

This file was downloaded from BI Open Archive, the institutional repository (open access) at BI Norwegian Business School <http://brage.bibsys.no/bi>.

It contains the accepted and peer reviewed manuscript to the article cited below. It may contain minor differences from the journal's pdf version.

Dai, W., Arnulf, J. K., Lao, L., Wan, P., & Dai, H. (2019). Like or want? Gender differences in attitudes toward online shopping in China. *Psychology & Marketing*, 36(4), 354-362. doi:10.1002/mar.21183

Copyright policy of *Wiley*, the publisher of this journal:

Authors are permitted to self-archive the peer-reviewed (but not final) version of a contribution on the contributor's personal website, in the contributor's institutional repository or archive, subject to an embargo period of 24 months for social science and humanities (SSH) journals and 12 months for scientific, technical, and medical (STM) journals following publication of the final contribution.

<http://olabout.wiley.com/WileyCDA/Section/id-817011.html>

Like or want? Gender Differences in Attitudes towards Online Shopping in China

Authors:

Wanwen DAI, Associate Professor at Business School of Nanjing University, e-mail: wwdai@nju.edu.cn

Jan K. ARNULF, (corresponding author) Professor at BI Norwegian Business School, e-mail: jan.k.arnulf@bi.no

Laileng IAO, Macau University of Science & Technology, e-mail: phoenia830802@gmail.com

Pei WAN, Business School of Nanjing University, e-mail: 278536715@qq.com
Haojin DAI, The University of Adelaide, e-mail: a1739041@student.adelaide.edu.au

Haojin DAI, The University of Adelaide, Adelaide, South Australia, 5005, Australia, e-mail: a1739041@student.adelaide.edu.au

Word count: 6,713

Running head: Online Shopping Gender Differences

Key words: Online shopping; Gender differences; Chinese consumers; Implicit Association Test

Like or want? Gender Differences in Attitudes towards Online Shopping in China

ABSTRACT

While previous studies indicate that female consumers display less trust towards online shopping than males do, there is little research to address the reasons behind this difference. Our study applies a combination of both self-report and the Implicit Association Test (IAT) to compare the cognitive and affective components of attitudes in men and women toward online shopping in China. Although female participants showed no significant difference from male participants in affective attitudes toward online shopping in the self-report condition, females associated online shopping more frequently with unpleasant adjectives and off-line shopping with pleasant adjectives in the indirect IAT condition. The opposite pattern was found for the male group. This finding indicates a wanting but disliking attitude toward online shopping among the female consumers in China, which provides a unique theoretical contribution to consumer behavior theory and helps to enhance e-marketers' market targeting and segmentation effectiveness in China.

INTRODUCTION

Online shoppers can buy almost everything through the internet and is now the most popular purchasing channel in China, the world's biggest ecommerce market. While many countries worldwide were severely hit by the global recession, China's online retail market appeared to be unaffected and has been growing steadily (Gong et al., 2013). Recent data reveal that the number of male internet users is almost equal to female users in China. However, when it comes to online shopping behaviors, the gender distribution of deeply-engaged online shoppers is very uneven: 61.6% of these are men and 38.4% women¹ (CNNIC, 2015, 2016).

The rapid growth of online shopping represents opportunities as well as challenges for e-marketers, and stimulates great interest in understanding what impacts consumer's online shopping decisions (Liao & Cheung, 2001; Ranganathan & Grandon, 2002; Kim et al., 2003; Cho, 2004; Glassberg et al., 2006; Zahedi & Song, 2009; Hasan, 2010; Chang & Wu, 2012; Aldousari et al., 2016). Among the factors examined in past research, attitude toward online shopping demonstrated a significant impact on online shopping behavior (Chen & Wells, 1999; Wu, 2003; Lin, 2007; Hasan, 2010; Aldousari et al., 2016). Accordingly, a better understanding of the gender differences in online shopping attitude is important for Chinese online retailers. This may help design e-marketing strategies for businesses to attract and retain customers.

The gender gap in shopping behaviors draws much attention to the role of gender in online

¹ CNNIC choose online shopping behavior index by selecting semi-annual shopping times and semi-annual shopping amount, using K-means cluster analysis method and then categorizing online shoppers into two groups, occasionally-engaged online shoppers and deeply-engaged online shoppers. Researches show that in 2014, occasionally-engaged online shoppers took up 84.71% of the whole online shoppers while deeply-engaged shoppers occupies a proportion of about 12.9%.

shopping attitude (Hasan, 2010; CNNIC, 2015, 2016). While there is a growing body of studies exploring online shopping attitude in the literature, studies of gender differences in online shopping attitude are few and findings are inconsistent, mixed, and even conflicting (Dittmar et al., 2004; Chang et al., 2005; Cyr & Bonanni, 2005; Zhou et al., 2007). Thus, gender differences in online shopping attitude remain largely unknown. To our knowledge, no such study of online shopping attitude has been carried out in a Chinese context. With the rapid growth in this market, businesses will have significant potential gains from understanding gender differences in online shopping, thus justifying more attention from research in the field.

Marketing researchers are becoming increasingly interested in non-conscious influences on consumer behavior (Gregg & Klymowsky, 2013). Attitude represents a multidimensional variable with cognitive and affective components (Fishbein & Ajzen, 1975). Treating attitude as a multidimensional concept can help enhance the understanding of gender differences in online shopping attitude (Hasan, 2010). However, most studies to date use online shopping attitude as a unifactorial concept, focusing mainly on its affective aspect. Moreover, the standard approach of using Likert-scale measures of self-report has increasingly been called into doubt (Feldman & Lynch, 1988; McClelland et al., 1989; Schwarz, 1999; Gollwitzer & Sheeran, 2006; Arnulf et al., 2014; Arnulf et al., 2018). Accordingly, the present study aims to fill this void using both self-report evaluation and the Implicit Association Test (IAT). These two complementary methods are used to examine online shopping attitude as a multi-factorial concept. We investigate gender differences in the explicit cognitive and implicit affective components of online shopping attitude in Chinese context.

RESEARCH BACKGROUND

The E-commerce in China

Some studies have claimed that e-business will not work in China, arguing that Chinese consumers are traditionally conservative savers who distrust online retailers due to risk, privacy and quality concerns (Rein, 2008). While such perceptions may have had some merit in the past, shopping patterns have changed dramatically in China during the past decades. Because of the growing availability of internet access, more and more Chinese people are using the internet for online shopping purposes.

Consumer-to-consumer online marketing is now the largest segment in the Chinese e-commerce industry. With the introduction of Alipay which adds security to online payments, E-commerce was launched by Alibaba and triggered the rapid growth of online shopping in China. The 11.11 shopping festival began in 2009 with participation from just 27 merchants as an event for Alibaba. Currently, 11.11 has become a global online shopping event with tens of thousands merchants and millions of buyers participating, and its total sale has reached billions of dollars. Up to December 2017, Internet users and online shoppers in China reached 772 million and 533 million respectively (CNNIC, 2018), see Figure 1 for trends from 2005 to 2017.

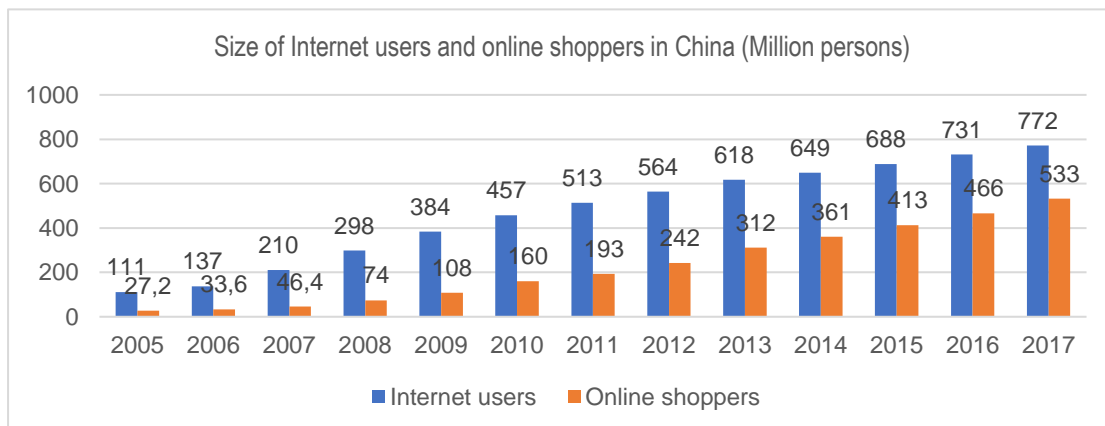


Figure 1 Size of internet users and online shoppers in China

Attitudes toward online shopping

Attitude is a key concept in the theory of reasoned action (Ajzen and Fishbein, 1980). Within this research tradition, online shopping attitude should be seen as a multidimensional construct with explicit cognitive component and implicit affective component (Fishbein & Ajzen, 1975; Glassberg et al., 2006). Explicit attitudes are judgments well established in the subjects' cognitive awareness, referring to the subjects' knowledge and desires concerning the objects. In contrast, implicit attitudes are evaluations that are automatically activated without the conscious awareness of any rationale, simply activated by subjective likes or dislikes about the objects (Greenwald et al., 1998; Maison et al., 2004; Brunel et al., 2004; Maison, 2016). Allport (1935) stated that attitude is one of the most powerful determinants of individual behavior and, therefore, is a key construct for understanding customer's online shopping behavior. Sorce, Perotti, and Widrick (2005) found that the underlying components of online shopping attitude explain more variance in predicting online purchasing, a viewpoint supported by earlier research on indirect measures of attitudes (McClelland et al., 1989). The study of Sorce, Perotti, and Widrick (2005) was among the first to provide better insights into online shopping attitudes, however it was exploratory in nature and did not examine gender difference in online shopping attitude or its components.

A person's cognitive representations of likes and desires about an object will influence his or her decision making. From a merely logical point of view, wanting to shop online should be virtually indistinguishable from liking online shopping. Oddly, cognitive wanting and affective liking do not necessarily coincide (Smith & Berridge, 2007). Deviations between wanting (the

motivation to engage in an activity) and liking (the enjoyment of the activity) have been found in domains as different as alcohol consumption (Ames et al., 2014), food consumption (Spence & Townsend, 2007), smoking (De Houwer et al., 2006), and even entrepreneurial decision-making (Mathisen & Arnulf, 2013). The extent to which this difference between liking and wanting is related to online shopping behavior does not seem to be consistent across studies (Glassberg et al., 2006). Zhou, Dai, and Zhang (2007) indicate that the path coefficient between online shopping intention and attitude varies in strength from 0.77 to 0.35 in the previous studies. They explain the fluctuation as caused by different conceptualizations of online shopping attitude, and indicate that some studies focus on the cognitive component of attitude while the others use the affective component of attitude.

Most research on attitudes towards shopping has typically relied on self-report measures (Hasan, 2010; Gregg & Klymowsky, 2013), limiting our ability to understand the complexity of the evaluation processes. A key issue is that self-report assessments can capture only explicit psychological phenomena. The last few decades has seen an increasing interest in understanding psychological phenomena as reflecting two separate systems, first an explicit cognitive system based on conscious evaluation, and secondly an implicit affective system which is unconscious and seems subject to principles of automaticity (Wilson et al., 2000; Gregg & Klymowsky, 2013). Whilst explicit cognitive attitudes may be evaluated using self-report measures, implicit affective attitudes are best assessed by indirect, behavioral measurement procedures. Individuals process information about themselves not only in an explicit (i.e., controlled or conscious) mode but also in an implicit (i.e., automatic or non-conscious) mode (Greenwald et al., 2002). Consequently, assessment procedures that do not

rely on self-reports are needed for the measurement of online shopping attitudes. Breckler (1984) recommends that a priori method is vital for classifying measure of cognition and affect, and suggests that a confirmatory, rather than an exploratory approach is more appropriate to examine components of attitude. Hereby, we propose:

H1 Online shopping attitude is a multidimensional construct with distinct components of cognition and affect.

The gender gap on online shopping attitudes

The gender division of internet users in China is approximately even with 52.4% men and 47.6 women (CNNIC, 2016), which shows that gender structure of the netizen population is gradually close to the male to female ratio of the total population (supposedly 51.2: 48.8). However, the gender division of online shoppers is uneven, where men make up 57.1% and women only 42.9%. This difference is even larger when looking only at the deeply-engaged online shoppers, with 61.6% men and 38.4% women (CNNIC, 2015, 2016).

International studies on addictive shopping however, indicate that almost 60% of shopping addicts are females, and 70% of product sales are made by female consumers (Arthur, 1992; Bartel-Sheehan, 1999). Women tend to be more active shoppers, and as such, it is reasonable to expect that Chinese women can become as deeply-engaged online shoppers as men currently are (Yang and Wu, 2007).

Past studies looking at the relationship between demographic profiles and online shopping found a distinct relationship between the gender of a customer and this person's attitude towards online shopping (Haque et al., 2011). Evidence of dominance by men and resistance in using the internet by women is reported in many previous studies (Fang & Yen, 2006; Hills & Argyle,

2003; Li & Kirkup, 2007). Findings from multiple studies proved that men purchase and spend more money online than women (Korgaonkar & Wolin, 1999; Alreck & Setle, 2002; Brown et al., 2003; Rodgers & Harris, 2003). Given that men and women have been shown to differ in their online shopping intentions, it seems surprising that so few studies have reported on gender differences in online shopping in China, and even fewer studies on gender differences in online shopping attitude. As a result, little is known about the gender distribution of consumer attitudes toward online shopping in China. Taken together, the referred studies indicate that the Chinese online consumer behaviors are likely to display gender differences, hence:

H2 There is a gender difference in the attitudes toward online shopping between Chinese male consumers and female consumers.

One likely cause of gender differences in Chinese online shopping may be related to gender differences in technology acceptance and usage (e.g., Gefen & Larsen, 2017). Men seem to be more interested in learning and applying computers and are more likely to regard technology as just another machine (Brunner & Bennett, 1997). Men also seem more informed and accepting of the risks involved in online shopping (Shukla, 2016). Hence, they are may be more accepting towards online shopping than women when it comes to explicit cognitive attitude. Hence,

H2a: Measured as explicit cognitive attitudes, men will be more accepting towards online shopping than women.

Women focus more on social factors than the technology itself than men (Lian & Yen, 2014). They seem to pay more attention to face to face communication and are less informed about the risks of online shopping, and thus have less confidence in online shopping. This may

possibly give rise to skepticism towards online shopping that will also appear as implicit affective attitudes. In light of this, we propose:

H2b: Measured as implicit affective attitude, men will be more accepting towards online shopping than women.

METHODS

Explicit measures of attitudes, such as directly asking participants questions pertinent to the constructs of interest (Fazio & Olson, 2003), are vulnerable to different types of bias that undermine their validity (i.e., social desirability, self-deception, and self-ignorance). In contrast, implicit measures employ techniques to capture participants' attitudes in an indirect way (Nevid & McClelland, 2010), rely on measures such as reaction time to index underlying associations, and 'do not require introspective access to the mental representations they are designed to assess' (Gawronski et al., 2007, p.181).

As a leading indirect measure, the Implicit Association Test (IAT) has been widely used to assess individuals' implicit attitudes (Cunningham et al., 2001; McConnell & Leibold, 2001; Fazio & Olson, 2003) since it was first introduced by Greenwald, McGhee, and Schwartz in 1998. To avoid social desirability bias and capture the influences of gender difference on online shopping attitudes which occur without conscious consideration in Chinese cultural context, we chose the IAT along with a questionnaire devised by the authors for this study to examine the gender differences in explicit and implicit attitudes toward online shopping respectively.

Participants

83 men and 79 women were recruited from Starbucks customers in Nanjing, Shanghai, Beijing, Shenzhen, Xi'an, Shenyang, and Urumchi to participate in this study. Participants were selected based on one criterion: All of them shopped on the internet at least few times per week. All participants were paid one coffee or RMB 30 each for their participating. For male participants, the mean age was 30.2 yr. (SD = 5.28, range: 18-53). For female participants, the mean age was 25.1 yr. (SD = 4.6, range: 16-43).

Measures

Explicit measures

Based on previous empirical studies informing our concept of the theoretical foundation of the multidimensional construct of attitude, six statements were adapted to measure the underlying cognitive and affective components of online shopping attitude. Three statements were used to measure the cognitive component: (1) Online shopping is a wise way to purchase; (2) Online shopping is useful to people; and (3) Online shopping is an effective way to buy. The affective attitude was measured by three statements: (1) I do like online shopping, (2) Online shopping makes me feel unhappy (reversed), and (3) I feel excited when I shop online. Response to all statements were measured by a seven-point scale ranging from (1) strongly disagree to (7) strongly agree.

Implicit measures

The target concepts in the current study were online shopping and offline shopping. We did a pilot study involving 92 undergraduate students in marketing courses at a large public university to help create the pool of related materials for the IAT design. All students were asked to nominate pictures that were representations of "online shopping" and "offline shopping"

respectively, and pleasant and unpleasant adjective words of shopping experience as well. As showed in table 1, the sorting procedure resulted in the selection of logo pictures from three online shopping websites (*Taobao*, *Ctrip*, and *Jingdong*) and one online payment processor (*Alipay*) as representations of scenes related to online shopping, and the other four pictures (*Supermarket*, *Shopping Mall*, *the Checkout line*, and *Free market*) were selected to represent offline shopping. The top four of the pleasant adjectives includes *convenient*, *economical*, *fashionable*, and *funny*, and unpleasant adjectives includes *weary*, *noisy*, *dirty*, and *disgusting*.

Table 1. Top four pictures and words nominated in the pilot study

Pictures (Nominated Times)	Online shopping		Offline shopping	
		Taobao (80)		Super Market (88)
	Ctrip (75)		Shopping Mall (68)	
	Jingdong (60)		Checkout line (65)	
	Alipay (58)		Free Market (52)	
Adjective words (Nominated Times)	Pleasant		Unpleasant	
	便捷的	Convenient (86)	疲倦的	Weary (70)
	合算的	Economical (79)	嘈杂的	Noisy (58)
	时尚的	Fashionable (72)	脏乱的	Dirty (51)
	有趣的	Funny (66)	讨厌的	Disgusting (43)

Previous research has shown that pictures generally will display smaller IAT effects than words (Feroni & Bel-Bahar, 2010). We therefore developed a version of the IAT using Inquisit software (Inquisit, 2014) with both pictures and words as stimuli. All stimuli were presented at the center of the computer screen, and participants were asked to categorize each picture and

word into one of two categories (in single categorization tasks) or one of four categories (in combined categorization tasks). Participants used either the “e” key with the left index finger or the “i” key with the right index finger. All of them were right-handed, hence dexterity should not play a role in response differences.

Procedures

Participants were told that they were participating in a marketing research project about online shopping attitudes. Those who met the selection criterion were invited to a physical table to fill out the questionnaire and complete the IAT tasks. The order of questionnaire and the IAT was counterbalanced across participants. All participants went through this procedure individually in a quiet environment.

Following the paradigm of Greenwald, Nosek, and Banaji (2003), Table 2 describes the seven blocks of a typical IAT procedure in the present study. For half the participants, the positions of blocks 1, 3, and 4 were switched with those of blocks 5, 6, and 7, respectively to control the sequence effect. All participants were asked to respond as quickly and accurately as possible.

Table 2. Sequence of blocks in the online shopping IAT

Block	No. of Trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	20	Practice	Online shopping pictures	Offline shopping pictures
2	20	Practice	Pleasant words	Unpleasant words
3	20	Practice	Pleasant words + Online shopping pictures	Unpleasant words + Offline shopping pictures
4	40	Test	Pleasant words + Online shopping pictures	Unpleasant words + Offline shopping pictures
5	20	Practice	Offline shopping pictures	Online shopping pictures
6	20	Practice	Pleasant words + Offline shopping pictures	Unpleasant words + Online shopping items
7	40	Test	Pleasant words + Offline shopping pictures	Unpleasant words + Online shopping items

RESULTS

Explicit attitudes

Table 3 presents the results of the confirmatory factor analysis and reliability measures. All items (in boldface), except for one affect item, demonstrate high loading (>0.80) on their intended factor and low loading on other factors (<0.50). Cronbach's alpha was computed to evaluate construct reliability. As Table 3 indicates, both constructs show high internal reliability ($\alpha > 0.80$).

Table 3. Rotated Component Matrix

	Components		
	Cognition	Affect	α
C1	.890	.280	0.93
C2	.887	.313	
C3	.895	.350	
A1	.312	.870	0.92
A2	.286	.881	
A3	.430	.760	

Table 4 presents the correlation between the underlying components of attitude along with the means for men and women. The correlation between the cognitive and affective components was high and significant. The correlation estimate was below the 0.80 threshold which indicates that multicollinearity should not be a problem (Bryman & Cramer, 1994). Thus, H1 is supported. Furthermore, men's means were higher than those of women in both of the two attitudinal components. Women's cognitive attitudes toward online shopping was low and men's affective intention to shop online was low.

Table 4. Correlation and means of attitudinal components

Attitudinal Components	1	2	Males' mean	Females' mean	Combined mean

1.Cognition	1.00		16.1	9.2	12.7
2.Affect	0.68*	1.00	15.2	13.9	14.6

* $p < 0.001$.

Gender differences in attitudinal components were tested using *t*-tests and Table 5 presents the results of the *t*-tests. The gender difference in cognitive attitude is larger than in affective attitude. It is interesting to note that the men did not score statistically significantly higher on liking online shopping than women ($t = 1.749$, $p = .084$, ns) rejecting H2b, but they did score statistically significantly higher on wanting to shop online, which supports H2a.

Table 5. Gender Differences in attitudinal components

Attitudinal Components	Male	Female	Difference	t	<i>p</i> -value
1.Cognition	16.1	9.2	6.9	9.958	.001
2.Affect	15.2	13.9	1.3	1.749	.084

Implicit attitudes

IAT Data were analyzed by the standard procedure (Greenwald et al., 1998; Greenwald et al., 2003). The first two trials of each block were excluded from analysis because these response latencies are typically longer (Greenwald et al., 1998). Also, to control inattention or anticipation (as suggested by Greenwald et al., 1998), trials that had latencies longer than 3000 msec and shorter than 300 msec were recoded to 3000 msec and 300 msec, respectively. Data were unusable for 3 male participants who, for unknown reasons, neglected to complete the computer-administered portion of the experiment. Data from the other 3 participants (2 men and 1 woman) were excluded from the analyses because their error rates were higher than 25% (the average error rate of the other 156 participants was 6.42%). All analyses reported here involve the remaining 78 male participants and 78 female participants, with an average error rate of 7.83% and 5.01%, respectively.

The 2 (Gender: male, female) \times 2 (category combination: “online shopping + unpleasant” and “off-line shopping + pleasant” , “online shopping + pleasant” and “off-line shopping + unpleasant”) analysis of variance (ANOVA) on reaction time showed a statistically significant main effect of gender ($F_{1,308} = 20.08, p < .001$; partial $\eta^2 = 0.11$), but the effect of category was not statistically significant ($F_{1,308} = 0.21, ns$; partial $\eta^2 = 0.001$), the male group had a faster mean response time than the female group, Table 6 displays the mean latencies for the association between targets and adjectives.

Table 6. Mean Reactive Time for the Association between Targets and Adjectives

	“online shopping + unpleasant” / “off-line shopping + pleasant”		“online shopping + pleasant” / “off-line shopping + unpleasant”	
	Mean	SD	Mean	SD
Male	869.31	160.43	662.29	145.56
Female	829.42	211.76	1024.62	227.92

A statistically significant two-way interaction was observed ($F_{1,308} = 35.83, p < .001$; partial $\eta^2 = 0.18$). As displayed in Figure 2, the female group responded faster when “online shopping + unpleasant” were mapped onto one key response and “off-line shopping + pleasant” were mapped onto the other key response than to the opposite mappings (i.e., “online shopping + pleasant” and “off-line shopping + unpleasant”; $t_{77} = -6.81, p < .001$, Cohen’s $d = 0.88$; IAT effect $D = -1.29$). This demonstrated that the female group had a generally negative implicit attitude toward online shopping. The male group responded more rapidly when “online shopping + pleasant” was mapped onto one key response and “off-line shopping + unpleasant” was mapped onto the other key response than to the opposite mappings (i.e., “online shopping + unpleasant” and “off-line shopping + pleasant”; $t_{77} = 6.35, p < .001$, Cohen’s $d = 1.35$, IAT

effect $D = 0.92$). Compared with the female group, the male group had a generally positive attitude toward online shopping, thus H2b is supported.

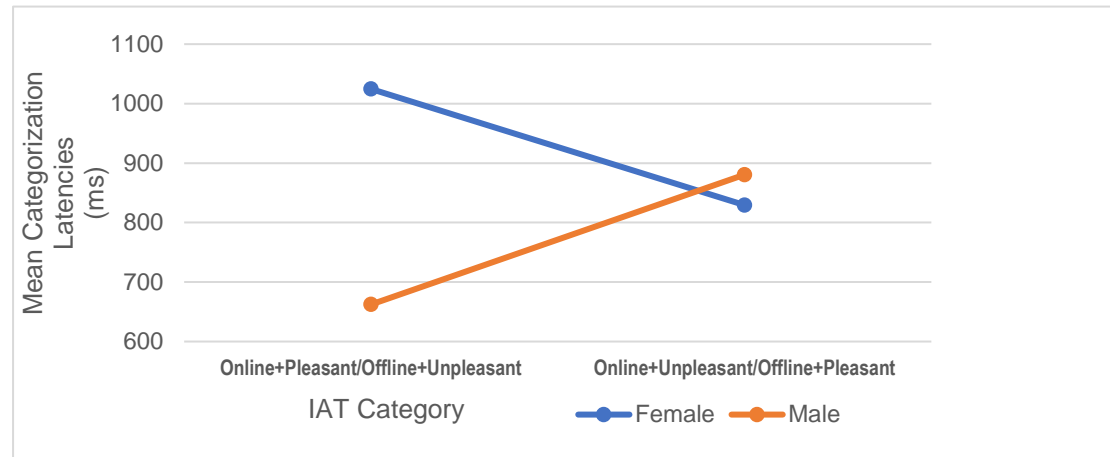


Figure 2 Mean categorization latencies for the online shopping vs. offline shopping implicit association test (IAT)

It is worth mentioning that the result of the questionnaire contradicted the result of the IAT. In the Likert scale measures from the questionnaire, men did not score significantly higher on liking online shopping than women. However in the IAT, the male group generally had a positive implicit attitude toward online shopping. The lack of differences between the genders in the explicit measures may be due to social desirability bias. In the Chinese cultural context, the recent advances in equality between men and women has raised women's awareness of their self and status has increased, possibly attaching more importance to their equality in social life. Women may pretend to act as men in filling in the questionnaire. However, IAT is a double discrimination task in which participants have to press one of two response keys to sort stimuli to two response categories of an object dimension and an attribute dimension. The basic rationale of the IAT is that it is easier to respond with the same response key to two object classes if the object classes are associated than if they are no associated. When using IAT to

check the implicit attitudes, the experiment doesn't relate the result to the meaning of the items but the response speed to the items, steering clear of the semantic relationships that frequently inflate statistics in Likert scale data (Arnulf et al., 2018). It is highly unlikely that the IAT measures are affected by the same social desirability biases that may influence the questionnaire responses.

DISCUSSION AND IMPLICATIONS

Attitudes are generally seen as expressing an evaluation of an object with some degree of favor or disfavor (Eagly & Chaiken, 1993). When studying attitude as a case of incentive motivation theory, it is useful to make the distinction between implicit affective valence of a stimulus and explicit willingness to approach that stimulus (Berridge & Robinson, 2016). Research has established that liking and wanting rewards can be dissociated (Robinson & Berridge, 1993). The dissociations between liking and wanting have clear heuristic and empirical value for the deeper understanding why some people crave online shopping. Although these ideas have already been discussed in prior work (Gregg & Klymowsky, 2013), there is almost no empirical research that systematically investigates liking and wanting online shopping as a function of gender. The difference between implicit liking and explicit wanting may also be relevant for the study of online shopping, especially for understanding gender differences in online shopping attitudes. For example, Chinese women often implicitly devalue online shopping, while reporting explicit enjoyment almost same as men do.

Research has shown that women have more favorable attitudes toward offline shopping than online shopping and men's attitudes do not differ significantly between offline and online shopping (Dittmar et al., 2004; Hasan, 2010). The present study contributes to these findings

by distinguishing the underlying components of online shopping attitude and examining gender differences in the attitudinal components in China. The empirical results identify two distinct and valid components of online shopping attitude and reveal significant gender differences across the cognitive attitude toward online shopping in China.

The present study found that Chinese women held a generally implicit negative affective attitude toward online shopping. It is interesting that Chinese women explicitly rated their online shopping appreciation almost the same as men did, but implicitly they tended to devalue online shopping. This finding provides empirical support for Dittmar et al. (2004) study which reports that females appreciate and fear online shopping at the same time.

Overall, men's cognitive and explicit attitudes towards shopping were significantly higher than that of women in China. According to attitude theory, the cognitive representation of an object plays a key role in regulating the affective responses to and intentions toward that object. Men's high scores on cognitive attitudes may explain their high affection toward online shopping, women's low cognitive attitude may explain their implicitly low affection toward online shopping, and these findings may explain the gender gap of deeply-engaged online shopping activities. This suggests why online shopping may not be as appealing to Chinese women as it is to men, which means that Chinese women are still generally unconvinced or skeptical about the benefits of online shopping. Thus, increasing females' awareness of the benefits associated with online shopping and mitigating females' uneasiness about online shopping are pivotal to businesses aiming to attract and retain female online shoppers. For instance, implementing online referral mechanism may help female consumers alleviate their implicit doubts about online shopping.

This pattern is further corroborated through our findings that women's implicit affective attitude toward online shopping was lower than that of men. Our finding echoes Dittmar et al. (2004) study which reports that women place greater emphasis on the emotional experiences linked to online shopping. Specifically, women's devaluation of online shopping derives from the lack of social and interpersonal interactions in online shopping whereas men's appreciation of online shopping comes from its functional benefits such as convenience, economy, and efficiency. Thus, in addition to attempts to enhance women's explicit wanting of online shopping, businesses need to focus their efforts on enhancing women's implicit liking of online shopping. For example, businesses can improve online shopping environments by careful design of page and website (Zhang & Li, 2005; Demangeot & Broderick, 2010), utilizing online forums and chat rooms (Zhou et al., 2007), providing perceived benefits for consumers to share their shopping experiences with other online consumers (Abdullah et al., 2016), and providing instant feedback or information on products to enhance women's implicit affection to online shopping (Dittmar et al., 2004; Hasan, 2010; Martín et al., 2011).

The results of this study provide empirical support for classifying attitudes toward online shopping into explicit wanting (cognition) and implicit liking (affection) factors. Since women show lower cognitive attitudes than men, their affective attitudes and behavioral intention to purchase online is lower. This finding is also a substantive contribution to explain the psychological causes behind the gender gap of deeply-engaged online shoppers with 61.6% men and 38.4% women in China. Accordingly, greater understanding the value of online shopping (wanting) and improving emotional experiences in online shopping (liking) are likely to boost online shopping behavior among consumers in China.

Fishbein and Ajzen (1975) suggest that complete description of attitude requires that components of attitude be evaluated for a test of the relationship between attitude and behavior. Glassberg et al. (2006) stated that attitude is not adequately examined in past studies and much less attention is given to its underlying components. Consistent with these recommendations, the present study attempts to address an issue that has received very little attention in past research, recognizes and empirically tests the components of attitude, and extends past studies of attitude into online shopping in China. Glassberg et al. (2006) assert that the power of attitude to predict behavioral intention can be greatly enhanced by expanding the attitude construct to include both cognitive and affective components. Thus, this study makes theoretical and empirical contributions to the deeper understanding of online shopping attitude, specifically in China.

LIMITATIONS AND FUTURE RESEARCH

In this study, we were interested in the consumers' attitudes toward online shopping in Chinese context. We used the IAT and a questionnaire to measure the implicit and the explicit attitudinal components toward online shopping respectively. Although the present study has provided relevant and interesting insights to the understanding gender difference of consumers' online shopping attitudes in China, there are limitations associated with the research.

First, the sample for this study was drawn from seven cities in China. The profile of consumers may vary if a survey is expanded to rural regions (Lennon et al., 2007) which made up 27% of all of internet users in China (CNNIC, 2018). Therefore, future study can collect data from different regions. This approach would allow for greater generalization of the results.

Second, in addition to the gender identified in this study, there may be other demographic

characteristics such as age, education, and income have significant effects on consumer's online shopping attitudes. It would be interesting for future research to consider the other characteristics and examine their impact on the components of online shopping attitude. The information obtained may offer additional and useful information to online businesses.

Finally, each attitudinal component has unique antecedents (Breckler, 1984) and consequences. Therefore, identifying antecedents (i.e., consumers' characteristics) and consequences (i.e., frequency of shopping) of online shopping attitudinal components and investigating which component has the stronger impact on online shopping under what conditions are worthwhile efforts. This line of future research helps businesses to focus their efforts on the attitudinal components to yield better returns.

Although the present study indicated gender differences on online shopping attitudes in Chinese culture, it is still unclear as to whether this would be the same in other cultural settings. Hence, it would also be interesting to explore the possible interaction effects between genders (Male vs. Female) and cultural settings (eastern vs. western) in future studies. Since Chinese women are likely to devalue online shopping in their implicit attitudes, it would also be interesting to examine whether online shopping is socially less desirable in eastern culture than in western culture. Furthermore, it would be particularly interesting to study how the Chinese norms might be changing with time in the process of globalization. Future studies with longitudinal design could be helpful for investigating this possible trend.

REFERENCES

- Abdullah, A. A., Narges, D., Mohd, S. A. Y., & Zafar, U. A. (2016). Determinants of consumers' attitudes toward online shopping, *Journal of Transnational Management*, 21, 183-199.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. New Jersey: Prentice-Hall.
- Aldousari, A. A., Delafrooz, N., Ab Y., & M. S., & Ahmed, Z. U. (2016). Determinants of consumers' attitudes toward online shopping. *Journal of Transnational Management*, 21, 183-199.
- Allport, G. (1935). "Attitudes" in *a Handbook of Social Psychology*, ed. C. Murchison. Worcester, MA: Clark University Press, 789-844.
- Alreck, P., & Setle, R. B. (2002). Gender effects on Internet, catalogue and store shopping. *The Journal of Database Marketing*, 9, 150-162.
- Ames, S. L., Grenard, J. L., He, Q., Stacy, A. W., Wong, S. W., Xiao, L., Xue, G., & Bechara, A. (2014). Functional imaging of an alcohol-Implicit Association Test (IAT), *Addiction Biology*, 19, 467-481.
- Arnulf, J. K., Larsen, K. R., Martinsen, O. L., & Bong, C. H. (2014). Predicting survey responses: how and why semantics shape survey statistics on organizational behavior. *PLoS ONE*, 9(9), e106361. doi:10.1371/journal.pone.0106361.
- Arnulf, J. K., Larsen, K. R., Martinsen, O. L., & Egeland, T. (2018). The failing measurement of attitudes: How semantic determinants of individual survey responses come to replace measures of attitude strength. *Behavior Research Methods*, 1-21. doi:10.3758/s13428-017-0999-y.
- Arthur, C. (1992). Fifteen million Americans are shopping addicts. *American Demographics*, 14, 14-15.
- Bartel-Sheehan, K. (1999). An investigation of gender differences in on-line privacy concerns and resultant behaviors. *Journal of Interactive Marketing*, 13, 24-38.
- Berridge, K. C., & Robinson, T. E. (2016). Liking, Wanting, and the Incentive-Sensitization Theory of Addiction, *American Psychologist*, 71, 670-679.
- Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, 47, 1191-1205.
- Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of marketing*, 37, 1666-1684.
- Brunel, F. F., Tietje, B. C. & Greenwald, A. G. (2004). Is the Implicit Association Test a Valid and Valuable Measure of Implicit Consumer Social Cognition? *Journal of Consumer Psychology*, 14, 385-404.
- Brunner, C. & Bennett D. (1997). Technology and gender: differences in masculine and feminine views. *NAASP Bull.* 81, 46-52.
- Bryman, A., & Cramer, D. (1994). *Quantitative data analysis for social scientists*, New York: Routledge.
- Chang, M. K., Cheung, W., & Lai, V. S. (2005). Literature derived reference models for the adoption of online shopping. *Information and Management*, 42, 543-559.
- Chang, M. K., & Wu, W. (2012). Revisiting perceived rise in the context of online shopping: an alternative perspective of decision-making styles. *Psychology & Marketing*, 29, 378-400.
- Chen, Q., & Wells, W. D. (1999). Attitude toward the Site. *Journal of Advertising Research*, 39, 27-37.
- Cho, J. (2004). Likelihood to abort an online transaction: Influences from cognitive evaluations, attitudes, and behavioral variables. *Information and Management*, 41, 827-838.
- CNNIC (2015). *China Online Shopping Market Survey Report 2014*, available at: www.cnnic.cn/hlwfzyj/hlwxzbg/dzswbg/201509/P020150909354828731159.pdf (accessed 7 Nov. 2016).

- CNNIC (2016). *China Online Shopping Market Survey Report 2015*, available at: www.cnnic.cn/hlwfzyj/hlwzxbg/dzswbg/201606/P020160721526975632273.pdf (accessed 7 Nov. 2016).
- CNNIC (2018). *The 41st China Statistical Report on Internet Development*, available at: www.cnnic.cn/hlwfzyj/hlwzxbg/hlwtjbg/201803/P020180305409870339136.pdf (accessed 26 Mar. 2018).
- Cunningham, W. A., Preacher, K. J., & Banaji, M. R. (2001). Implicit attitude measures: consistency, stability, and convergent validity. *Psychological Science*, 12, 163-170.
- Cyr, D., & Bonanni, C. (2005). Gender and website design in e-business. *International Journal of Electronic Business*, 3, 565-582.
- De Houwer, J., Custers, R., & De Clercq, A. (2006). Do smokers have a negative implicit attitude toward smoking? *Cognition & Emotion*, 20, 1274-1284.
- Demangeot, C. & Broderick, A. J. (2010). Consumer perceptions of online shopping environments: A gestalt approach. *Psychology & Marketing*, 27, 117-140.
- Dittmar, H., Long, K., & Meek, R. (2004). Buying on the Internet: Gender differences in on-line and conventional buying motivation. *Sex Roles*, 50, 423-444.
- Eagly, H. A., & Chaiken, S., (1993). *The Psychology of Attitudes*, Philadelphia: Harcourt Brace Jovanovich College Publishers.
- Fang, X., & Yen, D. C. (2006). Demographics and behavior of Internet users in China. *Technology in Society*, 28, 363-387.
- Fazio, R. H., & Olson M. A. (2003). Implicit Measures in Social Cognition Research: Their Meaning and Use. *Annual Review of Psychology*, 54, 297-327.
- Feldman, J. M., & Lynch, J. G. (1988). Self-Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior. *Journal of applied psychology*, 73(3), 421-435. doi:10.1037//0021-9010.73.3.421.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Froni, F. & Bel-Bahar, T. (2010). Picture-IAT versus Word-IAT: Level of stimulus representation influences on the IAT. *European Journal of Social Psychology*, 40, 321-337.
- Gawronski, B., LeBel, E. P., & Kurt R. P. (2007). What Do Implicit Measures Tell Us? Scrutinizing the Validity of Three Common Assumptions. *Perspectives on Psychological Science*, 2, 181-193.
- Gefen, D., & Larsen, K. (2017). Controlling for Lexical Closeness in Survey Research: A Demonstration on the Technology Acceptance Model. *Journal of the Association for Information Systems*, 18(10), 727-757. doi:<https://doi.org/10.17705/1jais.00469>.
- Glassberg, B. C., Grover, V., & Teng, J. T. C. (2006). Information system research with an attitude. *The Data Base for Advances in Information Systems*, 37, 76-85.
- Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69-119. doi:10.1013/S0065-2601(06)38002-1.
- Gong, W., Stump, R. L., & Maddox, L. M. (2013). Factors influencing consumers' online shopping in China. *Journal of Asia Business Studies*, 7, 214-230.
- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109, 3-25.
- Greenwald, A. G., McGhee, A. G. & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74, 1464-1480.

-
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and Using the Implicit Association Test: An Improved Scoring Algorithm. *Journal of Personality & Social Psychology*, 85, 197-216.
- Gregg P. A., & Klymowsky, J. (2013). The Implicit Association Test in Market Research: Potentials and Pitfalls. *Psychology & Marketing*, 30, 588-601.
- Haque, A., Sadeghzadeh, J., & Khatibi, A. (2011). Identifying potentiality online sales in Malaysia: a study on customer relationships online shopping. *Journal of Applied Business Research*, 22, 119-130.
- Hasan B. (2010). Exploring gender differences in online shopping attitude. *Computers in Human Behavior*, 26, 597-601.
- Hills, P., & Argyle, M. (2003). Uses of the Internet and their relationships with individual deference in personality. *Computers in Human Behavior*, 19, 59-70.
- Inquisit. (2014). (Version 4.0.5.0). Seattle, WA: Millisecond Software, LLC.
- Kim, S., Williams, R., & Lee, Y. (2003). Attitude toward online shopping and retail website quality: A comparison of US and Korean consumers. *Journal of International Consumer Marketing*, 16, 89-111.
- Korgaonkar, P. K., & Wolin, L. D. (1999). A multivariate analysis of web usage. *Journal of advertising research*, 39, 53-68.
- Lennon, S. J., Kim, M. J., Kim K. P., Jolly, L. D., Damhorst, M. L., & Jasper, C. R. (2007). A Longitudinal Look at Rural Consumer Adoption of Online Shopping. *Psychology & Marketing*, 24, 375-401.
- Li, N., & Kirkup, G. (2007). Gender and cultural deference in Internet use: A study of China and the UK. *Computers & Education*, 48, 301-317.
- Lian, J., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 37, 133-143.
- Liao, Z., & Cheung, M. T. (2001). Internet-based e-shopping and consumer attitudes: An empirical study. *Information and Management*, 38, 299-306.
- Lin, H. F. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and applications*, 6, 433-442.
- Maison, D. (2016). Implicit Association Test (IAT): Using Computer-Based Methods to Measure Consumer Implicit Attitudes. *Selected Issues in Experimental Economics*, 107-124.
- Maison, D., Greenwald, A. G., & Bruin, R. H. (2004). Predictive Validity of the Implicit Association Test in Studies of Brands, Consumer Attitudes, and Behavior. *Journal of Consumer Psychology*, 14, 405-415.
- Martín, S. S., Camarero, C., & José, R. S. (2011). Does involvement matter in online shopping satisfaction and trust? *Psychology & Marketing*, 28, 145-167.
- Mathisen, J.-E., & Arnulf, J. K. (2013). Competing mindsets in entrepreneurship: The cost of doubt. *The International Journal of Management Education*, 11(3), 132-141. doi:10.1016/j.ijme.2013.03.003.
- McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How Do Self-Attributed and Implicit Motives Differ. *Psychological Review*, 96, 690-702. doi:Doi 10.1037//0033-295x.96.4.690.
- McConnell, A. R., & Leibold, J. M. (2001). Relations among the implicit association test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*. 37, 435-442.
- Nevid, J. S., & McClelland, N. (2010). Measurement of Implicit and Explicit Attitudes toward Barack Obama. *Psychology & Marketing*, 27, 989-1000.
- Ranganathan, C., & Grandon, E. (2002). An exploratory examination of factors affecting online sales. *Journal of Computer Information Systems*, 42, 87-93.
- Rein, S. (2008), "In China, online shopping soars", Forbes.com, 6 June.

-
- Robinson, T. E., & Berridge, K. C. (1993). The neural basis of drug craving: An incentive-sensitization theory of addiction. *Brain Research Reviews*, 18, 247-291.
- Rodgers, S., & Harris, M. A. (2003). Gender and e-commerce: an exploratory study. *Journal of Advertising Research*, 43, 322-329.
- Schwarz, N. (1999). Self-reports - How the questions shape the answers. *American Psychologist*, 54(2), 93-105. doi:Doi 10.1037//0003-066x.54.2.93.
- Shukla, R. K. (2016). Gender effect on customers' perception towards online shopping. *BVIMSR's Journal of Management*, 1, 25-30.
- Smith, K. S., & Berridge, K. C. (2007). Opioid limbic circuit for reward: interaction between hedonic hotspots of nucleus accumbens and ventral pallidum. *Journal of Neuroscience*, 27, 1594-605.
- Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying. *International Journal of Retail and Distribution Management*, 22, 122-132.
- Spence, A. & Townsend, E. (2007). Predicting behavior towards genetically modified food using implicit and explicit attitudes. *British Journal of Social Psychology*, 46, 437-457.
- Wilson, T. D., Lindsey, S. & Schooler, T. Y. (2000). A Model of Dual Attitudes. *Psychological Review*, 107, 101-126.
- Wu, S. I. (2003). Relationship between consumer characteristics attitude toward online shopping. *Marketing Intelligence and Planning*, 21, 37-44.
- Yang, C., & Wu, C. C. (2007). Gender and internet consumers' decision-making. *Cyber Psychology and Behavior*, 10, 86-91.
- Zahedi, F. M., & Song, J. (2009). Do websites change customers' beliefs? A study of belief prior-posterior beliefs in e-commerce. *Information & Management*, 46,125-137.
- Zhang, P., & Li, N. (2005). The importance of affective quality. *Communications of the ACM*, 48, 105-108.
- Zhou, L., Dai, L., & Zhang, D. (2007). Online shopping acceptance model – A critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, 8, 41-62.