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A CROSS-CULTURAL STUDY ON THE EFFECTS OF SOCIAL POPULARITY AND DEAL SCARCITY ON CONSUMERS' PURCHASE BEHAVIOR

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Abstract

This research aims to examine how social popularity and deal scarcity of a product influences consumers' purchase behavior on e-commerce websites and how this influence varies across cultures. Some studies have shown that Eastern cultures (e.g., China) are more likely to herd than Western cultures (e.g., United States). Also, when a deal offer on a product is about to expire, consumers of various cultures tend to react differently. Drawing on construal level theory (CLT) and research on cultural effects, we hypothesize that for Western cultures (or Eastern cultures), there will be a positive (or negative) interaction between social popularity and deal scarcity on consumers' purchase intentions, such that the effect of social popularity, indicated by the number of customers that have already purchased the product, will be strengthened (or weakened) as the expiration time of a deal draws closer.

Keywords: Purchase intention, Herd behavior, Scarcity, Construal Level Theory, cross-cultural.

1 INTRODUCTION

When evaluating products and making purchase decisions, online consumers are often exposed to different kinds of information. A review of literature shows that beyond the utility information of intrinsic product attributes, some social and contextual information is often presented to influence consumers' judgments. For example, on shopping platforms such as E-bay and Taobao, vendors often try to distinguish themselves from many other vendors that sell similar products by highlighting the social popularity of their products, in the form of the number of consumers that have already purchased, or liked the product. Other consumers' fondness of a product can serve as a form of "social validation" for product quality (Cialdini 2007; Granovetter and Soong 1986) and give a "reason" for potential consumers to pursue the product (Shafir et al. 1993; McFerran et al. 2010). Judgments from peer consumers are often accompanied by promotional information created by vendors. For example, promotions using *scarcity* appeals, e.g., offering a discount that will expire in a short term, have been a quite prevalent strategy on e-commerce platforms. By threatening the opportunity of buying the product at the discounted price, vendors expect the consumer to fear losing the benefits of the deal, which will draw their attention to the deal and increase their tendency to attain the product.

A considerable amount of past studies have separately investigated the effectiveness of social popularity and deal scarcity cues. Particularly, these two types of information influence consumers' evaluation in different ways. Social popularity, which indicates the choice of previous consumers, signals high quality and increases the *desirability* of the products. Scarcity of promotional deals, however, implies cost savings and imposes constraints on the *feasibility* of getting the good deals. Indeed, literature has distinguished between the desirability value of an action (i.e., the rewards of the action) and the feasibility of achieving the outcome (i.e., the cost or constraints associated with the action), and characterized them as two important types of values that decision makers need to consider (e.g., Bagozzi and Dholakia 1999; Trope and Liberman 2003; Liu 2008). While past research has rarely studied the joint impacts of these two types of information, given the often coexistence of such information on online shopping platforms, it is legitimate to wonder which information would influence consumers' judgment more and how these cues would interact with each other.

Moreover, with more and more shopping platforms expanding internationally, this study also aims to investigate how the effects of social popularity and deal scarcity information on consumers' product evaluation differ for consumers from different cultural background. Some prior studies have pointed out cultural differences in consumers' reactions to social popularity and deal scarcity cues. For example, some studies have shown that collectivist cultures tend to follow others significantly more than individualist cultures (e.g., Loh and Araral 2013). Thus, one might expect that effectiveness of social popularity cues to vary across cultures. Also, when comparing the effectiveness of scarcity-related advertising appeals across different countries, studies have found that scarcity effects are stronger in some cultures than in others. In particular, Hall's *low- versus high-context paradigm* has been proposed to explain such cross-cultural differences in consumers' reactions to scarcity-related advertising content. Hence, the same promotional strategies in different countries may not achieve the same effects. This study thus aims to investigate how consumers from different cultural background will react to social popularity and deal scarcity information in different ways.

2 THEORETICAL BACKGROUND

2.1 Social Popularity and Herd Behavior

High social popularity of a product, usually exhibited by a large number of people liking or purchasing the product, may induce users to perceive the product as of high quality and follow the purchase behavior. Such behavior-based social influence, often described as observational learning (Chen et al. 2011; Bikhchandani et al. 1998; 2008), can be explained by the economic theory of

informational cascades (see, e.g., Bikhchandani et al. 1998), bandwagon effects (Corneo and Jeanne 1997; Liebenstein 1950) or herd behavior (Banerjee 1992). According to the theories, a decision maker often observes the actions of others and can extract information about the value of actions from others' choices. When limited information is available, this observed information, which reflects others' beliefs, may outweigh one's own private information in shaping his belief. Eventually, an information cascade can occur, such that all decision makers hold the same belief as their predecessors and become engaged in a type of herd behavior, i.e., everyone is doing what everyone else is doing (Banerjee 1992). Many empirical studies have provided support to this idea and revealed that users' decision making is markedly influenced by the decisions of others, such as in financial investment, technology adoption, firms' strategic decisions, political voting, and dining and fashion trends (e.g., Bikhchandani et al. 1998; Duan et al. 2009).

Herd behavior is also prevalent on the Internet. On one hand, given the large amount of products and services available online, consumers often lack the information and time to make accurate judgments (Brynjolfsson and Smith, 2000). In such situations, they often refer to the choices of other consumers when making their own decisions. For example, when users are faced with plentiful different software with similar functionalities, they generally choose the most popular one to use, which further increases its popularity (Brynjolfsson and Kemerer, 1996; Hanson and Putler, 1996). On the other hand, the Internet and information technology also provide many new opportunities for consumers to get to know others' opinions and behaviors. Many e-commerce websites explicitly indicate products' popularity, making consumers more prone to assess products based on earlier adopters' decisions.

2.2 Scarcity Effects

Scarcity is originally defined as "limits on the supply or the number of suppliers" (Brock 1968). Early studies have suggested several types of scarcity-related marketing tactics such as limited editions of products and restrictions on the availability of products. With the prevalence of group buying sites nowadays and a growing number of online deal seekers, recent applications of scarcity focus on product deals. A widely seen example is the restrictions on the time available to respond to a sale (Brannon and Brock 2001; Coulter and Roggeveen 2012). For instance, group buying sites such as Groupon negotiate large discounts with local businesses and then offer these deals on sites with a salient time counter that clicks down to zero the "time-left-to-buy". Such promotional tactics, which highlight the scarcity of deals, are the focus of the current study (e.g. "only available today").

Promotions with scarcity appeal have been shown to trigger users' scarcity-sensitive brains, leading to increased preference and demand of the discounted products. Past studies have provided several explanations for such effects (Suri et al. 2007). On one hand, scarcity appeals may attract consumers' attention to the deal and make them devote more cognitive resources to processing it (Worchel et al. 1975). Consumers may be prompted to think more concretely and scrutinize the details of the scarce product. On the other hand, scarcity could also induce relatively thoughtless and automatic responses (Cialdini, 1993), as the feel that the freedom of obtaining the deal is threatened may cause a sense of "urgency" that limits consumers' ability to process information. These two distinct mechanisms lead to questions on how scarcity influences consumers' information processing and product evaluation in different situations.

Overall, social popularity, which conveys the choice of previous consumers, may influence the perceived quality and *desirability* of a product. Deal scarcity influences the way consumers process information by imposing *feasibility* constraints on obtaining the deal. As prior studies point out, desirability and feasibility values are two core types of values associated with a decision process (Bagozzi and Dholakia 1999; Liberman and Trope 1998). While desirability refers to the value of an action's end state, feasibility refers to the specific conditions for reaching the end state. Literature has suggested the equal role of desirability and feasibility in affecting the actual decision outcome, but recent studies have demonstrated differences in users' psychological representation of them (Trope and Liberman 2003; Liu 2008). In order to understand and interpret how these two cues influence consumers' judgment and how they interact each other, we draw upon the theoretical framework of Construal-Level Theory (CLT).

2.3 Construal Level Theory

Construal Level Theory (CLT) posits that people may represent objects in their mind at a high-level (abstract) or at a low-level (concrete), depending on the *psychological distance* between the object and human (Trope & Liberman, 2010). High-level construals tend to reflect a more general understanding of actions and events, whereas low-level construals often focus on details or specifics of actions and events. The psychological distance can be perceived in different ways such as in space, in time, in social distance. The longer the perceived distance, the higher-level and more abstract the mental construction of the object will be. For example, temporal distance, as one kind of psychological distance, could change people's mental representation of future events. Events in the distant future (e.g., next summer vacation) are more likely to be represented in terms of abstract and central features at a higher level (anticipating fun and relaxation); events in the near future (e.g., the same vacation coming very soon), however, are more likely to be represented in terms of concrete features at a lower level (e.g., having a drink at the hotel pool).

Studies on CLT have typically examined the context of decision-making involving feasibility and desirability considerations. Particularly, desirability values refer to the superordinate "why" aspect of an action and are often identified as high-level, primary features of an object, whereas feasibility values reflect the subordinate "how" aspect of an action and are considered low-level, secondary features. For example, the desirability of attending a concert can be reflected by how much one likes the band, whereas feasibility can be reflected by the ticket cost. In the current context, social popularity signals the quality and desirability of products. In particular, such desirability is inferred from others' behavior (versus one's private information), which indicates a long social distance (as compared to zero distance from self) and is thus likely to be construed at a high level (Zhao and Xie 2011). On the contrary, deal scarcity, which highlights consumers' *feasibility* constraints in terms of the limited opportunity of actually getting products at a low price, may be construed at a lower level.

A considerable amount of research has emphasized the idea that an external stimulus becomes more influential when its level of representation is congruent with the natural construal level of decision makers (Higgins 2000; Higgins et al. 2003). Consistent to that idea, Liberman et al (2002) have shown that people with a high-level construal rely more on the primary features in making judgments. They focus more on the *desirability* of outcomes, i.e., the value of the end state of an action. In contrast, those with a low-level construal rely more on peripheral features in making judgments. They focus more on the *feasibility* of outcomes, i.e., the ease or likelihood that the action will achieve the desired outcome.

2.4 Cultural differences

Culture constitutes the broadest influence on many dimensions of human behavior. The influence of culture on consumption and marketing has drawn increasing attention in the recent years. Specifically, Hofstede (1984) have identified five dimensions of culture, i.e., individualism/collectivism, power distance, uncertainty avoidance, long-term orientation, and masculinity/femininity, which have been widely used in studies in different fields. Among the five dimensions, *individualism/collectivism* addresses how people from different culture may construe the relationship between themselves and others, and it has been shown that these concepts will influence people's values, cognitive style and chronic construal level (Oyserman and Lee, 2008). Indeed, other cultural dimensions can also be conceptually and empirically linked to the constructs of individualism and collectivism (e.g., power, femininity; for a review, see Blondel & Inoguchi, 2006). Hence, we focus on the *individualism/collectivism* dimension of culture and elaborate it further below.

2.4.1 Individualism/Collectivism

People in different cultures have different ways of construing the self, the others, and the relationships between themselves. These different construals can influence and determine the very nature of individual experience at a deep level: there are consequences in cognition, emotion, and motivation.

Previous research on cultural differences seems to coordinate on distinguishing two types of culture: one is egocentric, individualist, and independent whereas the other is socio-centric, collectivist and interdependent. According to Markus and Kitayama (1991), Eastern culture (e.g., China, Japan) is considered *collectivist culture*, and people represent the self as inextricably and fundamentally embedded within a larger social network (interdependent self-construal). They value the fulfillment of obligations and responsibilities over personal desires or benefits (Markus & Kitayama, 1991). In contrast, Western culture (e.g., U.S.) is considered *individualist culture*, and people represent the self as autonomous and unique (independent self-construal). They celebrate independence and creativity.

While there is very few research that explores the possibility of a cultural effect on the way people construe objects in their mind, several recent studies have suggested that there is a chronic construal level associated with culture. In particular, Hong and Lee (2010) have shown that people's cultural backgrounds have an effect on their information construal levels. Using a questionnaire developed by Vallacher and Wagner (1989) that measures individuals' chronic construal level as a personality trait, they have demonstrated that collectivist culture such as Chinese people are associated with higher construal levels compared to individualist culture such as Americans (Hong & Lee, 2010). This implies that Chinese may construe information more abstractly and high-level than Americans. Extant cross-cultural research also suggests that East Asians process information at a more holistic level than North Americans (Nisbett et al. 2001). They found that East Asians will process information by *"attending to the entire field and assigning causality to it, making relatively little use of categories and formal logic, and relying on dialectical reasoning"* whereas North Americans are *"more analytic, paying attention primarily to the object and the categories to which it belongs and using rules, including formal logic, to understand its behavior."*

Relating cultural characteristics to the effects of social popularity, Bond and Smith (1996) have found that collectivist people tend to be more attentive and sensitive to others' information and are more likely to follow others than individualistic countries. In collectivist cultures, high-level construals make people attribute greater value to group decisions than individual decisions (Hofstede, 1980). Consistent with this, Loh and Arahal have showed that the Singapore stock market, a collectivist culture, herds significantly more than the U.S. market, an individualist one.

2.4.2 High and low-context cultures

A related dimension that attempts to distinguish culture is the *high*-context and *low*-context scale introduced by Hall (1976). It can also be viewed as a sub-dimension of the individualism/collectivism difference, which focuses particularly on the way people communicate. Low-context communication, i.e., explicit verbal communication, is a characteristic of people in individualistic cultures; whereas high-context communication, i.e., indirect style of communication, is a characteristic of people in collectivistic cultures (de Mooij and Hofstede, 2010).

Specifically, *context* refers to the information that surrounds an *event*, i.e., the information that "is inextricably bound up with the meaning of that event". The proportion in which *events* and *context* combine together to produce a given meaning depends on culture. Some culture prefer to communicate explicitly, directly and unambiguously where the exact wording is important (low-context), whereas other ones prefer a more nonverbal mode of communication where the context of the messages may be more important than words themselves (high-context). Most Asian cultures prefer high-context communication, whereas most Western cultures prefer low-context communication. This difference is exhibited in consumers' reactions to advertising strategies. Low-context cultures tend to prefer a persuasion approach by presenting direct information such as testimonials and demonstrations, whereas high-context ones tend to favor a more indirect approach such as an involvement approach that tries to build relationships between consumers. This is because in individualistic cultures (low-context), parties of transactions want to get to the point fast whereas in collectivistic cultures (high-context), it is necessary to build a relationship and trust between parties (de Mooij and Hofstede, 2010). Applying this cultural characteristic to scarcity-based advertising context, Jung and Kellaris (2004) argue that as scarcity-related strategies are considered direct promotional cues that constrain people's actual purchase opportunities, they tend to be more effective

for people from low-context cultures. In other words, people from low-context culture will be more likely to react quickly and automatically to scarce deals, whereas those from high-context cultures are more likely to narrow their attention to the scarce deals first while approaching the decisions in a more thoughtful way rather than jumping to decisions.

3 HYPOTHESES DEVELOPMENT

This research investigates the effects of product social popularity and deal scarcity on consumers' purchase intention, and how their influence will differ across cultures.

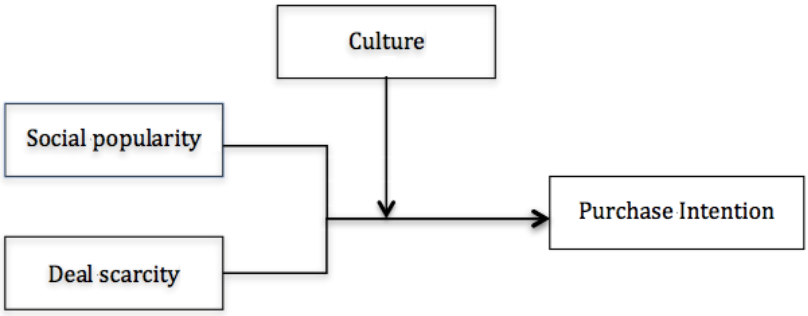

Figure 1. Research model

According to research on cultural characteristics, people from different culture tend to adopt different ways of construing self and surrounding objects. Specifically, consumers from collectivist cultures tend to adopt a naturally higher-level information construal as compared to those from individualist cultures, and thus attribute greater value to others' decisions rather than private information (Hofstede, 1980). Hence, they are more likely to herd. Consumers from individualist culture, on the contrary, will tend to have a lower-level thinking and tend to value autonomous thinking. Since people always put more weight on the type of information that matches their levels of construal (Liberman and Trope 1998; Thomas et al. 2005), social popularity information which signals the value and desirability of goods based on others' behavior and is thus a typically high-level cue should exert a stronger influence on consumers from collectivist cultures than those from individualists culture (Hong & Lee, 2010; Nisbett et al, 2001). In other words, there is a match between the construal level of information carried by social popularity and the natural construal level of people. Accordingly, we expect that high social popularity will be more effective in shaping the judgment of members from collectivist cultures than those from individualist cultures.

However, if the congruency of information cues and people's mental construal determines the impact of information cues on consumers' purchase intentions, it is possible to strengthen or weaken such an impact by varying the degree of congruency. In other words, if people's construal level is changed, the effects of social popularity cues might differ accordingly. As we have mentioned previously, consumers' information processing styles may be changed because of scarcity-related cues during the course of decision making, i.e., scarcity information may prompt more concrete processing or more abstract and heuristic thinking depending on different situations (e.g., Brannon and Brock 2001; Marguc et al. 2011).

In particular, previous studies have shown that people from different culture tend to process scarcity cues differently (Jung & Kellaris, 2004). Due to westerns' low-level information construal and the immediate fear of losing the deal as induced by the direct scarcity-related promotion style, scarcity cues will effectively arouse western consumers and prompt them to accelerate the purchases. Such arousal is likely to interfere with users' ability to process information concretely and lead to a relatively thoughtless and automatic responses focusing on information that directly identifies the core value and meaning of products. Accordingly, social popularity information, as a high-level cue that signals product desirability will become more influential for westerner consumers in this case. In other words, westerners are more likely to herd as the deal is about to expire. On the contrary, high-

context Eastern cultures with a natural high-level information construal will react to direct promotional information such as scarcity cues differently. Instead of being immediately aroused by such promotion cue and prompted to make quick decisions, they may tend to narrow their attention to the scarce products first and adopt a more focused and concrete processing style in decision making. In other words, for Eastern cultures, scarcity will prompt them to adapt to a lower construal level thinking and evaluate the scarce products more concretely. This change in processing style may weaken the influence of social popularity and direct consumers to pay attention to other specific product information. Formally, we propose:

H1: "For consumers from Western culture, there will be a positive interaction effect between social popularity and deal scarcity on consumers' purchase intentions, such that the effect of social popularity will be stronger when deal scarcity is higher."

H2: "For consumers from Eastern culture, there will be a negative interaction effect between social popularity and deal scarcity on consumers' purchase intentions, such that the effect of social popularity will be weakened when deal scarcity is higher."

4 RESEARCH METHODOLOGY

4.1 Design

The hypotheses will be tested by means of a lab experiment with the use of a 2 (low/high popularity) x 2 (low/high scarcity) x 2 (culture: Chinese/American) between-subject design. Students in a university in China and in US will be recruited to represent Eastern and Western culture respectively. Participants will be presented with a shopping website that we designed for the experiment and be asked to browse a list of 10 backpacks. Since backpacks are common products for the majority of students, the task of inspecting and considering purchase of backpacks represented a realistic scenario for student subjects. In particular, ten backpacks, similar in terms of the price level and users' perceived attractiveness based on a preliminary test, will be featured on a product-listing page. A hypothesized brand name was associated with the products to avoid the potential confounding effects of prior brand involvement. Information presented for each product on the listing page included a picture, product name, past sales of the product (i.e., social popularity), and a dynamically indicated time to deal expiration (i.e., deal scarcity). A target product was selected among the ten, of which the levels of social popularity and deal scarcity are manipulated. The position of the target product on the product list page will be randomized.

The number of consumers that have already purchased the product will represent social popularity, with 2 buyers indicating low popularity (LP) and 223 buyers indicating high popularity (HP). Deal scarcity will be manipulated based on the remaining time before the promotional offer expires, with 12 days left representing low deal scarcity (LS) and 23 minutes left representing high deal scarcity (HS). The information on the experimental page will be organized in a way that can reproduce real shopping environments such as e-commerce platforms.

4.2 Procedures

Subjects will be recruited from a university in China and in the US. They will be randomly assigned to one of the 4 conditions. They will be instructed to browse a list of products on a webpage and then asked to complete a questionnaire. In the first section of the questionnaire, they will have to indicate their top three choices in the order of their preferences, and also their level of purchase intention for several products on the listing page including the target product. Subjects' intention to purchase the target product was used as the dependent variable and was measured by five items in a 7-point Likert-type scale (7 = *strongly agree*, 1 = *strongly disagree*).

Participants will also be asked to rate their perceived social popularity and deal scarcity of the target product to check the manipulation. In the second section, standard demographic measures (sex, age,

nationality) and cultural items based on most used scales in cultural research. Measurements of individualism/collectivism at the individual level are adapted from Hui (1984) and Triandis and Gelfand (1998). Items on high/low context culture at an individual level are adapted from Ohashi's (2000) and Richardson & Smith (2007).

5 IMPLICATIONS

This research tries to contribute to extant literature on multiple fronts. It aims to explore cross-cultural differences in the combined effect of social popularity and deal scarcity on consumers' behavior. Prior research shows that people focus more on the desirability of outcomes (social popularity) when they have a more abstract mind-set but place more emphasis on the feasibility of outcomes (deal scarcity) when they have a concrete mind-set (Trope and Liberman 1998). This research then tries to shed light on our understanding of construal level theory by examining how people from different culture, who have different self-construals, react to these two different cues. Moreover, our findings will extend the herd behavior and the scarcity literature by looking into cultural differences in the context of e-commerce shopping websites. Prior findings have proven their effects separately on consumer behavior, but a very few have determined their combined influence on consumers from different cultures.

Finally, this research will offer practical implications for marketers designing shopping websites. In developing their international e-commerce platforms, they would highlight the social popularity of a product or the time-to-expiration of a deal differently across cultures. By doing so, they would maximize their chances of getting the product purchased.

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