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Effects of Social Comparison on Online Purchasing Behavior

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Abstract

The rapid growth in online sales shows that online purchase has become a mainstream for modern consumers to acquire goods and services. In this research, we propose to use Prospect Theory as the theoretical basis to account for consumers' psychological states in an online purchasing environment. In particular, we aim to empirically investigate whether social comparison acts as an essential factor that impacts consumers' online purchasing behavior. Two experiments are conducted for this purpose. The first experiment is to examine how the effect of social comparison generated by friends and relatives (the physical world) impacts consumers' online purchasing behavior. The empirical results strongly support most of our hypotheses and explicitly exhibit that social comparison positively increase online willingness to buy and willingness to pay. The second experiment is to further examine the effect of online social comparison generated by unknown people (the virtual world). The results of this experiment suggest that virtual social comparison does increase online willingness to buy, even though the effects on other aspects of purchase behavior do not show.

Keyword: social comparison, online purchasing behavior

Introduction

Online purchasing behavior has received extensive attention from both industry and academia because it has become a popular purchasing trend in nowadays economy. Prior research indicates that more than 50 percent of US Internet users consume online regularly (Forrester Research, 2003). On the business side, researchers expect that 75% of US and Canadian firms will maintain or increase their e-commerce investments and anticipate that the overall e-commerce will grow 17% annually by 2008 (Gatti, 2004). All of these remarkable statistics reflect that online purchase has become a mainstream channel for consumers and e-marketers to conduct business activities.

Although the advanced information technology enables prosperous growth of online economics and more consumers to use Internet as a main purchasing channel, this widespread adoption of e-commerce does not necessarily ensure increased profitability (Janson & Cecez-Kecmanovic, 2005). Many online firms still do not completely understand online customers' needs and behavior in this relatively new purchasing channel (Constantinides, 2004; Lee, 2002). Therefore, in this research, we aim to study consumers' online purchasing decisions, such as willingness to buy and willingness to pay. In particular, we would like to investigate how social comparison, from both physical world and virtual world, affects online purchasing behavior. Although Hoch & Loewenstein (1991) has accounted for the effects of social comparison on consumers'

purchasing decisions based on Prospect theory (Kahneman & Tversky in 1979), not much empirical research has dedicated to examine its effects on the Internet. Therefore, in this research, we employ two experiments to assess the validity of Prospect theory to explain how social comparison impacts consumers' online purchasing decisions.

Literature Review

Prospect theory

Prospect Theory was originally proposed by Kahneman and Tversky in 1979. It has been widely used in numerous fields as a theoretical lens to effectively explain decision making under risk (Fox & Tversky, 1998; Hoch & Loewenstein, 1991; Leclerc, Schmitt & Dube, 1995; Paulssen et al., 2005). Decision making under risk can be viewed as making choices between prospects. These prospects are the combinations of gains or losses and their probability of occurrence. During the decision process, humans first analyze and evaluate the prospects and then choose the prospect with the highest perceived value. In short, Prospect Theory's value function is depicted based on the following three principles: 1) deviates from the reference point, and 2) the slope associated with losses is steeper than the slope associated with gains. 3) the slope is generally concave for gains and convex for losses, which makes it S-shaped (Kahneman & Tversky, 1979).

Hoch & Loewenstein (1991) extended the Prospect Theory and proposed to add the concepts of reference-point shift in to best explain the context of making purchasing decision. In the Reference-point shift model of desire, the x-axis represents consumers' willingness to buy and the y-axis refers to the utility or consumers' satisfaction level from each purchase. The value function originally proposed by Prospect Theory (in the dotted line on Figure 1) describes the situation where a consumer who would derive satisfaction from owning an object but who has not adopted the feeling of actually possessing it. In this case, the consumer perceives zero utility when no purchase is made and perceives distance D1 when the purchase is made. However, when the consumer's purchase intention gets positively affected by certain factors, his or her intention to own the object becomes strong, which means one's initial emotional state no longer stays in the neutral position. A value function that is based on this partial adaptation case is shown as the solid line on Figure 1. As compared to the no-adaptation value function, the reference point originally residing at zero has moved to the right. Since the consumer's purchase intention is strong, failure to make the purchase may cause deprivation and generates negative utility/disappointment, which is depicted in the distance D3. If a purchase is made, the utility the consumer perceives is distance D2, which contains both positive and negative utility. Based on the principles of Prospect Theory, the slope associated with the negative utility is bigger than the slope associated with the positive utility. After the reference point shifts, this principle still stays true. Thus, D3 is greater than D1. Since D2 is greater than D3, this leads to the conclusion that D2 would be greater than D1. In this way, the partial-adaptation value function mathematically explains why consumers' purchase desire is stronger after the reference point shifts as compared to before.

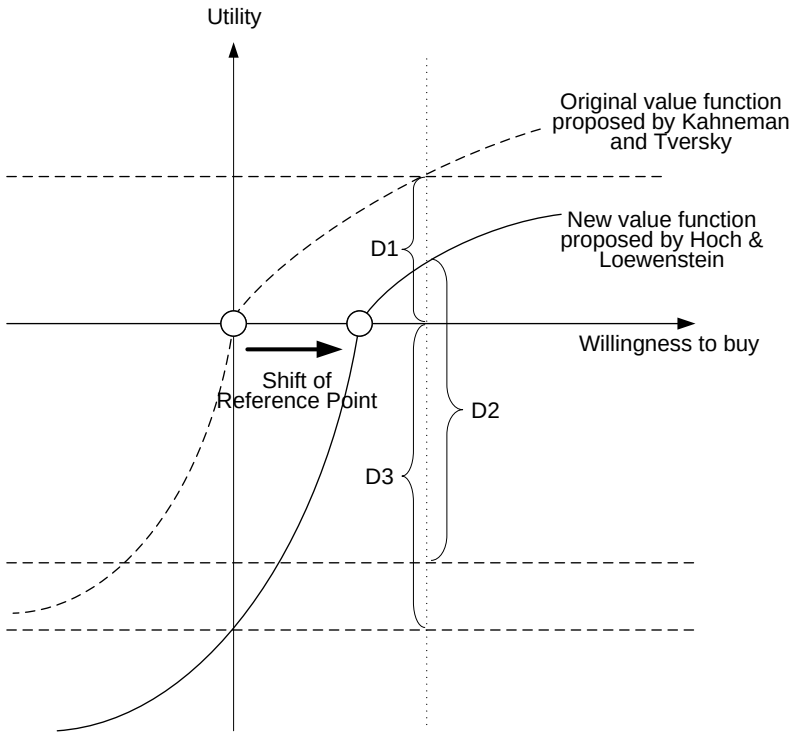

Figure 1. Reference-point shift model of desire

The effect of reference-point shift could be caused by various reasons. Hoch and Loewenstein (1991) believed that social comparison is an essential factor that could alter consumers' psychological state and causes the reference-point shift in the traditional purchasing environment. In light of the ongoing paradigm shift from traditional purchasing channels to Internet-based purchases, we attempt to employ the concept of reference-point shift extended from Prospect Theory to the context of online purchases and validate whether its explanatory power for this relatively new purchasing channel still stays legitimate. In particular, we propose to identify whether social comparison acts as an important factor that causes the effects of reference-point shift and alters consumers' online purchasing behavior.

Social Comparison

Comparing oneself with others, intentionally or unintentionally, is a pervasive social phenomenon and is an important part of human experience (Festinger, 1954; Moschis, 1976; Suls & Wheeler, 2002). While comparing with others, people tend to select a person or a group to serve as a point of comparison or as a reference group (Khan & Khan, 2005; Schiffman and Kanuk, 2000). The reference group could be someone familiar, such as family and friends or someone who is not directly related, such as celebrities (Schiffman and Kanuk, 2000). According to Festinger (1954), the effect of social comparison could also be used to explain why consumers attempt to use other people/reference groups as a source of information when making the purchasing decisions (Moschis, 1976). More accurately speaking, when making the purchasing decision, people might not actively compare their choice with others but are sensitive to the social comparison cues relevant to their choices (Bearden & Rose, 1990). That is, the

effect of social comparison exists due to the fact that people are concerned or care about reactions of others/reference groups (Bearden & Rose, 1990). Prior research especially indicates that this effect plays an essential role in influencing the consumer purchasing decision and causes the result in impulsive purchases (Luo, 2005; Rook, 1987; Zhang, Prybutok, Koh, 2006). Impulsive purchase is defined as unplanned purchase and usually arises immediately upon confrontation with a certain stimulus (Kollat & Willett, 1967; Wolman, 1973). It is a spontaneous force that could suddenly drive consumes to make a great deal of purchase (Rook, 1987).

Prior research shows that consumers constantly are engaged in impulsive purchase not only in the physical stores but also on the Internet (Zhang, et. al., 2006). The advanced information technology makes the impulsive purchase even more convenient and pervasive in the online shopping environment (Hedegaard, 2000; Zhang, et. al., 2006). According to the data from a leading consulting firm, User Interface Engineering (www.uie.com, 2001), it claims that impulse purchases represent almost 40% of the money spent on e-commerce sites (Zhang, et. al., 2006). This leads us to believe that social comparison could be an essential factor that affects online shopping behavior, just as if it affects consumers' purchasing behavior in the traditional channels.

In the online shopping environment, effects of social comparison could be generated from two main sources: physical or virtual world. The effect generated from the physical world refers to the information one receives from their reference groups, including someone they are familiar or someone they don't know. On the other hand, the effect generated from the virtual world could refer to the information arranged by the e-marketers and programmed into the online purchasing environment to stimulate the impulsive purchases. Or it could generate from the online chat room or online feedback mechanism, which is formed by a group of strangers (Dellarocas, 2003). Both kinds of effects generated from different sources could be equally powerful, but not much research has focuses on this area. For the fact that more and more people use Internet as a mainstream channel to acquires goods nowadays, this convinces us that it is necessary and urgent to conduct series of research to investigate how effects of social comparison impact consumers' online purchasing behavior.

Despite the information sources, social comparison information exerts an invisible force that can either create positive or negative consumer emotions, which consequently influences the purchase of, or failure to purchase, a product. The positive or negative emotion refers to the happiness or disappointment consumers perceive if the purchase is made or not made. For example, a causal Web viewer browses through the electronic products listed on the online shopping store. He probably would not pay much attention to a typical MP3 player with only basic product specifications, unless he has specific needs. However, in the same context, if it is a MP3 that many of his friends and relatives want or is the #1 sale on the Internet, he might be attracted. In terms of overall function, this MP3 might not be different from a typical MP3 player. However, this MP3 somehow has won the unique popularity among buyers, perhaps due to its appearance or a hot current event. People who carry it in the public might receive extra attention or praise. This is the effect of social comparison and it leads people to believe that this MP3 is a

special gadget that everyone wants to possess, although it functions just like other typical MP3 players. If the product is purchased, the happiness (positive emotion) consumers perceive here was stimulated by social comparison. Much research indicates that other people's opinions and compliments could positively influence consumers' purchasing behavior (Luo, 2005). Prior research also indicates when a person is placed in a product evaluation situation where he or she is unable to adequately assess the characteristics of the product from direct observation and contact; he will view the reactions of others as evidence about the "true" nature of the product (Burnkrant & Cousineau, 1975). This description perfectly matches with the case of online purchase because consumers could not physically inspect or touch the online product. Therefore, it is logical to infer that if many of one's friends in the physical world have purchased an object and all of them have positive comments about it, one's desire to purchase the same object online may be positively influenced (Loewenstein, 1991). Or when performing the online shopping, one notices the purchase number next to the product keeps increasing rapidly; consumers' intention to purchase the product may be affected positively. The stronger intention one experiences to purchase the object, the more deprivation one feels when the object cannot be purchased (Hoch & Loewenstein, 1991). The deprivation here refers to the disappointment (negative emotion) consumers perceive, which was stimulated by social comparison, if the product is not purchased. In this case, only a quick purchase/consumption could quell the feeling of deprivation (Loewenstein, 1988). This means, consumers' willingness to buy is relatively high, which often would cause the result of impulsive purchase. Based on the above inference, we have our hypotheses generated. Since we want to compare effects of online social comparison generated from different sources, we made some distinctions for our hypotheses in below. In particular, we focus only on two sources in this stage of research: 1) Social comparison generated by friends and relatives in the physical world. 2) Social comparison generated by unknown people in the virtual world.

H 1A: Perceived happiness of owning a product is higher in the physical social comparison group than in the non-social comparison group.

H 1B: Perceived happiness of owning a product is higher in the virtual social comparison group than in the non-social comparison group.

H 2A: Perceived disappointment of not owning a product is higher in the physical social comparison group than in the non-social comparison group.

H 2B: Perceived disappointment of not owning a product is higher in the virtual social comparison group than in the non-social comparison group.

H 3A: Willingness to buy a product is higher in the physical social comparison group than in the non-social comparison group.

H 3B: Willingness to buy a product is higher in the virtual social comparison group than in the non-social comparison group.

Once the purchase intention arises, consumers next decide whether to actually make the purchase by weighting the costs and benefits based on consumers' subjective view (Hoch & Loewenstein, 1991). According to Thaler's research in 1985, he argues that individuals perceive money to be an abstract good, and individuals may consistently differ in their judgments regarding the various uses of money. This suggests people subjectively decide how much money to spend to exchange the outcome they perceive is worthy. If consumers possess strong purchase desire to a specific product and perceive the product value exceeds the product costs, both in an economic and psychological sense, it is logical to infer that they would be willing to pay more to acquire what they perceive is valuable. Therefore, we hypothesize:

> H 4A: Willingness to pay for a product is higher in the physical social comparison group than in the non-social comparison group.
>
> H 4B: Willingness to pay for a product is higher in the virtual social comparison group than in the non-social comparison group.

Experiment 1: Effects of Physical Social Comparison

Experimental Design and Procedure of Experiment 1

The purpose of this experiment is to examine how social comparison generated from friends and relatives influences consumers' psychological states and online purchasing behavior. The independent variable is social comparison, with two levels (social vs. no social baseline conditions). The dependent variables are disappointment, happiness, willingness to buy and willingness to pay. The independent variable is a between subjects, fixed variable. Experiment 1 was performed in a laboratory context located at National Taiwan University. Questionnaires were distributed to 49 volunteered students and each of them was paid 200 NT dollars after completing the experiment. Subjects were randomly assigned to one of the two groups: the baseline group (24 subjects) and the social comparison group (25 subjects). In the baseline condition, the scenario only described the purchasing purpose, but did not mention other people's purchasing behavior. On the other hand, the scenarios of the social comparison condition described purchase purpose as well as other people's purchasing behavior. Note that, in this experiment, "other people" in the scenarios are all people close to the decision maker, such as friends, classmates or family members. For the scenarios of social comparison, the passage first described that many of their friends or relatives have purchased the product and they all have positive comments about it. After reading the scenario, subjects are presented with the outline of product specifications and required to answers the four questions after each of the 12 scenarios. The variable of social comparison is fixed variable, and scenario is random variable. Therefore, F' ratios, instead of F ratios are calculated to test the effects for the variable of social comparison.

Test Materials and Subjects of Experiment 1

The products selected for the experiment were carefully evaluated whether they are well-suited for the online purchasing environment (Table 1). A scenario involving real-life

online purchasing decisions were constructed for each of the product, and the subjects were asked to browse the product information online in order to make the purchase decision. After browsing, all the subjects were asked to answer the following four questions for each of the 12 scenario. These four questions were the measurements of the dependent variables: disappointment level, happiness level, willingness to buy, and willingness to pay

1. Assuming you did not have this product described in the scenario, please self-evaluate your disappointment level if you did not own the product on a range of 1 to 100.
2. In the same context, please self-evaluate your happiness level if you owned the product on a range of 1 to 100.
3. Please self-evaluate your willingness level to purchase the product on a range of 1 to 100.
4. Please offer a price that you are willing to pay for the product.

Table 1. *12 selected products for the experiment*

Index	**Selected Items**	**Index**	**Selected Items**
1	MP3 Player	7	Song
2	Bed Sheet Set	8	Airline Ticket
3	Computer Game	9	Hotel Reservation
4	Online Image Gallary	10	Travel Planning Package
5	eCard	11	Movie
6	Computer Software	12	eLearning Video

Results of Experiment 1

The data were analyzed using the SAS 9.1.3. Given that the willingness to pay of the 12 products vary very much, the variance in the products of higher values might override that of lower prices. In order to make sure each product has the same chance in contribution of variances, we normalized the prices with the rescale technique provided in SAS, such that the prices of each product ranged from 1 to 100. The average responses for each of the four dependent variables are shown in Table 2.

Table 2. *Means and standard deviations of disappointment, happiness, willingness to buy and willingness to pay in the social and baseline group*

Social comparison	Disappointment	Happiness	Willingness to buy	Willingness to pay
Social	42.50 (30.49)	63.83(27.95)	44.25(34.45)	23.09(26.41)
Non-social	27.58 (29.50)	53.83(32.84)	32.35(30.69)	17.04(23.82)

The numbers in parentheses are standard deviations.

Multivariate analysis of variance (MANOVA) was first performed to determine whether the four dependent variables, disappointment level, happiness level, willingness to buy,

and willingness to pay, were impacted by the independent variable. The results show the overall impact is significant (Wilks' Lambda = 0.20, $F(4, 8) = 8.13$, $p < 0.01$). In order to examine whether the effect is contributed by one specific dependent variable, analysis of variance between groups (ANOVA) is performed to observe the relationship between each dependent variable and social comparison. Subjects in the social comparison group felt a significantly larger degree of disappointment (42.50 vs. 27.58) when they can not own the target product ($F'(1, 47) = 7.00$, $MSe = 4517.11$, $p < .01$). Moreover, subjects in the social group feel happier than their counterparts in the baseline group when they can acquire the product (63.97 vs. 53.83, $F'(1, 44) = 4.25$, $MSe = 3441.42$, $p < .05$). Subjects in the social comparison group have a higher level of willingness to buy than that in the baseline group (44.25 vs. 32.35; $F'(1, 42) = 5.28$, $MSe = 3817.95$, $p < .03$). Lastly, subjects in the social group are willing to pay a higher price to purchase the product than the subjects in the non-social group (23.09 v.s. 17.03$F'(1, 35) = 3.12$, $MSe = 1674.33$, $p < .08$). Although the difference is not significant at the level of .05, it is significant at the level of .1. Hypothesis 1A, 2A, and 3A are strongly supported. The experimental results consistently show that social comparison does create a significant impact on the respondents' psychological states (i.e. disappointment and happiness) and increase their impulsiveness to buy the target product, as predicted by Prospect theory.

Worth mentioning is the value function we depicted based on our experimental data. We depicted two value functions using the experimental results and following the fundamental rules of Prospect Theory; one represents the non-social group and the other represents the social group. The two major values we used to depict the value functions are the mean of disappointment level and happiness level from the non-social and the social group; the disappointment level refers to the negative utility respondents perceive when they fail to purchase the product online; the happiness level refers to the total utility respondents perceive when they purchase the product online, which includes both positive and negative utility.

As shown in the Table 2, the mean of the disappointment level for the non-social group (baseline) is 27. This implies that our subjects did not take zero as their initial reference point. If the negative utility people perceive when the purchase is not made is 27 and the overall utility people perceive when the purchase is made is 53, then the pure positive utility people perceive when the purchase is made should be 26 (53 – 27). Similar to the social group, if the negative utility people perceive is 42 and the overall utility people perceive is 63, then the pure positive utility should be 21 (63 – 42). With the influence of social comparison, the means of disappointment level and happiness level increase dramatically. According to Prospect theory, purchase intention will become much stronger and this is exactly what we found in the empirical results of experiment 1. The value functions of the social and non-social groups are displayed in Figure 2.

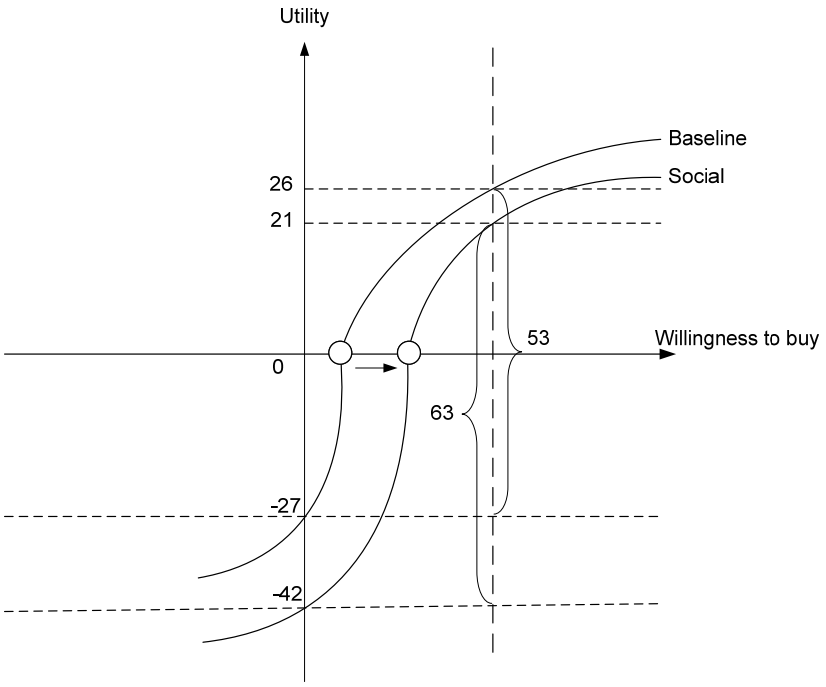

Figure 2. Value functions of social and non-social subjects in Experiment 1

Experiment 2: Effects of Virtual Social Comparison

Experimental design, procedure and subjects of Experiment 2

Experiment 1 assesses how online purchasing behavior is affected by social comparison generated by people around decision makers. As we know, people purchase products online might be exposed to information regarding purchases and attitudes of other people who are unknown to them. Therefore, experiment 2 was conducted to investigate if the impacts of social comparison still exist when the social information comes from people who do not belong to our virtual social environment. Similar to Experiment 1, the independent variable is social comparison, with three levels (physical social, virtual social and non-social baseline conditions). The dependent variables are disappointment, happiness, willingness to buy and willingness to pay. Experiment 2 was performed in an online environment. 80 people who study or work in different industries responded to our online advertisement and voluntarily participated in this experiment. All the subjects received 200 NT dollars after completing the online experiment. Subjects were also randomly assigned to baseline and social groups. The major difference in this experiment is that there are two social groups: physical social group (effect generated by friends and relatives) and virtual social group (effect generated by unknown people online). The setting and test materials were exactly the same as the ones in experiment 1. As for the virtual social group, the social information was displayed in an animated number icon that represents the dynamically changing number of purchase for the target product. If the number on the animated icon appears to grow quickly, this implies that the product is a popular choice for people who shop online.

Results of Experiment 2

Table 3 demonstrates the results of Experiment 2, showing the average numbers of disappointment, happiness, willingness to buy and willingness to pay in the baseline and the two social comparison groups. The MANONA Wilks' Lambda analysis suggests that the difference between the baseline and the two social comparison groups is significant (= 0.20, $F(8, 38) = 7.02$, $p < 0.01$). Both social groups reported a higher level of disappointment (44.28 for physical social and 39.17 for virtual social) than the baseline group (32.20; $F'(2, 48) = 2.50$, $MSe = 11923.51$, $p < .09$) when they do not own the target products. Even though the difference is not significant, but the p value is very close to .05. Similarly, subjects in both social groups felt happier (62.33 for physical social and 61.62 for virtual social) than the subjects in the baseline group when they can acquire the products (58.05). However, the difference is not statistically significant ($F'(2, 44) = 0.42$, $MSe = 1705.31$, *n.s.*). Nevertheless, subjects in both groups of social comparison conditions are significantly more willing to buy the target products (48.61 for physical social and 49.66 for virtual social) than the non-social group (37.78, $F'(2, 42) = 3.84$, $MSe = 13907.45$, $p < .02$). Subjects in the social groups also are willing to pay a higher price (17.02 for physical social and 16.55 for virtual social) than the baseline group (13.79). Similar to the results of Experiment 1, the results of willingness to pay is not significant ($F'(2, 35) = 1.51$, $MSe = 986.36$, *n.s.*).

Table 3. *Means and standard deviations of disappointment, happiness, willingness to buy and willingness to pay in the physical social, virtual social and baseline group*

Social comparison	Disappointment	Happiness	Willingness to buy	Willingness to pay
Social (physical)	44.28 (31.65)	62.33(33.81)	48.61(30.16)	17.02(22.11)
Social (virtual)	39.17 (33.25)	61.62(32.20)	49.66(33.44)	16.55(18.94)
Non-social	32.20 (33.22)	58.04(32.09)	37.78(30.97)	13.79(19.32)

The numbers in parentheses are standard deviations.

Hypothesis 1 B and 3B are empirically supported by the results while hypothesis 2B and 4B are not. Although the results in this experiment do not support the hypotheses as much as those in Experiment 1, the overall pattern is still replicated. That is, subjects in the social groups reveal a higher level of disappointment, happiness, willingness to buy and willingness to pay than the subjects in the non-social group. Most importantly, the overall pattern of the virtual social group is parallel to that of the physical social group. Even though only the differences of disappointment and willingness to buy are significant, it is exciting that simply providing the number of purchase by other unknown people online can induce such social comparison effects.

The value functions of both social and baseline groups in this experiment are depicted based on the results of disappointment and happiness, as shown on Figure 3. Similar to the diagram on Experiment 1, the effect of social comparison shifts the social group value function to the right in comparison to the case without. For both value functions, the

slope associated with the positive utility is much smaller than the one associated with the negative utility.

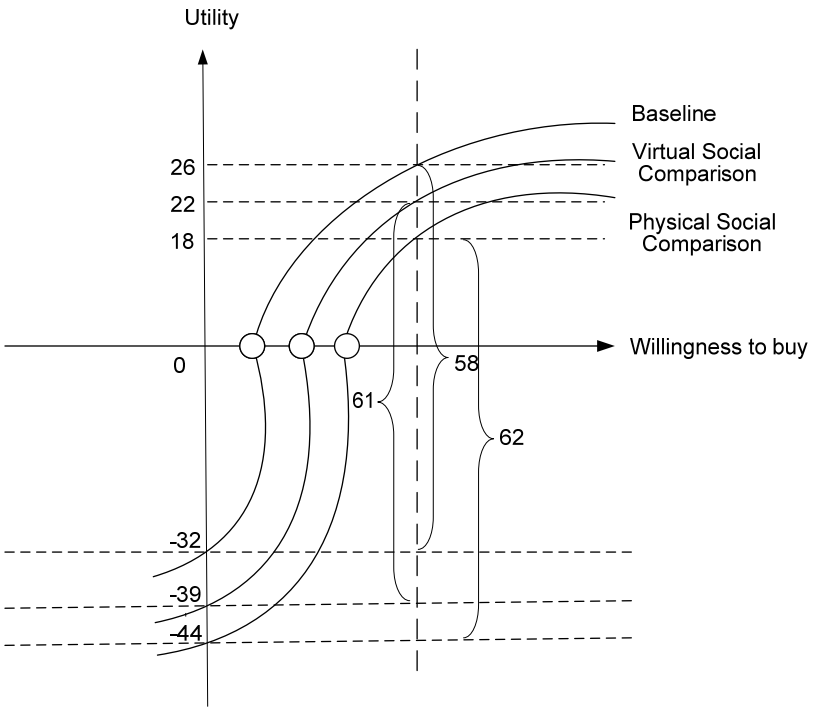

Figure 3. Value function of both social comparison subjects and baseline subjects in Experiment 2.

Conclusions and Discussions

Conclusions

In conclusion, this research empirically demonstrates how we can use Prospect Theory to explain consumers' psychological states when purchasing online. In particular, the empirical results suggest that social comparison, possibly generated from physical and virtual worlds, could induce shift of reference point and hence increases drive to acquire the target products. In our research, we took a step in this direction to examine the effect of social comparison in an online purchasing environment. Most importantly, the value function diagram we depicted based on the experimental results validates the concept of reference-point shift based on Prospect theory. It also demonstrates how social comparison shifts the reference point to the right and alters consumers' psychological states in an online purchasing environment.

Discussions

One of the key implications here is that the total utility of a purchase could be driven by both positive and negative emotions (i.e. disappointment and happiness). In fact, judging by the value functions we depicted based on our empirical results, the slope associated with the negative utility is much bigger than the one associated with the positive utility. This implies that the deprivation (i.e. disappointment or deprivation) consumers perceive when the purchase is not made is far much stronger than the happiness consumers

perceive when the purchase is made. Given the fact that humans are social in nature, such kind of negative emotion could be easily induced by the effect of social comparison. Our empirical results in experiment 1 show when many of one's friends and relatives own an object, one's emotion and desire to own the same object gets affected. The results evidently demonstrate that the effect of social comparison could create a significant influence on consumers' online purchasing behavior. Although this effect does not show as strong in the experiment 2 when the effect of social comparison is generated by unknown people in the virtual world, the result still appears that consumers' willingness to buy the object increases dramatically when many people (strangers) attempt to purchase the same object.

As we can see, both kinds of social comparison do not significantly increase willingness to pay in both experiments. It is speculated that price transparency is pretty high nowadays, especially after the rise of e-commerce. Given that consumers could easily acquire product prices online, the space to increase willingness to pay is hence limited. Therefore, hypothesis 2A is supported in Experiment 1, hypothesis 2B is not supported in Experiment 2 and hypothesis 1B is only significant at the level of .1. The reasons why the results of Experiment 2 are not as strong as we expected are due to possible distractions and low level of involvement of participants in online data collection. The other reason could be the effect of the primitive form of virtual social comparison (i.e. simply placing the number of purchase from online purchasers next to the product) is not strong enough to induce all effects of social comparisons. Therefore, how to utilize information technology to create virtual social comparison should be further pursued in the future research.

Managerial Implications, Limitations and Future Research

Managerial implications

The empirical results suggest that there are two ways to induce consumers' purchase desire and impulsive purchase online: physical social comparison and virtual social comparison. The effects of physical social comparison can be retained in the online context. Moreover, a very primitive form of virtual social comparison (i.e. simply placing the number of purchase from online purchasers next to the product) can significantly increase consumers' willingness to buy. Since consumers are not sure about the source of the information, they might have doubt about the information, which would diminish the effect of social comparison. We suggest that e-markets could leverage the lesson we learned from these two experiments and try to find a way to combine the effects of both kinds of social comparison. For example, blogs, which is an interactive media that are used to connect friends known from both the physical world and the virtual world, could also be leveraged to manipulate the social effect (www.atsf.co.uk; Lawson-Borders & Kirk, 2005). Moreover, when promoting the online products, e-marketers could include not only the purchase information but also the feedback mechanism to increase the information credibility. Although the online feedback mechanism is also formed by a group of strangers, they all share one identical goal, which is to exchange product information and purchase experience between consumers and to ensure a safe trading environment (Dellarocas, 2003). Once consumers browse the feedback website more

frequently and become familiar with at least some of the message posters, the members in this feedback mechanism are no longer strangers but friends to each other. This means, the effect of social comparison would become much stronger and the information is more credible.

Limitations

Some limitations of this study should be noted. First, the empirical results in Experiment 1 were collected from a student sample in the laboratory context. Thus, external validity could be an issue when interpreting our findings. However, the fact that students do represent a strong online purchase force and the consistent responses we received from the experiment leads us to believe that the results do uncover some aspects of online purchasing behavior, at least, of younger people. In addition, the data in Experiment 2 that were collected online from people who study or work in different industries, once again demonstrates similar responding trends, Second, the way of collecting data in Experiment 2 could be a limitation as well even though it solve the problem of external validity. People answering questionnaires online could be distracted by their environment and hence are not as focused and involved as people fulfilling their tasks in the controlled environment of lab. Therefore, internal validity might suffer as discussed in the previous text.

Future Research

As we know, the trend of social computing is rising in these days. People are using the Internet as another channel to meet people and look for perspectives and opinions of others. Therefore, the channel of the Internet does not only reveal quantitative information such as the number of purchase manipulated in this research, it can also convey qualitative information such as opinions and comments. Our next step is to investigate the social comparison effects generated from the online community, such as blog or feedback mechanism. Moreover, how to effectively integrate the advanced information technology with the effect of social comparison in an online purchasing environment will be the focus of our next step of research. We are also interested in investigating how social comparison effect relates to different kinds of product information (consummatory and nonconsummatory) and product categories (search and experience goods). In addition, it is interesting to study if factors other than social comparison can also induce shift of reference point. Based on Hoch & Loewenstien's study in 1991, they indicated that three factors: temporal proximity, physical proximity and social comparison could increase consumers' drive to consume the goods. As we know that one advantage of the Internet is its ability to conquer the limits of time and space. So, one possible future research is to assess if temporal proximity and physical proximity induced by the Internet could also help to shift the reference point and enhance consumers' desire to own the products. All these research should be further pursued to fully understand the online purchasing behavior.

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