Internet Research

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Received 20 November 2013
Revised 4 December 2013
17 January 2014
15 March 2014
15 May 2014
Accepted 18 May 2014

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Abstract

Purpose – The purpose of this paper is to examine consumer reactions to product categories, online seller reputation, and brand name syllables.

Design/methodology/approach – This paper uses four experimental designs to explore the seller reputation, product category, and brand name syllable effects in internet shopping. The authors chose sellers of (low/high) repute from Yahoo Mall. ANOVA is used to evaluate the results.

Findings – Seller reputation moderates the effect of the brand name syllable level on purchase intention and product category moderates the effect of the brand name syllable level on purchase on internet (experiment 1). Consumers take the longest time to make purchasing decisions when buying credence goods or buying from sellers of low repute and that the response time mediates the moderating role of the product category (experiment 2) or reputation (experiment 3). Moreover, the effect of brand name syllable levels chosen/assigned by sellers of low repute is weakened for consumers with low (vs high) skepticism toward non-store shopping (experiment 4).

Practical implications – This study is helpful to online sellers if they can identify their reputation, product category and those consumers have skepticism, they can create extra profit through brand name syllable practice.

Originality/value – This paper extends the literature on consumers' brand name syllable processing by identifying important moderators and probing into the decision process. The results allow us to substantiate prior research and suggest prescriptive strategies for internet retailers.

Keywords Purchase intention, Product category, Brand name syllable, Non-store shopping, Seller reputation, Skepticism

Paper type Research paper

1. Introduction

Brand names play a crucial role in the marketing of products and services and in their acceptance by the public (Charmasson, 1988). Past studies emphasized the importance of brand names in their contribution to brand equity (Keller, 1993), the effect of the gender of the brand on the evaluation of cross-gender extension (Jung and Lee, 2006), but focussed studies on the analysis of brand name syllables appear limited. Since the linguistic aspect is the essence of branding and of particular importance for the success of international brand names (Usunier and Shaner, 2002), this brand name syllable gap needs to be filled.

It is important to understand Mandarin Chinese branding, because Chinese cultural values are basically shared by northeast-Asian societies, which Robinson (1995) referred to as primarily Confucian-influenced values. Chan and Huang (1997, 2001a, b)

Internet Research
Vol. 25 No. 2, 2015
pp. 150-168

1066-2243
DOI 10.1108/IntR-11-2013-0242

showed that a majority of Mandarin Chinese brands (about 90 percent) are 2-syllable ones but did not point out whether consumers would evaluate such brands more favorably. Moreover, their studies were based on content analysis and content analysis has been criticized as providing little insightful information. The fact that 90 percent of brands are 2-syllable ones does not mean that consumers would evaluate such brands more favorably. Hence, it is worth-while to pursue further studying.

In the non-store retailing, the internet has received a great deal of attention from both academics and practicing managers owing to its tremendous growth among businesses and consumers alike (Shiu and Dawson, 2002). Previous studies on information asymmetry have suggested that goods/services have search, experience, and credence qualities (Klein, 1998; Brush and Artz, 1999; Hsieh and Hiang, 2004). However, there has been little research to date on the interaction effect of brand name syllable and product categories on the internet.

There is also wide variation in the extent to which consumers trust online sellers and catalogs. Jun and Jaafar (2011) found that only marketing mix and reputation significantly influence consumers' attitude to adopt online shopping in China. Chang *et al.* (2013) found that the internet-facilitated word-of-mouth's (eWOM's) influence on the brand community member's attitude toward the negative brand information is affected by the member's level of brand community identification and brand involvement. However, there has been little research to date on the interaction effect of brand name syllables and seller reputation on the internet. In addition to studying how seller trust (measured and manipulated via reputation; Doney and Cannon, 1997; Cheema, 2008) moderates the impact of brand name syllables on purchase, we also study how product category moderates the impact of brand name syllables on purchase on the internet.

This paper uses four experimental designs to extend the literature on consumers' brand name syllable processing by identifying important moderators (seller reputation, product categories, and skepticism) and probing into the decision process (via the measurement of the response time). The results allow us to substantiate prior research and suggest prescriptive strategies for retailers. Studying the moderating role of product categories and seller reputation on the internet allows us to bridge this gap existing in prior research. The interaction between brand name syllables and seller reputation and between brand name syllables and product categories are investigated across four studies. Hence the conceptual model of this study is developed as depicted in Figure 1.

2. Theoretical background and hypotheses development

2.1 Brand name syllables

There are many studies that have identified the criteria for guidance in the selection of a good and meaningful brand name (McCarthy and Perreault, 1987; Robertson, 1989). These studies indicate that a good brand name should be easy to pronounce, easy to spell, easy to read, and so on. Chan and Huang's (1997) three-component criteria for the development of brand names are marketing, legality, and linguistics. The third component, the linguistic element, is the essence of branding, which directly affects the function of brand names. Charmasson (1988) pointed out that the degree of market promotion and legal protection that can be derived from the use of a commercial name depends almost entirely on the intrinsic characteristics of the syllable, word, and phrase. In terms of the linguistic component, a brand name must be easy to pronounce and pleasing to the eyes or ears in order to meet the phonetic requirements.

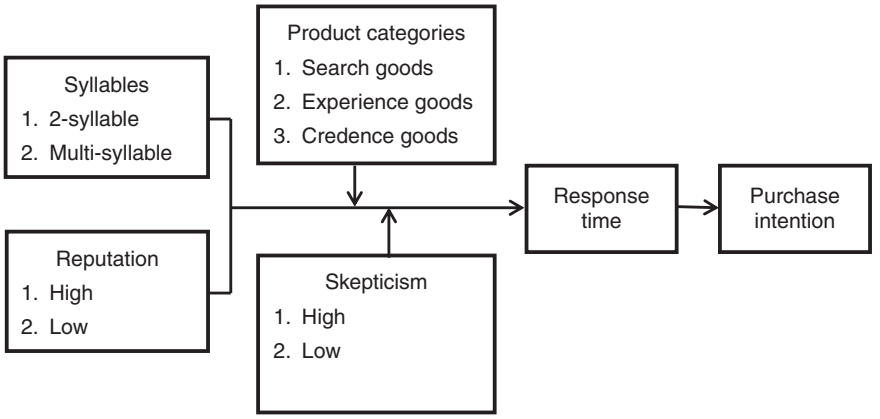

Figure 1.
Conceptual framework

Mandarin Chinese is an ideographic language rather than an alphabetical one. In Chinese, each character stands for an idea that has no particular relationship to the sound of the word. Chinese is also a tonal language in which four different tones are used to differentiate among words using the same sound. Compounding existing words is the only method of forming disyllabic or multi-syllabic Chinese names. Therefore, the special feature about Chinese morphemes is mono-syllabicity; that is, each morpheme has only one syllable. As a result, for a brand name, we can obtain both its number of syllables and its number of morphemes in the same way.

Chan and Huang (1997, 2001a, b) showed that a majority of Mandarin Chinese brands (about 90 percent) are 2-syllable ones, they did not show that consumers would evaluate such brands more favorably. But the syllable-based word length effect has been termed one of the "benchmark findings" that models of short-term memory must account for (Lewandowsky and Farrell, 2008) and has greatly influenced the development of many theories of memory. Moreover, Jalbert *et al.* (2011) found that words with fewer syllables were better recalled than words with more syllables. Grazian (1995/1996) said that long words made us work too hard to grasp their true sense. Hence he suggested that we write and speak just with short words. Furthermore, Adams *et al.* (2011) suggested that the syllabic frequency may have an impact on solution times for polysyllabic words, with more frequent syllables being more difficult to solve. Luna and Kim (2006) found that the linguistic coding of prices can influence the accuracy of individuals' mental calculations and subsequent price recall. Brand names with more syllables are likely to overtax working memory and influence the brand awareness and brand associations, which can make the calculation of total prices more difficult. Thus, it is clear that syllables play an important role in accessing words in our mental lexicon (Stenneken *et al.*, 2007). Hence, we have the following hypothesis:

H1. Customers' purchase intention is more favorable for 2-syllable brand names than for multi-syllable brand names.

2.2 Product category

Previous studies on information asymmetry have suggested that products or services have search, experience, and credence qualities (Nelson, 1970; Brush and Artz, 1999; Hsieh and Hiang, 2004). All goods/services can be placed on a continuum ranging from

"easy to evaluate" (search goods) to "difficult to evaluate" (credence goods) (Nelson, 1970). With search goods like grocery produce, consumers can evaluate product attributes by visual inspection (Lovelock, 2001). The product attributes of experience goods like automobile tires cannot be assessed so easily by inspection, and actual product trial and experience is necessary to judge durability, service quality, safety, and ease of handling or use (Klein, 1998). Credence goods are those that are difficult to evaluate even after some trial has occurred (Ostrom and Iacobucci, 1995). Goods/services such as legal services, education, and complex surgery are high in credence attributes (Lovelock, 2001).

Researchers noted that different types of products or services may affect consumer acceptance and willingness to buy (Phau and Poon, 2000). For search goods/services in internet market, prices will be the primary drivers for customers' repatronage. However, for experience and credence goods/services, they largely depend on the brand name and recommendations to make decisions because they have difficulty evaluating the quality directly. Therefore, for experience and credence goods/services, a somewhat personalized approach by the provider is required (Brush and Artz, 1999). In high-risk uncertainty purchase situations, many of which involve credence goods /services such as medical treatment or management consulting, the customer will look on price as a surrogate for quality (Kardes *et al.*, 2008). Wu and Wang (2010) find that sellers can create extra profit through information traits, information acquired cost, and brand signals. Based on the information signaling literature, Dimoka *et al.* (2012) describe how information signals (diagnostic product descriptions, favorite product brand name syllables, and third-party product assurances) reduce product uncertainty. Owing to the level of information asymmetry, buyers can be determined by the attributes of search goods/services prior to purchasing them and do not know the attributes of experience goods/services until they purchase and use them. Kargaonkar *et al.* (2006) say that the perceived risks are greater for experience goods than for search goods. Therefore, consumers are less willing to purchase experiential products on the internet (Korgaonkar and Wolin, 1999). Moreover, Credence goods /services are those that are difficult to evaluate even after some trial has occurred (Ostrom and Iacobucci, 1995). Given the difficulty of assessing and interpreting product attributes and benefits for credence goods/services, a 2-syllable brand name may be particularly important signals of high quality and other characteristics to consumers, it will also reduce the level of product uncertainty and will not decrease the purchase intention to a greater extent for this type of product. According to the syllable-based word length effect (Lewandowsky and Farrell, 2008; Jalbert *et al.*, 2011), words with fewer syllables are better recalled than words with more syllables. Multi-syllable brand names will decrease the purchase intention for search goods/services more than for experience goods/services. Meantimes, multi-syllable brand name will decrease the purchase intention to a greater extent for experience goods/services than for credence goods/services. Hence the effect of syllables on the product categories in order of impact would be search goods/services, experience goods/services, and credence goods/services. Thus, we have the following hypotheses:

H2. The product category will moderate the effect of the brand name syllable on the purchase intention.

H2a. The multi-syllable brand name will decrease the purchase intention to opt for search goods/services more than for experience goods/services.

H2b. The multi-syllable brand name will decrease the purchase intention to opt for experience goods/services more than for credence goods/services.

2.3 Reputation

In a business relationship, trust has been regarded as having three components (Walter *et al.*, 2003): first, the belief that the business partner will behave benevolently to benefit the relationship (Anderson and Weitz, 1992); second, that the partner will behave honestly (Doney and Cannon, 1997); and third, that the partner can be trusted to be competent in his/her role (Ganesan, 1994). Trust is a relationship success factor and a key social exchange theory variable (Morgan and Hunt, 1994). Social exchange theory postulates that reciprocal actions and behavior in formal relationships enhance the perceived trust of an exchange partner (Blau, 1964).

A seller's reputation is generally defined as a perception of a seller's past actions and future prospects (Roberts and Dowling, 2002), which describe a seller's overall appeal to consumers. In online auction research, reputation is typically the key indicator of trust (Tan and Thoen, 2000; McKnight and Chervany, 2001; Pavlou, 2003). In electronic commerce, a favorable web site reputation reduces the uncertainty of new users and helps build initial trust (McKnight *et al.*, 2002). According to Spence's signaling theory (1973), a company's reputation is a signal because reputation is an unobservable characteristic, subject to manipulation. Examples of factors that can positively impact or "manipulate" a company's reputation and influence opinions are corporate social responsibility efforts, philanthropic actions, and media announcements concerning strategic decisions. Ghosh and John (2009) suggest that even a company's brand can influence reputation. Anderson and Weitz (1989) find that a poor reputation lowers trust in relationships. Wagner *et al.* (2011) also find that trust during the project collaboration has a stronger influence on the future of buyer-supplier relationships than fair economic rewards or reputation. Thus we manipulate (and, in study 1, measure) seller trust through seller reputation based on user feedback. Feedback mechanisms act as credible reputation-creating devices (Resnik *et al.*, 2000) and lead to credibility-based trust (Doney and Cannon, 1997). As an intangible asset, reputation signals information about a firm's quality and performance (Ghosh and John, 2009). Furthermore, a positive reputation can be a source of competitive advantage (Hansen *et al.*, 2008) and financial performance (Roberts and Dowling, 2002). Thus good reputation signals past commitment to a positive consumer experience (Smith and Barclay, 1997). Firms with a good reputation are perceived to be reluctant to jeopardize their reputation by acting opportunistically (Chiles and McMackin, 1996). On the other hand, a negative reputation is negatively related to trust (Anderson and Weitz, 1989). In sum, reputation significantly affects consumers' trust in sellers (Ganesan, 1994). Thus, sellers of high repute are trusted more, and we expect seller reputation to moderate the effect of the brand name syllable on the purchase intention:

H3. The multi-syllable brand name will decrease the purchase intention to opt for sellers of low repute more than for sellers of high repute.

2.4 Skepticism

In recent years, interest has grown in the topics of consumer skepticism, particularly since the publication of the Persuasion Knowledge Model (Friestad and Wright, 1994). This model suggests consumers' beliefs about marketers' persuasion attempts influence how they respond to marketers' communication efforts. Buyers' suspicion of sellers' actions is greater in online and catalog environments than in face-to-face transactions because the former lacks elements of facial expressions, body language, and other social cues that are present in the latter (Boyd, 2003). These purchasing

decisions are therefore made almost solely on the basis of trust (Urban *et al.*, 2000). Extending this line of research, we investigate the notion that some consumers may be highly skeptical of direct marketers' offers due to their underlying beliefs regarding the reputation of sellers. We thus conceive of reputation as one component of consumers' persuasion knowledge. Consumers often feel the need to defend themselves from persuaders' tactics (Koslow, 2000). Prior research on persuasion has demonstrated that consumers differ in their tendency to engage in and enjoy painstaking processing of information (Cacioppo *et al.*, 1996). Consumers with high skepticism toward non-store shopping naturally tend to seek, acquire, think about, and reflect back on information when processing information. In contrast, low skepticism consumers are more likely to rely on others (e.g. celebrities or experts), cognitive heuristics, or social comparison processes. Thus, high skepticism consumers are likely to pay greater attention to the content of a persuasive message, while low skepticism consumers are likely to pay more attention to the message context or source cues. Consistent with these processing differences, we expect that low skepticism consumers will be more likely to decide on the basis of seller reputation, since they are more likely to purchase from sellers of high repute. In contrast, high skepticism consumers will be more likely to decide on the basis of the offer when they do pay attention to the brand name syllable or message context. Specifically, among high skepticism consumers buying from sellers of low repute, those facing multi-syllable brand names will be less likely to buy. Thus:

H4. Consumers' skepticism will moderate the interaction effect between the brand name syllable and seller reputation outlined in *H1*.

H4a. Among low skepticism consumers, the brand name syllable brand names will not affect the purchase intention.

H4b. Among high skepticism consumers, multi-syllable will decrease the purchase intention to opt for sellers of low repute.

3. Method and results

From 2011 to 2013, total 252 papers were published in *Journal of Consumer Research*. Among them, at least 197 papers used experimental design to find the causal effect and 189 papers used at least three studies separately to test their conceptual model. To avoid multiple-treatment interference, different groups of participants were involved in their studies. We also found that to avoid too many factors made subjects hard to make the right decision, most of the papers did not use four factors between-subjects design. Only one paper (Noseworthy *et al.*, 2011) used four factors (ad context × gender × working memory constraint × product congruity) between-subjects factorial design. Actually gender knew already, the experimental decision difficulty level was just like that of three factors design. Following their approach, thus we use three factors design at most in our four studies and analysis of variance or regression analysis statistical method to test our four hypotheses separately and the conceptual model.

3.1 Experiment 1: effects of reputation, product categories, and brand name syllables on purchase intentions

3.1.1 Pretest, manipulation, and measurement. 105 T University (in Taiwan) students (speak Chinese and used to purchase on the internet) was randomly distributed to participate in three pretests. Pretest 1 selected the sellers of high or low repute. We chose the ten most satisfactory sellers and the ten least satisfactory sellers from

Yahoo Mall. Using the seven-point scale (1 = very low, 7 = very high) to evaluate their reputation. There were significant differences ($p < 0.01$) between these two groups. From these two groups we chose one seller of low repute ($M = 2.45$) and one seller of high repute ($M = 6.03$). In view of the difficulty in evaluating the level, we used the seven-point scale (1 = strongly disagree, 7 = strongly agree) to evaluate the selected nine products in pretest 2. Finally we chose the smart phone (experience goods), toilet tissue (search goods), and health food (credence goods) as our experimental product categories.

We divided Chinese brand names into two types: two-syllable ones and multi-syllable ones. A two-syllable brand means that it has two syllables in its brand name. On the other hand, a multi-syllable brand name refers to the type of brand name with at least three syllables. Because of the specific feature about Chinese morphemes – mono-syllabicity – this research can directly divide brand names into two groups we need – two-syllable and multi-syllable brand names. We do not need to design the pretest for this independent variable. In pretest 3, we present ten familiar brand name (five: 2-syllable; five: multi-syllable) from each product category to subjects. According to the most familiar level, we select HTC (multi-syllable in Chinese) and Apple (2-syllable in Chinese) brand names from smart phones, Scott (2-syllable in Chinese) and Mayflower (multi-syllable in Chinese) brand names from toilet paper, Quaker (2-syllable in Chinese) and AGV (multi-syllable in Chinese) brand names from health food as our experimental objects in pretest 2. In the test, a direct purchase intention measurement is chosen to measure the consumers' purchase intention, as suggested by Cheema (2008): participants rated how likely they were to buy. Because the number of scale points increases with the reliability of the measure (Churchill and Peter, 1984), we adopted the seven-point (Cheema, 2008; Zhang *et al.*, 2010) scale (1 = not at all likely, 7 = very likely) for evaluation.

3.1.2 Participants, method, and design. In experiment 1, we adopted a 2 (brand name syllables: 2-syllable or multi-syllable) × 3 (product categories: search, experience, or credence goods) × 2 (reputation: high or low) full factorial between-subject design with random assignment. This research posted the experiment questionnaire on the questionnaire collection web site www.mySurvey.tw, from February 20 to March 12 in 2014. To facilitate this research program, 8G flash memory stick was provided as a gift by lottery for the internet surfers who participated in the experiment. For each of the 12 scenarios, a total of 384 valid surveys were returned (speak Chinese and used to purchase on the internet). Of the 384 subjects, 160 were men and 224 were women. Most of the subjects were in the age bracket of below 29 (88.12 percent) and 71.97 percent were students. Moreover, 51.15 percent of the respondents spend over four hours surfing the internet every day.

In scenario 1, participants were considering to purchase a HTC smart phone from a seller (high reputation) on Yahoo Mall. We manipulated the seller reputation and found there were significant differences existing between sellers of high repute and low repute (1 = don't trust at all, 7 = trust a lot; $M_{low\text{-}rep.} = 2.26$ vs $M_{high\text{-}rep.} = 6.25$; $F(1, 372) = 61.25$, $p < 0.01$). We also manipulated the product category to be search, experience, or credence goods and found there were significant differences in view of the difficulty in evaluating the level that exists among the smart phone (experience goods), toilet tissue (search goods), and health food (credence goods). Finally we found participants were very familiar with these experimental brand names ((1 = very unfamiliar, 7 = very familiar; $M > 6.32$). No differential effects were observed in gender (58 percent female) and age.

3.1.3 Results. The main effect of the brand name syllable is significant ($F(1, 372) = 36.89$, $p = 0.000 < 0.001$). The interaction effect between reputation and the brand name syllable is significant ($F(1, 372) = 33.42$, $p = 0.000 < 0.001$), thus supporting *H1*. Figure 2 depicts the effect of the brand name syllable on the purchase intention to patronize sellers of two different levels of repute. *H3* is supported as multi-syllable brand names will decrease the intention to patronize sellers of low repute ($M = 1.89$) more than sellers of high repute ($M = 2.89$; $F = 7.69$, $p < 0.05$). *H2* is supported with the interaction effect between the product category and the brand name syllable being significant ($F(2, 372) = 4.68$, $p = 0.01 < 0.05$). Figure 3 depicts the effect of the brand name syllable on the purchase intention in terms of the product category. Multi-syllable brand names will decrease the intention to purchase search goods

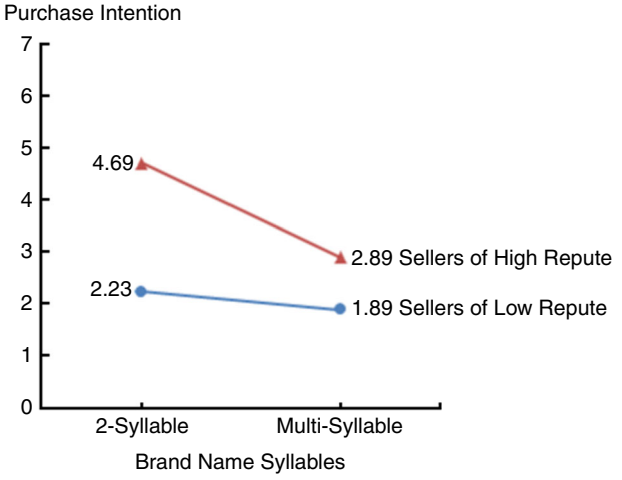

Figure 2.
Seller reputation moderates the effect of the brand name syllable on the purchase intention

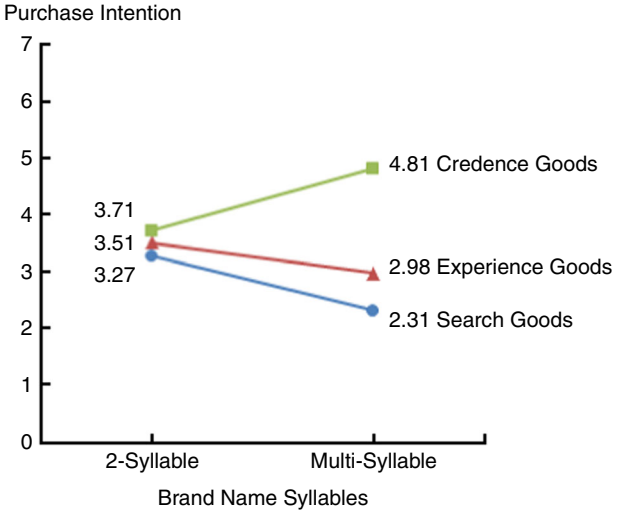

Figure 3.
Product category moderate the effect of the brand name syllable on the purchase intention

($M = 2.31$) more than experience goods ($M = 2.98$; $F(1, 126) = 3.53$, $p < 0.05$), so *H2a* is supported. Multi-syllable brand names will also decrease the intention to purchase experience good ($M = 2.98$) more than credence good ($M = 4.81$; $F(1, 126) = 7.21$, $p < 0.05$), so *H2b* is supported. The three ways interaction of the product category × the brand name syllable × reputation is significant ($F(2, 372) = 10.12$, $p = 0.000 < 0.001$).

This study indicates that the multi-syllable brand name reduces buyers' purchase intention when buying from sellers of low repute but not when buying from sellers of high repute. It also reveals that multi-syllable brand name hurts low-reputation sellers (but not sellers of high repute). Moreover, it also reveals that multi-syllable hurts sellers of search goods/services or experience goods/services more (but not those of credence goods/services). Ideally, one way for search goods/services or experience goods/services sellers to minimize the deleterious effect of a multi-syllable brand name would be to find the high repute web site. This tactic would eliminate the stimulus that decreases the purchase intention. Thus we expect to find that the high repute web site will be more beneficial for multi-syllable search goods/services or experience goods/services. This study demonstrates that multi-syllable brand names lower consumers' purchase intention more when buying from sellers of low repute. Specifically, we expect that buyers are suspicious and therefore pay greater attention to brand name syllables when buying from sellers of low repute. Brand name syllable assigned by sellers of low repute therefore get noticed, and multi-syllable brands lead to more difficulties to decide (Adams *et al.*, 2011), lowering the purchase intention. Study 1 also demonstrates that the product category will moderate the effect of the brand name syllable on the purchase intention. Multi-syllable brands will decrease the purchase intention to opt for search goods/services more than for experience goods/services and experience goods/services more than for credence goods/services.

3.2 Experiment 2: response time mediates the effect of the product category

3.2.1 Participants, method, and design. Another 180 T University students (speak Chinese and used to purchase on the internet) participate for extra credit. Here we adopted the pretest results of the product category in experiment 1. The study was a 2 (brand name syllables: 2-syllable or multi-syllable) × 3 (product categories: search, experience, or credence goods) full-factorial between-subjects design with random assignment. In scenario 1, the participant wanted to buy a HTC smart phone (experience goods) from a seller on Yahoo mall as a present for his/her favorite mother's birthday, which would be coming up next month (the delay was included to avoid concerns about shipping times). He/She saw a picture and a brief description of the smart phone. Finally, he/she wrote down his/her purchase intentions. We adopted the pretest results of the product categories in experiment 1. We manipulated check the product categories and found the smart phone (experience goods), toilet tissue (search goods), and health food (credence goods) as our experimental product categories. Finally we also found the participants to be very familiar with these experimental brand names ((1 = very unfamiliar, 7 = very familiar; $M > 6.38$). No differential effects were observed on gender (48 percent female), age (mean age 21 years). To measure the response time, we asked participants to note at the top of the page the time at which they started (from a digital clock showing hours, minutes, and seconds). At the bottom of the page they noted the times at which they ended. The difference between the start and stop times gave us the response time. A similar technique was used by Shiv *et al.* (2005), as confirmed in personal communication with one of the authors.

3.2.2 Results. The interaction effect between the product category and the brand name syllable on the response time was significant (F (2, 174) = 7.86, $p < 0.05$). We found that participants took a longer time to buy credence goods ($M = 72.69$ seconds) than experience goods ($M = 62.89$ seconds; $F(1, 28) = 7.59$, $p < 0.05$) and a longer time to buy experience goods ($M = 62.89$ seconds) than for search goods ($M = 44.56$ seconds; $F(1, 28) = 7.31$, $p < 0.05$). The purchase intention analysis reveals that the product category moderates the effect of the brand name syllable on the purchase intentions (i.e. the interaction effect between the product category and the brand name syllable affects purchase intentions). As the product category affects the response time, the interaction effect between the response time and the brand name syllable should affect the purchase intention in a similar way. Furthermore, adding the interaction effect between the response time and the brand name syllable to a model containing the interaction effect between product category and brand name syllable should significantly weaken the latter, supporting a process of mediate moderation (Muller *et al.*, 2005). Indeed, the interaction effect between the response time and the brand name syllable affects the purchase intentions ($F(1, 174) = 14.96$, $p < 0.01$) and weakens the interaction effect between the product category and the brand name syllable ($F(2, 174) = 7.54$, $p < 0.05$). The response time does not affect the purchase intentions for credence goods (2-syllable: $F(1, 28) = 0.49$, *NS*; multi-syllable: $F(1, 28) = 0.29$, ns). However, the response time has contrasting effects on the purchase intention across brand name syllable levels for the product category. Participants primed with search goods and 2-syllable brand names take a shorter time and increase purchase intentions (unstandardized $b = 0.29$, $F(1, 28) = 16.35$, $p < 0.01$). In contrast, participants primed with search goods and a multi-syllable brand names take a longer time and decrease purchase intentions ($b = 0.92$, $F(1, 28) = 28.12$, $p < 0.01$). This leads to a significant response time×brand name syllable interaction for ($F(1, 28) = 34.12$, $p < 0.01$). Participants primed with experience goods and 2-syllable brand names take a shorter time and increase purchase intentions (unstandardized $b = 0.18$, $F(1, 28) = 13.16$, $p < 0.01$). On the contrary, participants primed with experience goods and a multi-syllable brand names take a longer time and decrease purchase intentions ($b = 0.63$, $F(1, 28) = 26.16$, $p < 0.01$). This leads to a significant interaction effect between the response time and the brand name syllable ($F(1, 28) = 35.87$, $p < 0.01$). This study finds that consumers take the longest time when buying credence goods, and the response time mediates the moderating role of the product category. When consumers buy credence goods, elaboration (longer response time) increases purchase intentions for 2-syllable brand names but decreases purchase intentions for multi-syllable brand names. Consistent with the effects of difficulty to decide, consumers appear to carefully attend to brand name syllables when buying search or experience goods. In contrast, consumers buying credence goods pay less attention (i.e. decide faster), and the response time does not affect purchase intentions for credence goods.

3.3 Experiment 3: response time mediates the effect of seller reputation

3.3.1 Participants, method, and design. Another 120 T University students (speak Chinese and used to purchase on the internet) participated for extra credit. Here we adopted the pretest results of seller reputation and surcharges in experiment 1. The experiment was a 2 (brand name syllables: 2-syllable or multi-syllable) × 2 (reputation: low or high) full-factorial between-subjects design with random assignment. Participants read one scenario in which he/she wanted to buy a new HTC smart

phone from a seller (high repute) on Yahoo mall as a present for his/her favorite mother's birthday, which would be coming up next month (the delay was included to avoid concerns about shipping times). He/She saw a picture and a brief description of the HTC smart phone. Finally, he/she wrote down his/her purchase intention. We adopted the pretest results of seller reputation in experiment 1. We manipulated the seller reputation to be low or high between subjects. We found there were significant differences existing between sellers of high repute and low repute (1 = don't trust at all, 7 = trust a lot; $M_{low\text{-}rep.} = 2.29$ vs $M_{high\text{-}rep.} = 5.78$; $F\ (1, 116) = 55.31$, $p < 0.01$). No differential effects were observed on gender (48 percent female) and age (mean age 20 years). To measure the response time, we asked participants to note at the top of the page the time at which they started (from a digital clock showing hours, minutes, and seconds). At the bottom of the page they noted the time at which they ended. The difference between the start and stop times gave us the response time. A similar technique was used by Shiv *et al.* (2005), as confirmed in personal communication with one of the authors.

3.3.2 Results. Participants took a longer time to buy from sellers of low repute ($M_{2\text{-}syllable} = 70.89$ seconds vs $M_{multi\text{-}syllable} = 58.23$ seconds; $F(1, 116) = 13.32$, $p < 0.001$). The brand name syllable level did not affect the response time ($M_{2\text{-}syllable} = 61.98$ seconds vs $M_{multi\text{-}syllable} = 63.52$ seconds; $F(1, 116) = 0.32$, *NS*). The interaction effect between reputation and the brand name syllable level on the response time was not significant ($F(1, 116) = 0.25$, *NS*). The purchase intention analysis reveals that reputation moderates the effect of the brand name syllable level on the purchase intention (i.e. the interaction effect between reputation and the brand name syllable level affects the purchase intentions). As reputation affects the response time, the interaction effect between the response time and the brand name syllable level should affect the purchase intention in a similar way. Furthermore, adding the interaction effect between the response time and the brand name syllable level to a model containing the interaction effect between reputation and the brand name syllable level should significantly weaken the latter, supporting a process of mediate moderation (Muller *et al.*, 2005). Indeed, the interaction effect between the response time and the brand name syllable level is significant ($F(1, 116) = 13.81$, $p < 0.005$) and weakens the interaction effect between reputation and the brand name syllable level ($F(1, 116) = 3.39$, $p = 0.15$). The response time does not affect the purchase intention for sellers of high repute (2-syllable: $F(1, 28) = 0.11$, *NS*; multi-syllable: $F(1, 28) = 0.12$, *NS*). However, the response time has contrasting effects on purchase intentions across brand name syllable levels for sellers of low repute. Participants primed with sellers of low repute and a 2-syllable brand name take a longer time and increase purchase intentions (unstandardized $b = 0.16$, $F(1, 28) = 12.51$, $p < 0.01$). In contrast, participants primed with sellers of low repute and a multi-syllable brand name take a longer time and decrease purchase intentions ($b = 0.11$, $F(1, 28) = 24.02$, $p < 0.01$). For sellers of low repute, the interaction effect between the response time and the brand name syllable level is significant ($F(1, 56) = 31.45$, $p < 0.01$). This study reveals that consumers take a longer time when buying from sellers of low repute, and the response time mediates the moderating role of reputation. When consumers buy from sellers of low repute, elaboration (longer response times) increases purchase intentions for 2-syllable brand names but decreases purchase intentions for multi-syllable ones. Consistent with the effects of difficulty to decide, consumers appear to carefully attend to brand name

syllable levels when buying from sellers of low repute. In contrast, consumers buying from sellers of high repute pay less attention (i.e. decide faster), and the response time does not affect purchase intentions to opt for sellers of high repute.

3.4 Experiment 4: skepticism moderates the reputation × brand name syllable interaction

3.4.1 Participants, method, and design. We adopted a 2 (seller reputation: high or low) × 2 (brand name syllables: 2-syllable or multi-syllable) × 2 (skepticism: high or low) full factorial between-subject design with random assignment. For each of the eight scenarios, 30 T University students (speak Chinese and used to purchase on the internet) would fill out the questionnaire for credit. All participants used to purchase in the online (mean age 21 years, 49 percent female) rated how likely they will buy (1 = not at all likely, 7 = very likely) and also completed the one item skepticism measure. A median split classified participants as having low- or high-skepticism toward non-store shopping. Their skepticism was significantly different (1 = not at all, 7 = at all; $M_{low\text{-}skep.} = 2.32$ vs $M_{high\text{-}skep.} = 4.63$; $F(1, 232) = 45.62$, $p < 0.01$).

Participants read a scenario in which they were considering the purchase of a smart phone from a catalog. We manipulated the seller reputation to be low or high between subjects. Half the participants read that the seller was rated as average, with 2.5/5 stars. The other half read that the catalog was rated as excellent, with 4.5/5 stars. The former was trusted significantly less than the latter (1 = don't trust at all, 7 = trust a lot; $M_{low\text{-}rep.} = 2.35$ vs $M_{high\text{-}rep.} = 4.89$; $F(1, 232) = 59.31$, $p < 0.01$).

3.4.2 Results. The three interaction of brand name syllable×reputation × skepticism is significant ($F(1, 232) = 13.25$, $p < 0.01$). Low skepticism participants use the catalog reputation as a cue to make their decisions ($M_{low\text{-}rep.} = 3.24$ vs $M_{high\text{-}rep.} = 5.32$; $F(1, 232) = 32.31$, $p < 0.01$) and are not affected by the brand name syllable ($M_{2\text{-}syllable} = 4.63$ vs $M_{multi\text{-}syllable} = 4.35$; $F(1, 232) = 1.31$, *NS*), supporting *H4a*. For low skepticism participants, the interaction effect between the brand name syllable and seller reputation is not significant ($F(1, 232) = 0.68$, *NS*). By contrast, high skepticism participants are affected by the brand name syllable as well as reputation. High skepticism participants primed with low-reputation catalog and a 2-syllable brand name are more likely to buy ($M_{2\text{-}syllable} = 4.54$ vs $M_{multi\text{-}syllable} = 2.36$; $F(1, 232) = 20.13$, $p < 0.01$). Brand name syllable levels do not affect purchase intentions to opt for a catalog of high repute ($M_{2\text{-}syllable} = 4.89$ vs $M_{multi\text{-}syllable} = 4.69$; $F(1, 232) = 1.01$, *NS*). For high skepticism participants, the interaction effect between brand name syllable levels and seller reputation is not significant ($F(1, 232) = 16.24$, $p < 0.01$), thereby supporting *H4b*. As a consequence, skepticism moderates the interaction effect between brand name syllable levels and seller reputation; this interaction is significant for high skepticism consumers but not for low skepticism consumers, thus supporting *H4*.

4. General discussion

From these studies, we find all the hypotheses are supported (Table I).That is, customers' purchase intention is more favorable for 2-syllable brand names than for multi-syllable ones. The product category will moderate the effect of the brand name syllable on the purchase intention. Multi-syllable brand names will decrease the purchase intention to opt for search goods/services more than experience goods /services and decrease the purchase intention for experience goods/services more than for credence goods/services. Moreover, multi-syllable brand names will decrease

Hypotheses	Results
H1: customers' purchase intention is more favorable for 2-syllable brand names than for multi-syllable brand names	Supported
H2: the product category will moderate the effect of brand name syllable on purchase intention	Supported
H2a: the multi-syllable brand name will decrease the purchase intention to opt for search goods/services than for experience goods/services	Supported
H2b: the multi-syllable brand name will decrease the purchase intention to opt for experience goods/services than for credence goods/services	Supported
H3: the multi-syllable brand name will decrease the purchase intention to opt for sellers of low repute than for sellers of high repute	Supported
H4: consumers' skepticism will moderate the interaction effect between the brand name syllable and seller reputation outlined in *H1*	Supported
H4a: among low skepticism consumers, brand name syllable will not affect purchase intention	Supported
H4b: among high skepticism consumers, multi-syllable will decrease the purchase intention for sellers of low repute	Supported

Table I.
Summary of hypotheses results

the purchase intention to opt for sellers of low repute more than for sellers of high repute. We also find consumers' skepticism will moderate the interaction effect between brand name syllable levels and seller reputation outlined in *H1*. That is, among low skepticism consumers, brand name syllable levels will not affect the purchase intentions; among high skepticism consumers, multi-syllable brand names will decrease purchase intention to opt for sellers of low repute.

4.1 Theoretical contributions

This research makes some theoretical contributions. First, although Chan and Huang (1997, 2001a, b) showed that majority Mandarin Chinese brands (about 90 percent) are 2-syllable ones, they do not show that consumers would evaluate such brands more favorably. This paper demonstrates customers' purchase intention is more favorable for 2-syllable brand names than for multi-syllable ones. Second, it demonstrates the moderating role reputation plays in bringing about the effect of brand name syllable levels on the purchase intention; we also find the moderating role product category plays in exerting the effect of brand name syllable levels on the purchase intention. That is, multi-syllable brand names will decrease the purchase intention to a greater extent for search goods/services than experience goods/services. It also will decrease the purchase intention to a greater extent to opt for credence goods/services than search goods/services. Third, based on the response-time measure, we notice that consumers dealing with sellers of low repute take a longer time to make purchase decision, and this response time mediates the moderating role of seller reputation. We also find that consumers take a longer time to make the purchasing decisions when buying credence goods and that the response time mediates the moderating role of the product category. Fourth, we show that skepticism of the offer facilitates the moderating role of reputation, as evidenced by the significant effect of brand name syllable levels on high skepticism consumers who face sellers of low (but not high) repute. The effect of brand name syllable levels is not significant for low skepticism consumers. In summary, our investigation extends the literature on brand name syllable processing by identifying important moderators (seller reputation, product category, and skepticism) and probing into the decision process (via the measurement

of the response time). Our research is attuned to identifying or anticipating theoretically and pragmatically relevant domains – the effect of product categories, seller reputation and brand name syllable levels on the internet. In brand management practice, the importance of such an external approach is often underestimated. Many marketing managers focus more on an internal consistency of their intended brand personality by aligning it with corporate strategy, corporate culture, and brand tradition (Simões *et al.*, 2005). Referring to Corley and Gioia (2011) viewpoints, this study reveals these conclusions what we otherwise have not seen, known, or conceived. These conclusions have a revelatory insight. Finally this study would provide internet theories with more scientific and practical utility.

4.2 Managerial implications

The results carry the following managerial implications. First, 2-syllable brand name may be particularly important signals of easy to remember, favor, and other characteristics to consumers; it will also reduce the level of product uncertainty and will not decrease the purchase intention to a greater extent for 2-syllable brand name products. On the contrary, to increase purchase intentions, search goods/services and experience goods/service internet retailers should not use multi-syllable brand name. Meanwhile, brand name syllables assigned by sellers of search goods/services or experience goods/services get noticed, and multi-syllable brand name leads to difficulty to remember and dislike, thereby lowering the purchase intention. In contrast, multi-syllable brand name chosen by sellers of credence goods/services is less likely to be noticed and therefore less likely to affect purchase intentions. Therefore, in contrast to search goods/services and experience goods/services sellers, credence goods/services sellers can decide on a multi-syllable brand name. Second, consumers take a longest time to make purchasing decisions when buying credence goods and also take a longer time to decide when buying from sellers of low repute. These potential buyers hesitate to make a decision in online shopping transactions due to perceptions of uncertainty caused by imperfect information, fears of seller opportunism, and information privacy and security concerns. To promote online trading, developers of online websites need to create an environment more conductive to buyer confidence. For example, internet developers can create functions that help sellers efficiently provide more complete and detailed information about their products and services. Online sellers can use credible celebrities or experts to deliver their products or services messages on the web site so as to promote online trading. Celebrity or expert endorsements can play a more fundamentally strategic role for their brands not only by endorsing a product but also by helping to design, position, and sell merchandise and services. Seller opportunism can be guarded against/minimized by mechanisms such as purchase refund policies and seller authentication. Online managers need to continuously improve mechanisms for ensuring the integrity of personal information. Third, high skepticism consumers use reputation as a cue to make purchase decisions. Consumers with high skepticism facing sellers of low repute, pay greater attention to brand name syllable levels, and are less likely to purchase multi-syllable brand names. Hence, sellers of low repute should use 2-syllable brand name. After all, the overall reputation not only plays an extremely critical role in customers' evaluation of service quality and their satisfaction with the site (Liu *et al.*, 2010), but also plays an extremely important role in customers' evaluation of brand name syllable levels and product categories. Thus, it is this benchmark that internet retailers should strive to achieve.

4.3 Limitations and directions for further research

This study has several limitations which should be addressed. First, research data was collected from a self-selecting group of internet users or students in T University, self-reporting bias is a common problem in the methodology used. Second, another limitation may trace to the choice of stimuli (toilet tissue, smart phone, and health food) and the setting in which the study was conducted (a laboratory environment), as they may set limits on the generalization of our findings. Third, experimental design approaches are often criticized for lacking external validity (Rao *et al.*, 1999) and manipulating data artificially (Tsao *et al.*, 2006). Fourth, Chan and Huang (2001a, b) suggested that most Chinese brand naming concentrates on two-syllable names, hence this research only used 2-syllable and 3-syllable in the experiments. Fifth, only three pairs of brand names are used in the experiments. Additional research might take some of the following directions. First, further research might explore other product categories. The results show reputation moderates the effect of brand name syllable levels on products: toilet paper (search goods), smart phone (experience goods), and health food (credence goods). The effect of brand name syllable levels may vary for more expensive products (e.g. cars or homes). Future research could try to address such issues. Second, the present research focusses on consumers' skepticism, future research could focus on other individual characteristics, such as high product involvement, that may decrease attention to brand name syllable levels and enhance the moderating effect of seller reputation. Third, we explored the impact of reputation on brand name syllable levels and product categories on brand name syllable levels assigned/chosen by internet sellers (experiment 1, 2, and 3) and catalogs (experiment 4). Internet and catalogs selling belongs to non-store retailing. However, as consumers gain additional interactional experience with a store seller, one may expect this effect to be weakened. Therefore, future research might extend to the store retailing boundary to attain a robust conclusion. Fourth, for a robust research, future research should extend to 4-syllable or 5-syllable in experiments. Fifth, future research should use more than three pairs of brand names in the experiments.

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