile, currently providing mobile phone services in China with a very limited choice in calling plans. Consequentially, Chinese consumers have to put more attentions on choosing mobile phone's model and brand (with more choices) and less concerned in choosing different calling plans (very limited) between the two only providers.

5 Summary and future research

This paper presents a comparative study investigating the influence of different reference groups on consumer purchasing behaviour between the mobile phone users of USA and China. Based on the existing literature about the influence of reference groups, five hypotheses regarding the influences of those reference groups on the purchasing behaviour are constructed in this research. A web-based questionnaire survey was conducted to collect the data – which then are used to empirically test the proposed hypotheses. The testing results strongly support *Hypothesis-1* with significant statistical evidence, reconfirming the presumption that there is a strong influence of reference groups on mobile phone consumers for both nations in their purchasing decisions. The result further indicates that among three influences tested, the *informational*

influence has the strongest impact on mobile phone consumers, with the implication to those multinational mobile phone manufacturers' marketing practice that those firms should continuously use these reference group influences (e.g., peer pressure messages and slogans) to target mobile phone consumers in their future promotional efforts. However, contrary to a popular presumption that in terms of those reference group influences, there should be significant differences between US and Chinese mobile phone consumers due to some fundamental culture and social tradition differences, this study reveals that among the three reference group influence examined, only the value-expressive influence has resulted in statistically significant difference between China and US mobile phone consumers. That is, for *Hypothesis-2*, only part (c) is validated by this research, thus generates a need for future research to explore possible explanations.

The susceptibility to the three major reference group influences among different segments of mobile phone consumers in terms of gender, age, and occupation is also empirically tested with *Hypotheses 3–5*. The results reveal that most of such differences are rather statistically insignificant with a few exceptions, as discussed in the last section. Some possible explanations and their managerial implications to marketing strategy of those multi-national mobile phone manufacturers are also explored as well. Finally, the relative importance of the reference group influences comparing to other important factors in mobile phone consumers' purchasing decision is also examined – in terms of ranking “the most important factor” vs. “the least important factor”. As shown in Table 5, while US mobile phone consumers rank “the most attractive calling plan package” being the most important, followed by the “lowest price among relatively similar products, in comparison, their Chinese counterpart ranks “the best design and appearance” as the most important consideration and place “lowest price among relatively similar products as the second most important concerns. From the marketing strategy point, such a result highlights the fact that US mobile phone consumers rely more on economic rational when purchasing a mobile phone, but their Chinese counterparts intend more to impress themselves and others with their mobile phones' fancy design and appearance. Another important point deserves to be point out is that though the reference group influence was ranked as the least important factor (among the five) by both US and Chinese mobile phone consumers, it is not to suggest that the practice of using those reference group influences in firms' marketing effort has no practical implications. In stead, this result just reconfirms the lecture from business strategy research that to be competitive in today's global marketplace, a firm must and foremost, be able to produce the best available products or services with the best available technology in terms of better design, high quality, and low price. When other factors being equal (i.e., no significant differences), the marketing effort with the appropriate application of the reference group influence certainly can help firms to better sell their products or services.

This paper presents preliminary results of an on-going research focusing on the successful marketing strategies for those multinational mobile phone corporations. Based on these preliminary results, further studies should expand in the following directions:

- more statements, specific and general, regarding the influence of reference groups should be developed and tested
- the population should be extended to cover a more diversified consumer population
- more consumer segments should be added in the future study.

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