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Faculteit der Sociale Wetenschappen

Do norms or traits more greatly influence online purchasing decisions?

Product information inferences in an online environment

Zhen Luo

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Faculty of Social and Behavioral Sciences – Leiden University
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Student number: s1541110
First examiner of the university: Lasana Harris……..……
Second examiner of the university: ……..…….
(Opt.) External supervisor: …….

Abstract

In this study, we examine the influences of brand personality and social information on consumers' online purchasing decisions. We asked participants to choose between hypothetical products with obvious brand personality (high-trait) and products with strong social support (high-norm), and indicate how much they are willing to pay for each product. The results show that consumers' purchase intention is biased for high-trait products, and consumers are willing to pay more for high-trait products. Risk aversion is positively related to purchase intention for high-norm products. Additionally, we found no evidence that hedonic and utilitarian motivation impact purchase intention or willingness-to-pay. At the last, we discuss the possible explanations and implications for future research.

Keywords: inference, brand personality, social information, purchase intention, willingness to pay

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Online shopping has not only contributed a lot to the global economy but has also been transforming the way people purchase goods and services. Fifty-eight percent of internet users rely on the internet for the purpose of shopping (Horrigan, 2010). And the global business-to-consumer (B2C) e-commerce sales are expected to continue in 2015 at a growth rate of 18.0%, resulting in a global B2C e-commerce turnover of $2,251bn (Ecommerce-Europe 2014). Like traditional shoppers, online consumers have the need to search related product information before they make purchasing decisions (Mowen & Minor, 1998). However, online shoppers differ from traditional shoppers because they cannot interact with actual products, making gathering relevant product information more important. Interestingly, one of the biggest reasons why more and more people choose to shop online is that despite the lack of interaction with the tangible product, online shops offer more information, which makes it easier to research and compare products (Klein, 1998). Even so, product information is still often not enough to form purchase intentions. As a result, consumers are most likely to make inferences that go beyond the given information in order to form purchase intentions (Gunasti & Ross, 2008; Kardes, Posavac, & Cronley, 2004).

Harris (1991) defined inference as involving the process of generating a proposition that goes beyond the given information. Burke (1996) indicates that consumers make inferences even when facing full product information. Thus, it is fair to say that online consumers often make product information inferences. But what information do consumers base product inferences upon? Generally, online consumers can find both brand personality (trait information) and social information (norm information) easily online. Being aware of two kinds of information, it is

interesting to consider which information consumers prefer and under what circumstances this takes place. Therefore, the first aim of this study is to explore which type of information has a stronger influence on consumers' purchase intention in an online environment.

In addition, there are other factors that can influence purchase intention. Consumers form purchase intention from different motivations, for example, from their own pleasure—a hedonic motivation (Hirschman & Holbrook, 1982)—or from some practical purposes—a utilitarian motivation (Hirschman & Holbrook, 1982). Do hedonic and utilitarian motivation have influences on purchase intention for products with different information? The second aim is to examine the role of motivation in the process of forming purchase intention. At the same time, consumers have individual differences, such as risk aversion, which refers to a preference for a sure outcome over a gamble with higher or equal expected value (Kahneman & Tversky, 1984). Consumers with high risk aversion prefer safer choice, while consumers with low risk aversion would like to take risks. The third aim is to check whether individual difference—risk aversion is related with purchase intention for products with certain information.

Brand Personality and Product Inference

Brand personality is widely used and studied in consumer psychology. It is defined as the personality traits associated with a brand and tends to serve a symbolic or self-expressive function (Keller, 1993). For example, Coca-Cola is associated with happiness, refreshment, and sharing, while Starbucks is connected with a refreshing escape, freshness, warmth, and comfort. Aaker (1996) suggests that consumers may infer brand personality from the human characteristics associated with typical brand users, as well as characteristics associated with company employees, top managers, and brand endorsers. With the increasing use of World Wide Web as a medium, marketers realize the importance of online marketing, especially online

branding (Rowley, 2004). Consumers can easily find product personality information in the official website, social media and online advertisements.

There are two trends that make marketers view brand personality as a key way to differentiate a brand in a certain product category. First, attribute-based and functional features can be easily copied and soon lose their competitive advantage, while brands differentiated on the basis of image attributes, such as brand personality, appear more resilient to these threats (Aaker, 1996). Second, a brand could be recognized among a wide range of products (Court et al., 1997), and the brand impression could be extended across different product types (Loken et al., 2007). Hence, brand personalities help marketers compete by providing a complete value propositions beyond functional benefits, thus allowing them to extend the brand to new products. It is worthwhile to obtain a greater understanding of brand personality inference in an online environment.

Academic research provides several reasons to support the argument that consumers may have biases towards products with obvious brand personality information. Puzakova, Kwak, and Taylor (2013) mention that the similarity between self-traits and brand personality determines the way consumers use brand information. It is possible that consumers are more likely to buy products with a similar brand personality to their own. At the same time, it has been argued that brand personality is positively related to the perceived quality, which refers to consumers' intangible perceptions or judgements of the overall quality or superiority of a product or service —their overall feeling about the brand (Zeithaml, 1988). For example, if a food brand is featured as "organic", consumers may infer its product to be healthy, high-quality, and even more expensive. As a result, consumers may base their purchase intention upon the brand. Consumers

who have limited budget may not choose it, whereas consumers who care product quality may choose it.

E-Word-of-Mouth and Product Inference

Research on how social information influences on consumers has typically been subsumed under the informational social influence, referring to an individual's acceptance of information from others with whom he or she interacts (Cohen & Golden 1972). Rashotte (2009) suggests that people combine their ideas and the opinions of others in their decision-making. Lee, Shi, Cheung, Lim, and Sia (2011) find that positive social influence reinforces the relationship between the beliefs about and the attitude toward online shopping, as well as the relationship between the attitude and purchase intention to the product. Thus, informational social influence may have an impact on customers' intention to buy by enhancing consumers' confidence in their preferences and beliefs toward the product. Especially in an online environment, where potential consumers cannot interact with actual products, social information could support consumers' decision-making by providing credible information.

With the development of online rating systems, electronic word-of-mouth (e-WOM) becomes the most important social information for online consumers (Dellarocas, 2003). It is defined as any positive or negative statement made by potential, actual, or former customers about a product or company, which is available to a multitude of people and institutions via the Internet (T. Hennig-Thurau, 2003). Zhu and Huberman (2014) asked participants to indicate their preference between two items and then asked them again with the knowledge of others' preference. The result shows that other people's opinions significantly sway people's own online choice. The online feedback mechanisms, like ranking, rating, review, and recommendation, play important roles in e-WOM and provide social information for potential consumers. Senecal and

Nantel (2004) find that consumers who consulted product recommendations selected recommended products twice as often as consumers who did not consult recommendations. Also, B. Bickart (2001) finds that the information provided by users is more appealing and meaningful to the potential customers than that of the salesperson or marketers. It is obvious that positive feedback could help to increase product's attractiveness, while negative feedback makes a product less attractive.

Research about e-WOM information can be classified into two research types: market- and individual-level (Lee & Lee, 2009). On one hand, market-level e-WOM is related to other market parameters, such as price and sales, and generally analyzed by using an econometric approach (Ba & Pavlou, 2002). On the other hand, when e-WOM is viewed as an individual-level parameter, it should be related to other individual-level parameters, such as trust and purchase intention. In our study, e-WOM is viewed as individual-level parameter and group purchase intention is chosen as the social information.

Other factors

Purchasing behaviors result from different reasons. The reason people go shopping could be that they simply need some products, or they want to kill time, or they just want to enjoy shopping as an experience. In consumer psychology, researchers usually classify motivation is to be utilitarian and hedonic motivation. Utilitarian motivation is defined as critical, rational, decision-effective, and goal-oriented (Hirschman & Holbrook, 1982; Batra & Ahtola, 1991). Utilitarian motivation allows shopping to start with a mission or task, and the acquired benefit depends on whether the mission is completed or not, or whether the mission is completed efficiently during the process (Batra and Ahtola, 1991; Babin et al., 1994). Hirschm and Holbrook (1982) propose the concept of hedonic motivation from a different perceptive: those

consumption behaviors in search of happiness, fantasy, awakening, sensuality, and enjoyment. The benefit of hedonic motivation is experiential and emotional. Consumers with hedonic motivation enjoy the shopping process, but may not obtain the physical objective or complete the mission.

Meanwhile, in order to investigate consumers' individual differences in using brand personality information and social information, this study will also examine the influence of risk aversion, which is known to be a strong factor that affects decision-making (Mandrik & Boa, 2005). Risk aversion has been defined as a decision maker's preference for a guaranteed outcome over a probabilistic one having an equal expected value (Qualls & Puto, 1989). Consumers who score high on risk aversion may prefer safer choice while consumers who score low in risk aversion may prefer risky choice.

Hypotheses

This study uses purchase intention and willingness-to-pay (WTP) to evaluate the influence of brand personality and social information on product inference making. And we use the terms "high-trait" and "high-norm" to represent products with obvious brand personality and strong social support. When making inferences about certain products, consumers may consider brand personality and social information together. Both of them provide an easier way for consumers to make decisions. Aaker (1997) proposes that brand personality information, used as a heuristic cue, might influence consumers' attitudes and attenuate the processing of brand attribute information under low motivation. And Rosen & Olshavsky (1987) finds that decision makers select someone to serve as a decision "surrogate" from whom the decision maker receives a recommendation as to a specific alternative. But it's difficult to predict which type of

information is more influential on purchase intention, especially when such information contradicts with each other. We propose:

H1: Participants have a preference for either high-trait products or high-norm products.

Also, we expect purchase motivation to have an impact on consumers' preference for products with different information. In order to complete a purchase mission efficiently, consumers with utilitarian motivation may prefer high-norm products rather than high-trait products because more social support suggests the product is able to fulfill practical use. However, for consumers with hedonic motivation, they may prefer high-trait products rather than high-norm products, since high-trait products are associated with more emotional experience and better quality. So we propose:

H2: Participants with utilitarian motivation prefer products with high-norm information, while participants with hedonic motivation prefer products with high-trait information.

Willingness to pay is the maximum amount an individual is willing to sacrifice to procure a good or avoid something undesirable (Hanemann, 1991). Brand personality seems to be a better excuse to pay more for a product. According to the research of Ramasesh and Tsao (2007), brand personality is positively related to the perceived quality of the product. The inferred relationship between price and perceived quality has been well-documented (Rao and Monroe, 1989), and can generally be stated that the higher the price/cost of a product, then the more likely the consumer is to perceive or infer that the product is of good quality. Though the research on the direct relationship between price/quality inference and WTP has been explored to a lesser extent, we could speculate that a higher price premium becomes justified in that the product is of better quality (workmanship, materials, taste, etc.) thereby increasing the consumer's WTP (Lichtenstein et al., 1988). We assume that high-trait products are associated with the excellent

quality product, and consumers are willing to pay more for them. However, products with high-norm information make consumers associate with reasonable price. Thus, we expect:

H3: Consumers are willing to pay more for high-trait products than high-norm products.

Furthermore, utilitarian motivation makes consumers enlarge their benefit while hedonic motivation allows consumers more emotion and experience, and less sensitiveness to price. So, we propose:

H4: Compared with consumers with utilitarian motivation, consumers with hedonic motivation are willing to pay more.

At the same time, we expect risk aversion to be related with consumers' purchase intention for high-norm products. The higher risk aversion score consumers have, the more likely they will choose a safer choice. In this case, because of stronger social support, products with high-norm information suggest a safer choice. We propose:

H5: Risk aversion score is positively related with purchase intention for high-norm products.

Method

Participants

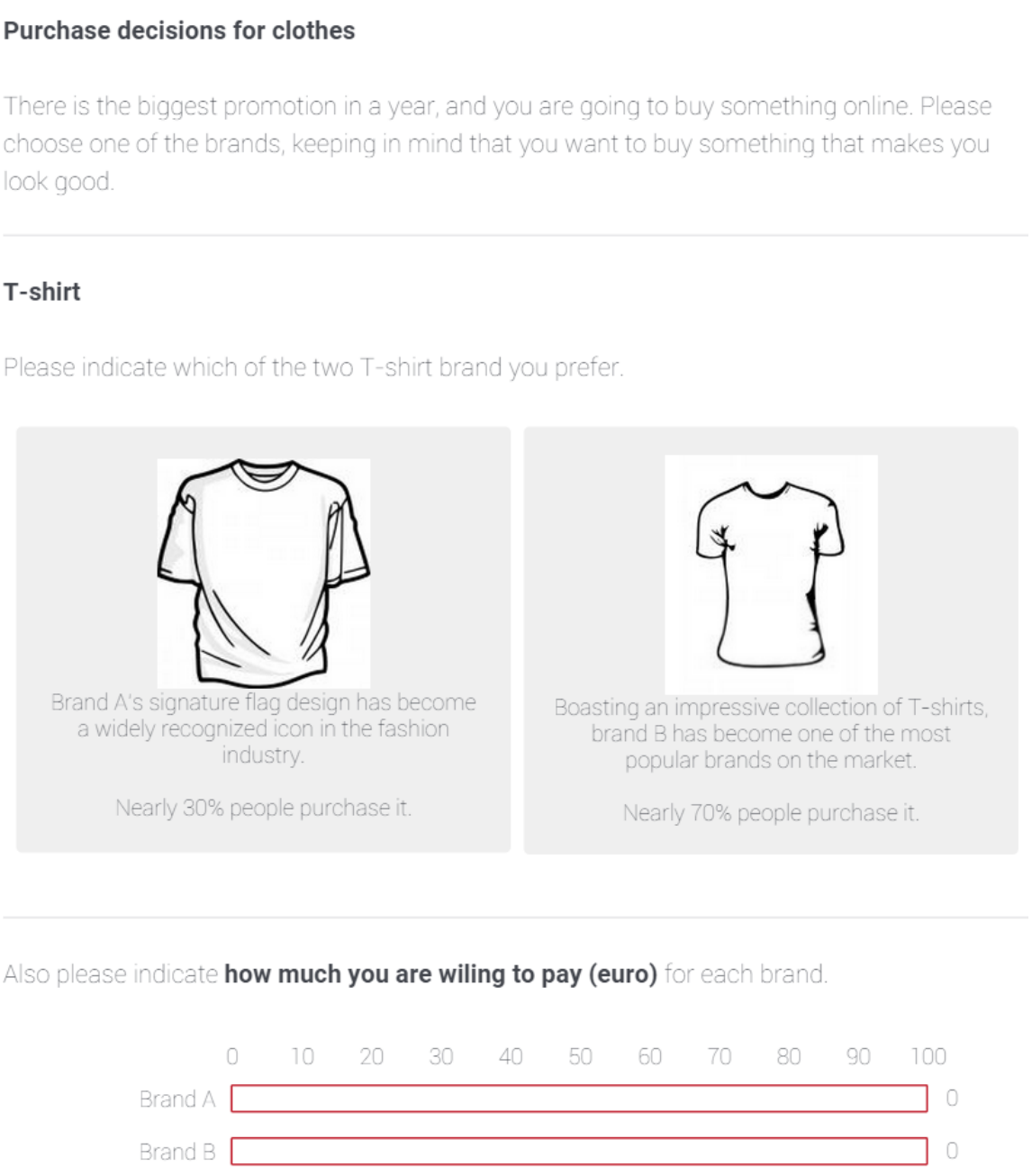
We recruited 130 participants using convenient sampling and paid each 2.50 euro for participating in this 20-minute study. One hundred and sixteen responses are valid and the valid response rate is 89.23%. The valid responses are from 41 males (35.30%) and 75 females (64.70%) participants. Their age is between 16 and 61 (M=25.33 $\pm$7.63) and most of them (86.20%) are college graduated.

Experiment design

Product information is used as a dependent variable to indicate purchase intention such that the design is 2 (purchase motivation: hedonic & utilitarian) × 3 (product category: electronics, clothing and food) within-participant design. For WTP, product information is used as an additional independent variable, so the design expands to a 2 (purchase motivation: hedonic & utilitarian) × 2 (product information: trait & norm) × 3 (product category: electronics, clothing and food) mixed design. Participants are equally distributed to have either a hedonic or utilitarian motive, and each of them is provided with trait and norm information for all product categories.

Procedure

The experiment was built online via Qualtrics. Participants were informed that the study concerned consumer decision-making in an online environment. The whole study consisted of two parts: experiment part and questionnaire part. In the experiment part, there were three product categories included in this study: food, clothing, and electronics, and brand personality for each category was healthy, trendy, and reliable respectively. There were 5 trials for each product categories. For each trail, we firstly presented purchase context to trigger participants' motivation. Then, a pair of brands was presented with a short description about brand personality (trait information) and other consumers' purchase intention (norm information). Brand A had an obvious brand personality (high-trait) but fewer people chose it, while brand B had no obvious brand personality but more people chose it (high-norm). We asked participants to make a choice between these two brands and indicate how much they are willing to pay for each of them. In the questionnaire part, individual difference data was collected, including risk aversion, age, gender, nationality, occupation, and education background. Following is an example of one trail:



Measurement

This study used General Risk Aversion scale (Mandrik & Boa, 2005) to measure risk aversion inclination. This scale consists of 6 questions (e.g., “I do not feel comfortable about taking chances’’) rated from 1 “strongly disagree” to 7 “strongly agree”. A high score means the inclination to avert risk, while a low score means the inclination to seek risk.

To check whether manipulation of purchase motivation is effective, we asked participants to indicate to which extent they made decisions based upon hedonic and utilitarian motivation, from 1 “almost never” to 5 “almost always”. Meanwhile, in order to learn more about participants’ opinion on brand personality and social information, we asked them to indicated to which extent they think brand personality and social information are useful, from 1 “not useful at all” to 7 “very useful”.

Data analysis

We use SPSS 16.0 to analyze data, and apply a significant level of $\alpha = 0.05$ to all tests. First, we check whether the manipulation of purchase motivation is effective. We conduct an independent-samples t-test to compare scores on purchase motivation for both hedonic and utilitarian groups. If the hedonic group has a significantly higher score for hedonic motivation and the utilitarian group has significantly a higher score for utilitarian motivation, the manipulation is successful.

Second, we conduct a one-sample t-test to determine if consumers are biased for either high-trait or high-norm products. We code the purchase intention for high-trait products as 1, for high-norm products as 2. If a significant difference exists, then score will be significantly above or below 1.5, allowing us to conclude that H1 is confirmed and consumers’ purchase intention is biased for either high-trait or high-norm products.

Furthermore, in order to check whether purchase motivation has an impact on purchase intention, we conduct an independent-samples t-test to compare purchase intention of hedonic and utilitarian groups. If purchase intention of two groups is significantly different, we can conclude that H2 is confirmed and purchase motivation has an impact on product information inference.

Next, we conduct a repeated measures ANOVA on participants' WTP to test the influence of product information and purchase motivation. If there is main effect for product information and participants are willing to pay more for high-trait products than high-norm products, we can conclude H3 is confirmed. If there is main effect for purchase motivation and participants with hedonic motivation are willing to pay more, then H4 is confirmed.

Finally, to check the relationship among risk aversion, purchase intention, and WTP, we conduct a correlation analysis. If there is a significant correlation between risk aversion and purchase intention for high-norm products, we can conclude that H5 is confirmed.

Results

Manipulation check

The result of an independent-samples t-test shows that there is no significant difference in the hedonic motivation scores for both hedonic (M = 3.32, SD = 0.90) and utilitarian (M = 3.51, SD = 0.88) group; t (113) = -1.13, p = 0.26. Also, there is no significant difference in the utilitarian motivation scores for both hedonic (M = 2.50, SD = 0.87) and utilitarian (M = 2.49, SD = 1.06) group; t (113) =0.05, p = 0.96. These results suggest that manipulation did not work.

Purchase intention

The result of a one-sample t-test shows that purchase intention from this sample (M = 1.45, SD = 0.25) is significantly biased toward high-trait products; t (115) = -2.11, p = 0.037. This means that participants are biased to choose high-trait products, instead of high-norm products, suggesting a preference for one form of product information. Thus, the hypothesis 1 is confirmed.

Moreover, the result of an independent-samples t-test shows that there does not exist a significant difference on purchase intention between hedonic (M = 1.41, SD = 0.23) and

utilitarian groups (M = 1.49, SD = 0.17; t (144) = -1.79, p = 0.077). This result suggests that the hedonic and utilitarian groups have the same purchase intention. However, the manipulation was not effective, so this result is not surprising and the hypothesis 2 is not confirmed.

Willingness to pay

We conduct a 2 (purchase motivation: hedonic & utilitarian) × 2 (product information: trait & norm) × 3 (product category: electronics, clothing and food) repeated measures ANOVA on participants' WTP.

Firstly, we check sphericity. There are only two levels for product information, so we do not need to worry about sphericity. And since the epsilon for product category is less than 0.75, we use Greenhouse-Geisser corrected F value. The result of repeated measures ANOVA shows that there are significant main effects for product information, F (1, 114) = 4.18, p= .043, η^2 = 0.035, and product category, F (1.04, 218.30) = 680.64, p< .001, η^2 = 0.857 (see *Table 1*), indicating that participants' WTP is significant different across product category (electronics, clothing, and food) and product information (trait and norm). Participants are willing to pay more for high-trait products (M = 122.86, SD = 4.37) than high-norm products (M = 117.06, SD = 4.48). And they are willing to pay most for electronics (M = 304.00, SD = 11.19), less for clothing (M = 54.10, SD = 2.04), and least for food (M = 1.79, SD = 0.06). There is no significant main effect for purchase motivation and any interaction (see *Table 1*).

Table 1. Repeated measures ANOVA on willingness-to-pay

Source	*df*	*F*	η^2	*p*
Purchase motivation	1	0.59	0.005	0.443
Product information	1	4.8	0.035	0.043
Product category	2	680.64	0.857	<0.001

To take a close look at consumers' WTP for each product category, we run three paired-samples t-tests on WTP. The results show that for clothing ($M_{high\text{-}trait} = 55.75$, $SD_{high\text{-}trait} = 25.22$; $M_{high\text{-}norm} = 52.48$, $SD_{high\text{-}norm} = 21.07$) and food category ($M_{high\text{-}trait} = 1.84$, $SD_{high\text{-}trait} = 0.71$; $M_{high\text{-}norm} = 1.73$, $SD_{high\text{-}norm} = 0.64$), participants are willing to pay more for high-trait products; $t_{clothing}(115) = 2.24$, $p < 0.05$; $t_{food}(115) = 2.69$, $p < 0.01$. However, for electronics ($M_{high\text{-}trait} = 311.10$, $SD_{high\text{-}trait} = 124.02$; $M_{high\text{-}norm} = 297.21$, $SD_{high\text{-}norm} = 131.45$), the difference of WTP for high-trait and –norm products is marginally significant; $t_{electronics}(115) = 1.73$, $p = 0.086$. So far, the hypothesis 3 is partially confirmed and the hypothesis 4 is not confirmed.

Correlation

The result of correlation analysis shows that there is a significant positive correlation between risk aversion and purchase intention for high-norm products; $r = 0.23$, $p = 0.015$. This result suggests that risk aversion is weakly related with the purchase intention for products with strong social support. So, hypothesis 5 is confirmed.

Other results

In the experiment, we asked participants to indicate to which extent they think brand personality and social information is useful. The result of a paired-samples t-test shows a significantly different opinion on brand personality (M=5.24, SD=1.70) and social information (M=3.57, SD=1.80); $t(114) = 8.01$, $p < 0.001$, which means participants think brand personality is much more useful than social information.

Discussion

The bias on purchase intention

As we expected, consumers' purchase intention for high-trait and high-norm products is biased in an online environment. The result indicates that consumers' purchase intention is

biased for high-trait products, which means that consumers prefer products with obvious brand personality rather than products with strong social support. It is easy to understand why purchase intention is biased because decision-makers use these two kinds of information as heuristic cues to evaluate products. But why they rely more on brand personality, but not social information? According to the short survey, we learn that consumers think brand personality is more useful than social information.

We propose two possibilities to explain this finding. Firstly, in terms of self-involvement, consumers may consider brand personality to be more relevant to themselves than social information. Brand personality is associated with human characteristics, and consumers may regard brands they like as a means of self-expression. The similarity between self-traits and brand personality determines the way consumers use brand information (Puzakova et al., 2013). Consumers may infer certain brand personality aligning with their own traits, and thus prefer products with obvious brand personality. However, social information involves little personal information, which makes consumers believe norm information is less useful and rely less on it. Secondly, brand personality is positively related to the perceived quality (Zeithaml, 1988), but social information (group purchase intention) does not reveal any relation with quality. In this case, consumers may associate obvious brand personality with better quality, and prefer products with high-trait information.

The bias on willingness-to-pay

The result suggests that consumers' WTP varies across product category and product information. In accordance with common sense, consumers are willing to pay most for electronics, less for clothing, and least for food. But why are consumers willing to pay more for high-trait products than high-norm products? Brand personality is a statement made by sellers to

guarantee consumer good-quality products. As we stated above, consumers may expect products with obvious brand personality to have better quality. And a higher price premium becomes justified in that the product is of better quality (workmanship, materials, taste, etc.) thereby increasing the consumer's WTP (Lichtenstein et al., 1988). For example, Campbell and his colleague (2014) find that a higher level of perceived price/quality inference will have a positive and direct relationship with willingness-to-pay for local food. Another possibility is that consumers are willing to pay more for what the brand personality brings to them. For example, according to the theory of costly signaling theory, the wasteful behavior may function as a reliable signal of desirable individual qualities (Zahavi & Zahavi, 1997). Consumers pay more money for a certain brand to show their resources and acquire higher status in social interaction (Nelissen & Meijers, 2010).

Among three product categories, electronics is an exception: WTP for high-trait electronics and high-norm electronics is not significant different. This may relate with the value of difference products. Consumers probably become more conservative and less willing to pay more when they need to sacrifice more to acquire certain products.

The relationship between risk aversion and purchase intention

It is confirmed that there is a positive correlation between risk aversion and purchase intention for high-norm products. It is possible that risk aversion leads to consumers' conformity with products having strong social support because others' opinion provides credible information regarding a product's value and lowers the uncertainty. In other words, consumers with higher risk aversion scores may be more easily to be influenced by social information. However, we should notice that no evidence shows the causality between risk aversion and purchase intention for high-norm products.

Limitation and future research

First, the manipulation of purchase motivation did not work, which means we cannot determine whether purchase intention and WTP for high-trait and –norm product are influenced by hedonic or utilitarian motivation. The future research could replicate this study with different manipulation for purchase motivation. The second limitation is that the ratio of purchase intention for high-trait products to high-norm products is fixed. It is not sure whether consumers' intention will sway if the ratio changes. The future research can extent the ratio to difference levels, and find the critical point where consumers' purchase intention reverses.

In order to understand the psychological mechanism underlying the preference for products with obvious brand personality rather than products with strong social support, future research could compare the moderating role of self-involvement and perceived quality in the process of product inference making. Besides, to explain why consumers are not willing to pay more for high-trait electronics, the future research can focus on the influence of product value on product information inference. It is possible that with the product value increasing, consumers are less willing to pay more for products with obvious brand personality. Additionally, future research also needs to determine whether there is a causality between risk aversion and purchase intention for high-norm products. We cannot rule out the possibility that there is another variable influencing risk aversion and purchase intention for high-norm products together.

At the last, we suggest future research should link the conclusions of this study with classical decision-making theories, such as framing effect. In this study, we only used positive framing for social information and brand personality. However, negative brand information and social information are also available for online consumers, like negative reviews and company's scandals. It is difficult to tell whether brand personality information will still be more influential

than social information on consumers' online purchase decisions. This issue is worthy of further exploration, because of its implication on theory and practice.

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