

Full Length Research Paper

Factors influencing brand association

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The purpose of this study is to investigate brand management alternatives (includes the susceptibility to global consumer culture, perceived brand globalness and brand investment) influence on brand cognition (includes brand association through brand credibility) and brand association in the personal computer industry. This is one of the first studies to provide evidence of the relationship between brand marketing alternatives and brand association in an executive population. We discuss paths influencing customer brand cognition and brand association more specific than other related researches. We conduct the survey method and collect 439 valid questionnaires on consumers who buy personal computer in four areas in Taipei city in Taiwan using the quota sampling method. Susceptibility to global consumer culture significantly influence brand association through brand credibility. Additionally, perceived brand globalness also influences brand association through brand awareness. Marketing managers can understand the degree of sensitivity to global consumer culture of consumers all over the world and realize the reasons why they greatly prefer global brands. Marketing can provide appropriate brand strategies to consumers according to the different segments in order to strengthen positive brand association.

Key words: Brand association, brand credibility, brand awareness, susceptibility to global consumer culture, perceived brand globalness, brand investment.

INTRODUCTION

The aim of the paper is to highlight the causal relationship among brand management, brand cognition, and brand associations. This causal relationship is viewed as a significant issue in the field of global brand management since the progress of global personal computer market is gradually popular by customers (Tripsas, 2009). The potential value of this paper is to provide discussion platform in the field of brand marketing. Our paper build up a conceptual framework among susceptibility to global consumer culture, perceived brand globalness, brand investment, brand credibility, brand awareness, and brand associations and supply an expected causal relationship in order to explore their corresponding relationship attributes.

The meaning of brand association (BAS) issues has become more obvious in recent years in the personal computer industry, because of increasing competition and growing demand (Yung et al., 2009). Brand association would help consumers search and deal with information (Boisvert, 2011). Brand association would provide consumers with a purchasing reason, because most brand associations are related to brand attributes, the target consumer market, and the benefits that consumers need, so that they form the foundation of brand loyalty and consumers' purchasing decisions (Len et al., 2007). Consequently, brand association plays a very important role in consumers' purchase decision making (Boisvert and Burton, 2011).

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The causal relationship between brand cognition (includes brand credibility and brand awareness) and brand associations are discussed in this study. It is very important to recognize brand credibility that enhances customer brand awareness so that brand managers can maximize the potentiality of brand credibility (Yung et al., 2010). Firm can effectively use brand credibility mechanism to enhance the brand consideration and choice of customers (Erdem and Swait, 1998, 2004). Brand credibility, rather than perceived risk, has also been proposed to have a significant impact on the harmony of consideration set. The reason is that it increases the probability of inclusion of a brand in the consideration set as well as brand choice conditional on consideration.

Brand credibility (BC) and brand awareness (BA) promise to be a reasonable mediating variable between brand investment and brand associations (BAS) since brand awareness can influence the perceptions and attitudes of consumers, and furthermore, can affect brand choice and loyalty (Baek et al., 2010; Baek and King, 2011). Brand associations of consumers needs to be recognized as useful and helpful in order to meet the user's subjective and objective cognition in sociological and economical point of view (Aaker, 1996; Keller, 1993). Meanwhile, consumer brand awareness can be attained by way of appropriate brand management treatments (Homburg et al., 2010). Brand credibility has stronger effects to brand associations, than brand awareness, which is suggested because consumer individual belief perception mainly drives to the familiarity image, and then attains the consumer brand associations.

Three management programs are employed to solve management issue in this study. It includes susceptibility to global consumer culture, perceived brand globalness, and brand investment. First, the growth of the global consumer segments parallels the emergence of global consumer cultures, generally accepted beliefs and consumer tendencies toward globally shared consumption-related symbols such as brands, product categories, and consumption activities and events from a cultural perspective (Terpstra and David, 1991). For consumers to choose a brand, their choice must be based on the pervasiveness of susceptibility to global consumer culture (SGCC), that is, whether or not consumers all over the world would purchase a global brand and their reasons for doing so.

Secondly, faced with the phenomenon of globalization and the emergence of global markets, international enterprises must build a strong global brand as an important strategy (Batra et al., 2000; Steenkamp et al., 2003). The strategic appeal increases as meaningful segments of consumers around the world develop similar needs and tastes (Hassan and Katsanis, 1994), and consumers develop a preference for brands with a global image over those of local competitors, even when quality and value are not superior (Shocker et al., 1994; Kapferer, 1997). Strengthening the perceived brand globalness (PBG) of

consumers is a significant issue for many international corporations. Third, brand investment (BI) will aim to improve loyalty to the brand, strengthening the brand's identity and increasing the perceived value of the brand which, in turn, will help to increase the extendibility potential of the brand (Davis, 1995).

The merits and weakness of various factors (susceptibility to global consumer culture, perceived brand globalness, and brand investment) need to be analyzed in order to select an appropriate tool is very important to the brand manager. The consequence indicates that susceptibility to global consumer culture could play a most important role with brand credibility and brand awareness because popular and appealing consumer culture can attract current and potential consumer to use personal computers. This analyzing procedure infers that susceptibility to global consumer culture would reveal a useful insight with brand credibility because perceived consumer culture can focus on user's particular needs and then increase mutual customer satisfaction.

Recent researchers have revealed a great deal of work on brand globalization and global consumer culture (Batra et al., 2000; Steenkamp et al., 2003; Cleveland and Michel, 2007). However, there is scarce research to explore the relationship between perceived brand globalness and brand credibility and the influence of susceptibility to global consumer culture on consumers' brand consideration (Ozsomer and Altaras, 2008). There is also very little information except Terpstra and David (1991) to be explored regarding the concepts of global consumer culture. We then investigate the cause and effect relationship among brand management alternatives (susceptibility to global consumer culture, perceived brand globalness and brand investment), brand cognition (brand credibility and brand awareness) and brand association and apply to the 3C industry.

LITERATURE REVIEW AND HYPOTHESIS SETTING

This framework is mainly derived from Ozasomer and Altaras (2008). The authors proposed an integrated model to explore global brand attitudes and purchase likelihood of consumers according to three theories. Consequently, the framework of our study is derived from three theoretical streams in consumer behavior: consumer culture theory, signaling theory, and the associative network memory model. Furthermore, this framework includes a new variable, "susceptibility to global consumer culture," which Zhou et al. (2008) proposed, as our study variable to understand whether the phenomenon "globalization" would influence consumers' thoughts about notebook brands from different countries. According to Keller's study (1993) about customer-based brand equity, we choose the two important variables, brand awareness and brand association, involved in our model. Figure 1 displays the conceptual framework of this study.

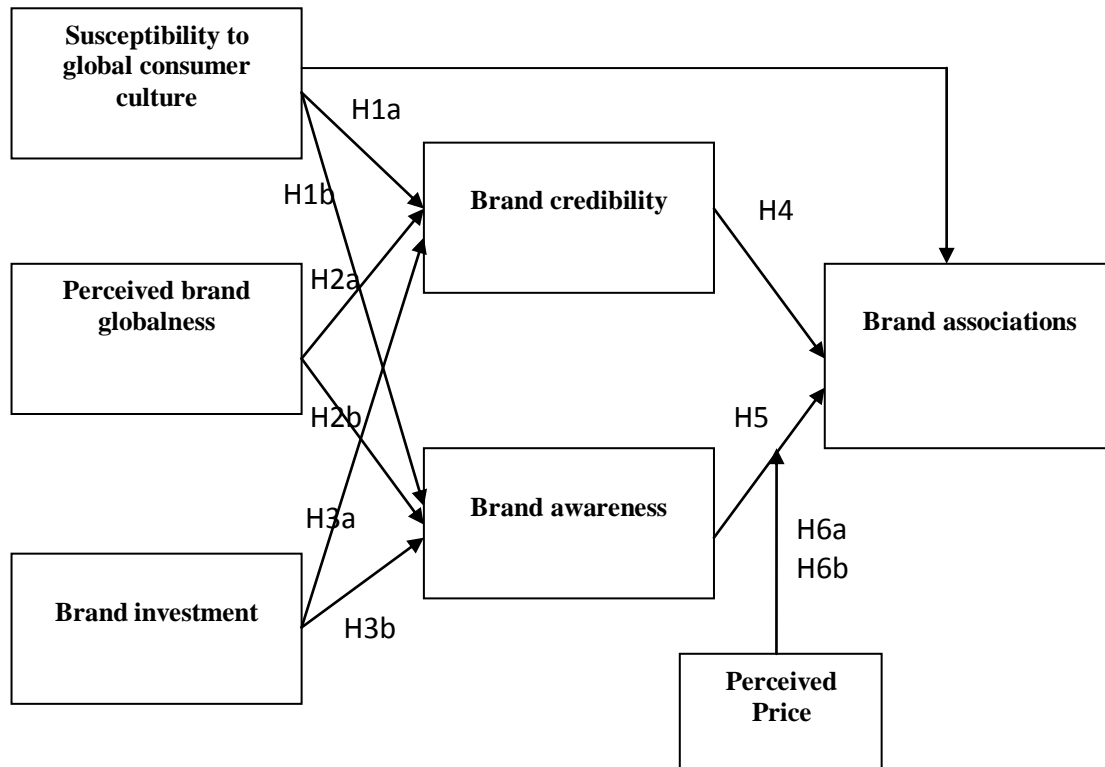


Figure 1. Research framework.

Effects of susceptibility to global consumer culture on brand credibility and awareness

Susceptibility to global consumer culture (SGCC) is defined as the consumer's desire or tendency for the acquisition and use of global brands (Zhou et al., 2008). Brand credibility is defined as the believability of the product information contained in a brand, which requires that consumers perceive that the brand has the ability and willingness to continuously deliver what has been promised (Erdem and Swait, 2004). Brand awareness is related to the strength of the brand node or trace in memory, as reflected by consumers' ability to identify the brand under different conditions (Keller, 1993). In the branding literature, brand associations have been conceptualized as informational nodes organized in a network in a manner that is consistent with associative network models of memory.

A number of researchers assert that the growth of global consumer culture increases the power and value of global consumption symbols (Kapferer, 1997; Shocker et al., 1994). Friedman (1990) emphasized that consumers enhance self-esteem and status through owning and consuming products with a global connection. According to Shocker et al. (1994), globally positioned brands are associated with authenticity. Recently, there was much evidence showing the extent to which global or foreign brands offer better value as compared to their

local competitors (Batra et al., 2000; Steenkamp et al., 2003). If consumers are sensitive to global consumer culture, they would prefer global brands to local brands, because purchasing global brands brings them much satisfaction. At the same time, they would recognize global brands are credible and have a greater awareness of them than of other brands. Consequently, when consumers are susceptible to global consumer culture, they pay much attention to the information about global brands, since the news media spread ideas about fashion, personalities, and high quality, and consumers would identify with these images that are associated with global brands and buy those brands. Thus, we propose H_{1a} , H_{1b} and H_{1c} as follows:

Hypothesis 1a: Susceptibility to global consumer culture has a positive causal relationship with brand credibility.

Hypothesis 1b: Susceptibility to global consumer culture has a positive causal relationship with brand awareness.

Hypothesis 1c: Susceptibility to global consumer culture has a positive causal relationship with brand association

Effects of perceived brand globalness on brand credibility and awareness

Steenkamp et al. (2003) defined perceived brand

globalness as the degree to which the brand is perceived as having multimarket reach and thus is believed to be globally available, desirable, and demanded. An important factor of brands that may enhance credibility perceptions is the degree to which they are perceived as global (as opposed to local) among consumers (Ozasomer and Altaras, 2008). When the brand is viewed as globally available and, thus, there is global acceptance for the product, consumers may perceive the brand as signaling more credibility than local brands.

Research in the information economics tradition demonstrates that brands that convey more consistency are perceived as more credible (Erdem and Swait, 1998). Consistency refers to the extent to which the messages conveyed by the brand are consistent over time (Ozasomer and Altaras, 2008). In the marketing standardization literature, the rationale for the global brand argument is that global brands benefit from the consistency of both their product attributes (for example, quality, reliability) and their communication mix (for example, a worldwide unique image, look, feel). Consequently, maintaining the image consistently across time and across markets is very crucial to global brands, because it would influence consumers all over the world in recognizing and choosing to buy them (Ozasomer and Altaras, 2008). The more consistent the global brand is, the more credibility it would signal. Therefore, the global brands that carefully manage their marketing mixes and expend considerable resources to optimize consistency across markets and time would enhance their credibility as global brands (Baek and King, 2011).

In a similar fashion, it is generally believed that global brands enjoy stronger awareness among consumers in many markets, because global brands devote a great deal of resources to achieve recognition and create a certain perception of what they are among people worldwide, for example, through mass advertisements and marketing plans. Thus, we propose H_{2a} and H_{2b} as follows:

Hypothesis 2a: Perceived brand globalness has a positive causal relationship with brand credibility.

Hypothesis 2b: Perceived brand globalness has a positive causal relationship with brand awareness.

Effects of brand investment on brand credibility and awareness

Brand credibility is defined as the extent to which the product position information contained in a brand is perceived as believable (Ozasomer and Altaras, 2008). Credibility depends on the willingness and ability of firms to deliver what they promise (Erdem and Swait, 2004). Brand investments represent resources spent on brands to ensure that brand promises will be kept and

demonstrate long-term commitment to the brand (Klein and Leffler, 1981). Brand investments strengthen the credibility of a brand signal by impelling the firms to be honest in their product claims and to deliver the promised product. Brands with greater marketing-mix consistency and greater brand investments have been proven to convey higher levels of credibility (Erdem and Swait, 1998).

According to Ozasomer and Altaras (2008), global brand credibility depends on the firms' willingness and ability to deliver what they promise on a global scale; marketing-mix consistency and greater brand investments have been proven to convey higher levels of brand credibility. Brand investments, on the other hand, are resources that firms spend on brands to (1) assure consumers that brand promises will be met and (2) demonstrate longer-term commitment to brands (Klein and Leffler, 1981). Consequently, brand investment would help a business to build a highly credible brand.

Brand investment is aimed at helping to improve the loyalty to the brand, strengthening the brand's identity, and increasing the perceived value of the brand, which, in turn, will help to increase the extendibility potential of the brand (Davis, 2002). When business invests heavily in a brand, consumers would have a great deal of opportunity to gather information about it. For example, if a business spent more money on advertisement, consumers may get more messages about the brand. Consequently, brand investment could facilitate the consumers' perceived brand awareness. Thus, we propose H_{3a} and H_{3b} as follows:

Hypothesis 3a: Brand investment has a positive causal relationship with brand credibility.

Hypothesis 3b: Brand investment has a positive causal relationship with brand awareness.

Effects of brand credibility on brand associations

With the perspective of associative network memory model, consumer memory is viewed as a set of nodes connected by relational links (Keller, 1993). In the network model, product categories, brand names, attributes, and benefits associated with a product are represented as nodes. Each link between two nodes has a unique name that identifies the relationship between the nodes (Collins and Quillian, 1972). In the branding literature, brand associations have been conceptualized as informational nodes organized in a network in a manner that is consistent with associative network models of memory.

The literature indicates that brand credibility plays a central role in brand consideration and choice in the United States and in other countries (Erdem and Swait, 2004; Erdem et al., 2006; Baek and King, 2011), because

it could increase the probability of inclusion of a brand in the consideration set as well as brand choice that is conditional on consideration. Higher levels of perceived quality, lower levels of perceived risk, and information costs associated with credible brands will heighten consumer evaluations of brands (Boisvert and Burton, 2011; Erdem and Swait, 1998). We expect that a clear and credible brand signal increases consumers' associations of the brand with high quality and functions. Consequently, brand credibility is related to brand associations. Thus, we propose H₄ as follows:

Hypothesis 4: Brand credibility has a positive causal relationship with brand associations.

Effects of brand awareness on brand associations

Brand awareness in our study has been defined as consumers' ability to recall that the brand is a member of the product category. The brand associations are stronger when consumers have positively linked them in their memory to the brand (Aaker, 1991). Actually, brand awareness influences consumer decision making by affecting the intensity of the brand associations in their mind (Boisvert and Burton, 2011). The higher the consumer's brand awareness is, the clearer the brand association held by the consumer (Homburg et al., 2010). Consequently, consumers' brand association is likely to be strong when they have high awareness for the brand. Thus, we propose H₅ as follows:

Hypothesis 5: Brand awareness has a positive causal relationship with brand associations.

Moderating effect of perceived price

Our study employed perceived price as a moderating variable to examine whether the level of price would strengthen the relationship between brand credibility (brand awareness) and brand association. Price plays an important role in consumers' decision making, because it is a significant cue to recognize the quality of products in the market (Zeithaml, 1988; Dodds et al., 1991). Dodds et al. (1991) proposed that using price as an indicator of product quality is not irrational, but represented a belief that price in the marketplace is determined by the interplay of the forces of competitive supply and demand. Such forces would lead to a "natural" ordering of competing products on a price scale, resulting in a strong actual positive relationship between price and product quality (Dodds et al., 1991). Consequently, the higher price would signal the message that the product is of much higher quality, and then lead the consumer to form strong positive brand associations. Thus, we propose that price has a positive moderating effect between brand credibility (brand awareness) and brand associations as

follows:

Hypothesis 6a: Perceived price has a positive moderating effect between brand credibility and brand association.

Hypothesis 6b: Perceived price has a positive moderating effect between brand awareness and brand association.

SURVEY METHOD AND QUESTIONNAIRE DESIGN

Pre-test

Before carrying out a formal questionnaire, we have to employ a pre-test to choose our target personal computer and notebooks brands in the study. There are seven famous notebook brands in the pre-test questionnaire, namely Apple, IBM, Dell, Toshiba, Sony, ASUS and Acer, and the testees are those who have bought personal computer and notebooks. They would rank the seven brands from high priced to low priced. We send 30 pre-test questionnaires, and then select the brands that testees perceived as highest and lowest priced as our study brands.

We also examine the reliability and validity of the questionnaire in our study through pre-testing. After testees have finished the questionnaire, we would ask them whether the items of the questionnaire are clear. When correcting 30 questionnaires, we perform SPSS to examine the reliability and validity of the questionnaire.

Survey method

In our study, we use quota sampling as our sampling method because quota sampling is adopted to determine the ratio for dispatching questionnaires to each notebook brand, and the sample would present the population characteristics. The sample is drawn from consumers in Taipei who have purchased the notebook brands in our thesis. First, we compute the number of questionnaires that will separately be circulated in the east, west, south, and north of Taipei. Second, we classify the sample depending on age and sex. We divide the consumers into two age groups, one of which is eighteen to thirty-seven years old, and the other is thirty-seven to sixty years old. Furthermore, we separate them into male and female. The sample structure is presented in Table 1.

Measurement

There are seven variables in our research study, which are independent variables (susceptibility to global consumer culture, perceived brand globalness, and brand investment); intermediary variables (brand credibility and awareness); dependent variables (brand association) and one moderating variable (perceived price). Our questionnaire refers to the literatures by foreign and domestic researchers and employs a 5-point Likert scale to measure each variable by the items in the questionnaire. The range is from "strongly disagree" to "strongly agree." Among them, "1" represents "strongly disagree," "5" represents "strongly agree." The items of every construct, the method of measurement, and related literature are proposed as follow.

Susceptibility to global consumer culture (SGCC) is based on the study by Zhou et al. (2008), and there are three dimensions to measure the variable. We cite Sullivan (1994) on the internalization

Table 1. Sample structure.

Items	18-37		37-60		Sample structure
	Male	Female	Male	Female	
East Side in Taipei	27	27	27	27	108
West Side in Taipei	22	22	22	22	88
South Side in Taipei	26	26	26	26	104
North Side in Taipei	25	25	25	25	100
Total	100	100	100	100	400

Data source: This study.

degree of firms, and the author proposes three constructs, namely, performance attribute, structure attribute, and attitudinal attribute, to measure the internalization degree. Consequently, we adopt the three constructs and develop the items to measure perceived brand globalness (PBG), and also adopt Steenkamp et al. (2003) three items in our questionnaire. We cite Davis (1995, 2002) on brand, and integrate four constructs, namely, R and D/Innovation, advertising activities, consumer and price promotions, and public relations activities to measure perceived brand investment (BI). We develop the measuring items depending on the four constructs. The measure of brand credibility (BC) is adopted from the extant literature (Erdem and Swait, 2004). This research devises two dimensions, namely, expertise and trustworthiness. The study revises the measurement of brand awareness (BA) from existing studies (Buil et al., 2008; Aaker, 1996). There are three constructs included in our study, namely, recall, recognition, and familiarity. The measurement of brand association (BAS) is revised from the extant literature (Buil et al., 2008). This study devises three dimensions, that is, perceived value, brand personality, and organizational associations to measure this variable.

EMPIRICAL RESULTS

Descriptive statistics

From the result of the pre-test we chose Apple and Acer that consumers perceive as the highest and lowest priced respectively, as our main research brands. By using quota sampling, the study sent out questionnaires to the consumers who had used the notebook of Apple and Acer, the two brands in Taipei. In total, we sent out 600 questionnaires and 454 were returned from January to March 2010. The ratio of questionnaires returned was 76%. Of the 454 returned questionnaires, there were 439 valid and 15 invalid questionnaires that were missing values or had incomplete answers. The effective rate of response was 97%.

In total, 46.5% of respondents were male and 53.5% were female. In the age distribution, most respondents ranged from 18 to 39 years old, and the ratio was approximately 69.5%. Our research topic is the brand association of notebooks, and the notebook is a recently invented product that utilizes new technology, so most users of notebooks are younger persons. Respondents resided in the west, east, north, and south of Taipei, according to the following ratios: 26.9, 29.8, 16.9, and

26.4%. The income per month of most respondents was 20,001 to 40,000 NT dollars and the ratio was 37.1%.

According to the one-way ANOVA, no significant differences were found (P -value > 0.05), indicating the sample was reasonably representative. From the result of Table 3, it appears that gender, age, education, area of residence, occupation, and income, have no significant differences in relation to brand association (P -value > 0.05). Therefore, consumers with different demographic characteristics do not have different cognitions of brand association.

Reliability analysis and convergent validity analysis

Our study operates the reliability analysis by way of composite reliability (CR) to measure the internal consistency reliability of variables. According to Formell and Larcker (1981), a composite reliability larger than 0.6 indicates an acceptable fit of the data. Hence, the higher the value of CR, the greater the internal consistency and reliability in our questionnaire will be. As to the CR, it is computed as $(\text{sum of standardized loading})^2 / [(\text{sum of standardized loading})^2 + (\text{sum of measurement error})]$.

In addition, this article computes the average variance extracted (AVE) to confirm the discriminate validity in our study (Fornell and Larcker, 1981). If the AVE value is larger than 0.4, it exhibits that this questionnaire possesses the high discriminate validity (Batra and Sinha, 2000). AVE is computed as $(\text{sum of square standardized loadings})^2 / [(\text{sum of square standardized loadings})^2 + (\text{sum of measurement error})]$. Our study obtains the CR and AVE of each variable in Table 2.

Fit indices of the proposed measurement model

In the Lisrel model, we adopt various fitness indices to examine the validity of the model and fit indices of the proposed measurement model are shown in Table 3. The Chi-square test is the regular statistics test used to check the similarity of fit between the observed covariance matrix and the model shown of the covariance matrix. In our model, the Chi-square is 618.38, the degree of

Table 2. The CR and AVE of each variable.

Variable	Construct	Cronbach's α	Loading	CR	AVE
Susceptibility to global consumer culture	CCT	0.892	0.77	0.8931	0.7359
	QP		0.72		
	SP		0.73		
Perceived brand globalness	PA	0.929	0.80	0.9302	0.8614
	SA		0.84		
	AA		0.77		
Brand investment	RD	0.774	0.63	0.7745	0.4711
	AAC		0.70		
	PP		0.40		
	PRA		0.57		
Brand credibility	EP	0.857	0.72	0.8610	0.7650
	TW		0.71		
Brand awareness	RC	0.899	0.77	0.9020	0.7124
	RCE		0.77		
	FM		0.69		
Brand association	PV	0.899	0.75	0.8991	0.7490
	BP		0.86		
	OA		0.74		

Data source: This study.

freedom is 123, and we calculate that the $NFI = \chi^2/df$ is 5.02. The value of NFI is between 2 and 5, and NFI in our model is approximated to 5; consequently our model is well-settled (Anderson and Gerbing, 1988).

There are many different indices to examine the goodness of fit of a structural equation model besides the Chi-square test. The goodness-of fit index (GFI) is a measure of the relative amount of variance and covariance in sample data that is jointly explained by sample data (Jöreskog and Sörbom, 1984). If the model possesses a good fit, then the value is usually above 0.90. Moreover, the adjusted goodness-of-fit index (AGFI) adjusts for the number of degrees of freedom in the specified model. If the model possesses a good fit, then the value is usually above 0.80. Besides, the normed fit index (NFI) and comparative fit index (CFI) use an "independence model" as a basis of comparison by which to assess the hypothesized model. These values range from 0 to 1. In our model, CFI is 0.97, NNFI is 0.97, NFI

is 0.97, GFI is 0.86, and AGFI are 0.80, individually.

Note that we could adopt the CFI to judge the validity of the data, in spite of the lower values of CFI in this model. Anderson and Gerbing (1988) also propose a similar concept. Furthermore, the root mean square residual (RMSR) and *root mean square error of approximation* (RMSEA) provide information about the fit of the model with unknown but optimally chosen parameter values for the population covariance matrix, if it is available (Bagozzi and Yi, 1988). In our study, the RMSR is 0.052, which is near 0.05. The RMSEA is 0.099. The result of RMSR indicates a good fit.

The results of the structural model

Table 3 and Figure 2 show the structural model with the coefficient and almost significant relationship between variables, and variables follow the hypothesized direction.

Table 3. Empirical results of the hypotheses in structural model.

Hypothesized path	Coefficient	T-value	Non-Reject
H _{1a} : Susceptibility to global consumer culture → Brand credibility	$\beta_{1a}=0.59$	9.88**	Non-Reject
H _{1b} : Susceptibility to global consumer culture → Brand awareness	$\beta_{1b}=0.17$	2.28*	Non-Reject
H _{1c} : Susceptibility to global consumer culture → Brand association	$\beta_{1c}=0.43$	6.58**	Non-Reject
H _{2a} : Perceived brand globalness → Brand credibility	$\beta_{2a}=0.097$	2.13*	Non-Reject
H _{2b} : Perceived brand globalness → Brand awareness	$\beta_{2b}=0.48$	8.83**	Non-Reject
H _{3a} : Brand investment → Brand credibility	$\beta_{3a}=0.28$	4.73**	Non-Reject
H _{3b} : Brand investment → Brand awareness	$\beta_{3b}=0.19$	2.81**	Non-Reject
H ₄ : Brand credibility → Brand association	$\beta_4=0.36$	5.48**	Non-Reject
H ₅ : Brand awareness → Brand association	$\beta_5=0.27$	7.42**	Non-Reject
Indicator			
χ^2/df	5.02		
Comparative fit index (CFI)	0.97		
Non-normed fit index (NNFI)	0.97		
Normed fit index (NFI)	0.97		
Goodness of fit index (GFI)	0.86		
Adjusted goodness of fit index (AGFI)	0.80		
Root mean square residual (RMR)	0.052		
Root mean square error of approximation (RMSEA)	0.099		

Data source: This study. Note: Based on one-tailed tests: for t-values greater than 1.65 (*); for t-values greater than 2.33 (**). Data Source: This study.

These results provide us reasonable evidence for the model. Susceptibility to global consumer culture has an effect on brand credibility (H_{1a}: $\beta_{1a}=0.59$), brand awareness (H_{1b}: $\beta_{1b}=0.17$), and brand association (H_{1c}: $\beta_{1c}=0.43$). Perceived brand globalness significantly influences brand credibility (H_{2a}: $\beta_{2a}=0.097$) and brand awareness (H_{2b}: $\beta_{2b}=0.48$). Furthermore, brand investment has significant effect on brand credibility (H_{3a}: $\beta_{3a}=0.28$) and brand awareness (H_{3b}: $\beta_{3b}=0.19$). Mutual disclosure positively dominates the socio-psychological trust-building mechanism (H₃: $\beta_3=0.60$). Susceptibility to global consumer culture, brand credibility and brand awareness all influence brand association (H₄: $\beta_4=0.43$; H₅: $\beta_5=0.36$; H₆: $\beta_6=0.27$).

The method we utilized to examine the moderation effect was based on the study of Bell (2005). Hypotheses 4 and 5 stated that the brand credibility and brand awareness would be positively related to brand association. This is a test of the main effect of brand cognition on brand association. Both hypotheses were supported in that the effects of brand credibility ($\beta_5=0.36$, $t=5.48^{**}$) on brand association and brand awareness ($\beta_6=0.27$, $t=7.42^{**}$) on brand association were significant and positive.

With the main effects supported, we turn our attention to the moderation effect of perceived price on the aforementioned main effects. From our research, we found that the positive effect of brand credibility on brand association is bolstered for the brand with a perceived

high price ($\beta_{6a}=0.26$, $t=5.76^{**}$). The positive effect of brand awareness on brand association is also stronger for the brand with a perceived high price ($\beta_{6b}=0.22$, $t=4.98^{**}$). It means perceived price has a moderation effect on brand credibility (awareness) and brand association, and it also reveals Hypotheses 6a and b were supported.

Empirical analysis of rival models

It is generally agreed that researchers would investigate and compare rival models and not just inspect the goodness of fit of the hypothesized model (Bollen and Long, 1992). Bagozzi and Yi (1998) provide the necessity of the rival model. Furthermore, the model also can utilize the value of GFI, CFI, RMSEA and other relative indicators of the path coefficient for analysis (Bagozzi and Phillips, 1992). Sharma (1996) suggested that the difference of the χ^2 value be used to compare and examine the effectiveness of the rival model. Bagozzi and Yi (1988) think the value of χ^2 and χ^2/df are the most important. Hence, we emphasize these indicators of rival model analysis in our research.

In order to compare the three models, we obtain the various indicators as presented in Table 4. From the value of χ^2/df , we could determine that the original model is better than rival model one and two, because the value of χ^2/df in the original model is smaller than 5.87 and 5.24

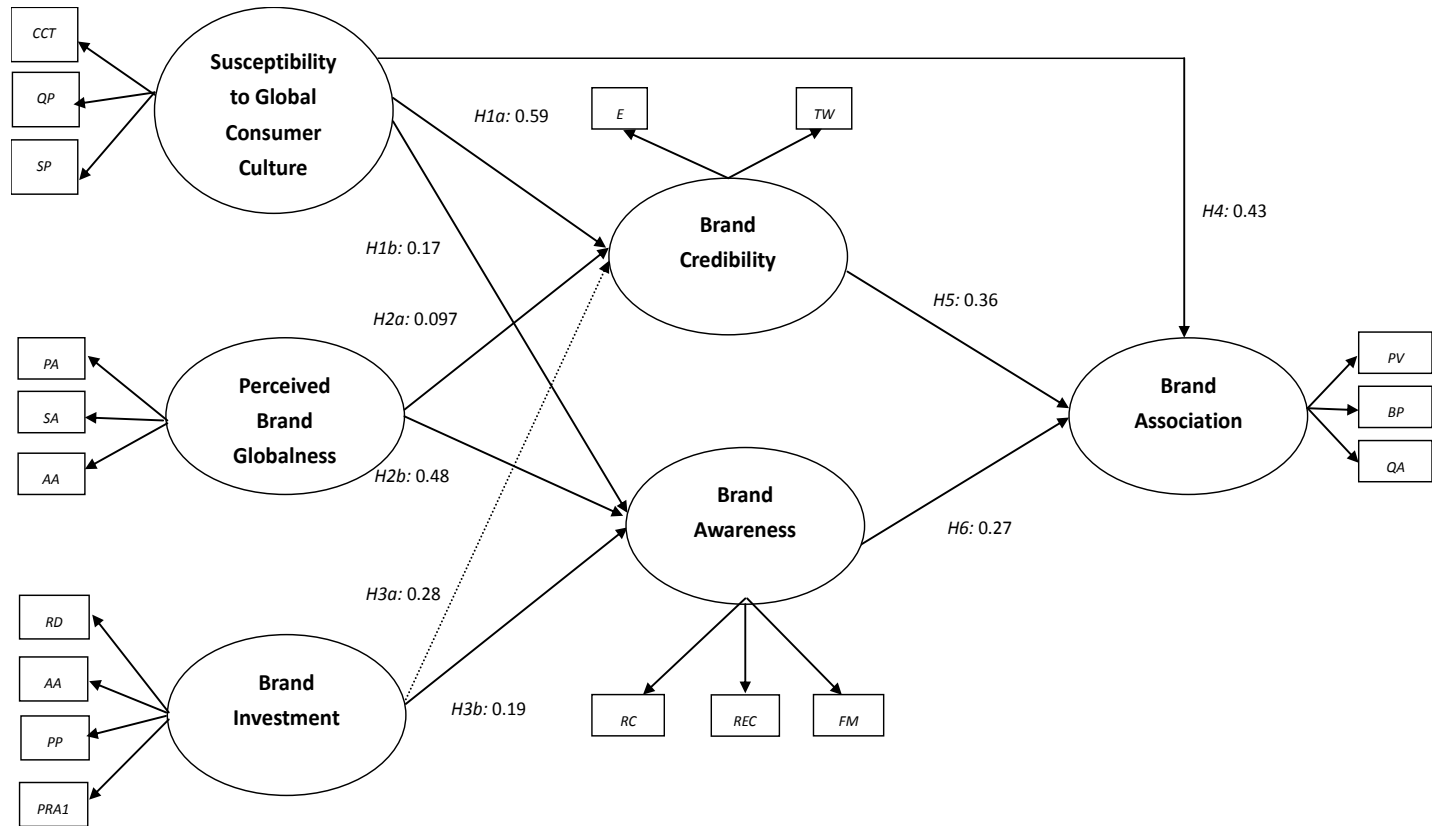


Figure 2. Path diagram of LISREL model.

in the two rival models. There is no obvious difference between the other indicators among the three models. However, the significant ratio is 100% of the original model is greater than 25% of rival model one and 82% of rival model two. Consequently, from the aforementioned comparison, we find that the original model proposed in our study is better than the rival model by means of the former indicators.

Conclusion

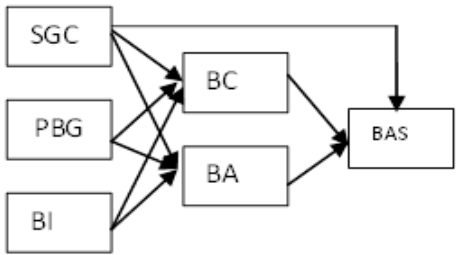
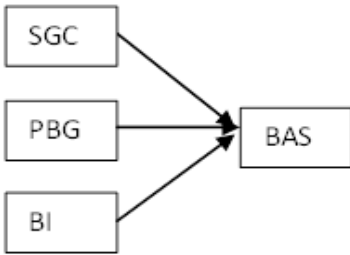
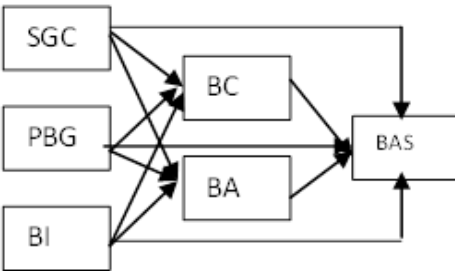
This research provides empirical evidence about the cause-effect relationship among brand management alternatives (SGCC, PBG and BI), brand cognition (BC and BA), and brand association to provide a reference for personal computer and notebook companies to build positive and powerful brand association in consumer minds. We have offered three brand management alternatives, including susceptibility to global consumer culture, perceived brand globalness of consumers, and brand investment to help personal computer and notebook companies to strengthen their brand association for consumers. From the empirical results, we determined that there are three main paths for personal

computer and notebook companies to influence consumer association in regard to their brands.

The first path is to understand the susceptibility to global consumer culture of consumer all over the world. From the perspective of culture, personal computer companies that are a global brand cannot ignore the powerful influence of global consumer culture on consumers worldwide. Consumers' preference for global brands would be due to different reasons: conformity to consumer trends, or quality perception and social prestige due to the influence of global consumer culture. Consequently, brand managers should not only understand the degree of sensitivity to global consumer culture of consumers all over the world but also realize the reasons why they greatly prefer global brands. It is useful for global personal computer and notebook companies to isolate market segments and provide appropriate brand strategies to consumers according to the different segments in order to strengthen positive brand association (Boisvert, 2011).

The second path is to increase perceived brand globalness and then strengthen the brand awareness of consumers. This means that global brand companies could increase the perceived brand globalness and brand awareness of consumers to reinforce their brand

Table 4. Empirical results of the rival model analysis.

Measurement indices	Original model	Rival model 1	Rival model 2
LISREL Structural model			
Significant ratio	100%	25%	82%
χ^2 / df	5.02	5.87	5.24
AGFI	0.80	0.78	0.80
CFI	0.97	0.97	0.97
GFI	0.86	0.85	0.86
RMSEA	0.099	0.11	0.098
RMR	0.052	0.052	0.052

Data source: This study.

association (Homburg et al., 2010; Boisvert and Burton, 2011). For example, brand managers could use various brand marketing methods including advertisements and sponsorship of important international events to increase their brand exposure worldwide. By doing so, they could fortify consumers' perceived brand globalness and brand awareness so as to affect brand association.

Third, brand investment is necessary to have a credible brand signal and build positive brand association. Brand managers could invest in R and D of products to improve on their functions and make them more stable and useful to users; they should use the media or conferences to explain these improved functions and enhanced stability. Consequently, personal computer and

notebook companies could invest in brands to ensure their brands fulfill the promises with regard to quality and functionality, thus ensuring credibility and building their positive brand association (Baek and King, 2011).

Hence, the aforementioned empirical results and discussion indicate that brand managers could use three superior methods in order to influence consumers' brand association (Baek et al., 2010). First, the most useful method is to understand consumers' susceptibility to global consumer culture. The second is to increase perceived brand globalness and brand awareness and then strengthen brand association. The final way is through brand investment to make the brand credible and then build positive brand

association.

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Appendix. The questionnaire of this study.

Variable	Construct	Items
Susceptibility to global consumer culture	Conformity to consumption trend	<ol style="list-style-type: none"> 1. This brand gives the satisfaction of being part of a social group consumption trend 2. This brand gives one a sense of global belonging. 3. This brand gives one a good impression of others. 4. This brand makes one feel closer to the contemporary lifestyle. 5. This brand makes one feel part of the global trend.
	Quality perception	<ol style="list-style-type: none"> 1. This brand has a very high quality image. 2. This brand has a very high level of reliability. 3. This brand has a very high safety standard 4. This brand is associated with the latest technology. 5. This brand is associated with long-lasting quality.
	Social prestige	<ol style="list-style-type: none"> 1. This brand signifies one's trendy image. 2. This brand symbolizes one's social image. 3. This brand is associated with a symbol of prestige. 4. This brand tells something about one's social status.
Perceived brand globalness	Performance attribute	<ol style="list-style-type: none"> 1. I do think consumers overseas buy this brand 2. This brand is sold all over the world 3. The marketing activities of this brand could be found frequently overseas
	Structure attribute	<ol style="list-style-type: none"> 1. The corporation of that makes brand has many branches all over the world 2. The corporation of that makes this brand has sale outlets overseas 3. The branches of this brand's maker are dispersed in different countries of the world
	Attitudinal attribute	<ol style="list-style-type: none"> 1. The corporation that makes this brand has much management experience in internationalization. 2. The corporation that makes this brand has been prosperous globally 3. To me, this is a global brand
Brand investment	R&D/Innovation	<ol style="list-style-type: none"> 1. This brand spends much money on R&D activities 2. This brand frequently introduces new product on the market 3. This brand often updates its product function to meet consumers' needs
	Advertising activities	<ol style="list-style-type: none"> 1. This brand is frequently advertised 2. The advertisement campaigns for this brand are very expensive, compared with other competitive brands 3. The ad campaigns for this brand last for a long while
	Consumer and price promotions	<ol style="list-style-type: none"> 1. This brand always employs price promotions 2. When this brand uses price promotions, the promoted price is more than 10% lower than the original price 3. You always get other gifts when you purchase this brand
	Public relation activities	<ol style="list-style-type: none"> 1. One frequently gets information about this brand from the newspaper, TV, or radio station. 2. This brand often holds press conferences to announce news. 3. This brand often takes part in trade fairs. 4. This brand is often a sponsor of public welfare activities.

Appendix. Contd.

	Expertise	<ol style="list-style-type: none"> 1. This brand reminds me of someone who's competent and knows what he/she is doing. 2. This brand has the ability to deliver what it promises. 3. This brand could provide clear, orderly and expert information
Brand credibility		
	Trustworthiness	<ol style="list-style-type: none"> 1. This brand delivers what it promises. 2. This brand's product claims are believable. 3. Over time, my experiences with this brand have led me to expect it to keep its promises, no more and no less. 4. This brand has a name you can trust. 5. This brand does not pretend to be something it is not
	Recall	<ol style="list-style-type: none"> 1. I am aware of this brand 2. When I think of notebook, this brand is one of the brands that comes to mind 3. I think the awareness of this brand is high
Brand awareness	Recognition	<ol style="list-style-type: none"> 1. I know what this brand looks like 2. I know what this brand stands for
	Familiarity	<ol style="list-style-type: none"> 1. I have an opinion about this brand 2. I can recognize this brand amongst other competing brands of notebook
	Perceived value	<ol style="list-style-type: none"> 1. This brand is the one I am very familiar with in the notebook market 2. I often see advertisements for this brand I have used this brand personally before
	Perceived value	<ol style="list-style-type: none"> 1. This brand is good value for money 2. Within notebook brands I consider this brand a good buy 3. Considering what I would pay for this brand, I would get much more than my money's worth
Brand association	Brand personality	<ol style="list-style-type: none"> 1. This brand has a personality 2. This brand is interesting 3. I have a clear image of the type of person who would use this brand
	Organizational associations	<ol style="list-style-type: none"> 1. I trust the company which makes this brand 2. I like the company which makes this brand 3. The company which makes this brand has credibility
