Online Consumer Behavior:

A Comparison between Canadian and Chinese Website Visitors

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Abstract

Zajonc's (1980) theory of emotions and Mehrabian and Russell's (1972) Stimulus-Organism-Response (SOR) framework were used to develop a model of online customer behavior. The model examines the impacts of the three types of emotions (pleasure, arousal, and dominance) on perceptions of site atmospherics (informativeness, effectiveness, and entertainment). In turn, the associations of site atmospherics on site attitudes, site involvement, service attitudes, and purchase intentions are investigated. The model is compared between Canadian and Chinese customers based on Hofstede's (1991) cultural value dimensions. The findings supported the model and revealed several non-invariant paths between the groups. Particularly, the impact of pleasure (dominance) on the other behavioral variables was higher for Canadian (Chinese) compared to Chinese (Canadian) customers. Moreover, the impacts of low (high) task relevant cues were stronger for Chinese (Canadian) customers compared to their Canadian (Chinese) counterparts. Discussion centers on the theoretical and practical implications of the findings.

Key words: Emotions, cognitions, Canada, China, Internet, atmospherics

1. Introduction

Many experts elaborated on how the Internet has changed the buying environment (Varadarajan and Yadav, 2002). The most important change is the greater availability of information. Thanks to the Internet, customers are able to collect information on choice alternatives, prices, details, and features of products like never before. Given that one's purchase decision is based on information obtained in the pre-purchase stage, it is very important for marketers to investigate information search behavior (Bhatnagar and Ghose, 2004). Customers surf a website if they perceive it as informative, useful and entertaining. Therefore, the most important challenge for website designers is how to develop sites that customers perceive as "informative" and "entertaining".

Psychologists suggested that emotions are associated with customers' information-processing strategies. Forgas (1998) found that positive affect induced less systematic attention to stimulus information and greater reliance on top-down inferences. On the other hand, negative affect led customers to be more careful and systematic in processing information (Clore, Shwarz, and Conway, 1994; Shwarz, 1990). Therefore, it is vital to investigate the impacts of emotions on perceptions of site characteristics.

Consistent with the Mehrabian and Russell (1972) Stimulus-Organism-Response framework (SOR)-used by Eroglu, Machleit, and Davis (2001) in online marketing-past studies showed that website interfaces such as site background music, color, and text font impact emotions (Davis, Wang, and Lindridge, 2008). Surprisingly, only few studies investigated the influence of emotions on other variables. Thus, we try to fill this gap by proposing that aroused emotions from the site initial exposure are associated with perceptions of site atmospherics which in turn impact attitudes, involvement, and purchase intentions.

Our second goal was to compare the model between Chinese and Canadian cultures. Given the wide reach of the Internet and the fact that culture impacts responses to store atmospherics (Davice, Wang, and Lindridge, 2008), it is crucial to explore the role of culture in reactions to online store atmospherics (Cole and O'Keefe, 2000, Chen and Tai, 2001).

The article is organized as follows. First, from the literature the model is developed. We discuss the influences of the three types of emotions on perceptions of environmental cues. Then, the impacts of these environmental cues on site attitudes, site involvement, service attitudes, and purchase intentions are discussed. Next, we develop hypotheses on path invariances between the two cultures, describe the data and empirical analyses used to test the model and hypotheses. Finally, results, conclusions, discussions, limitations and future research directions are discussed.

2. Conceptual Framework

In this section, we introduce the model presented in Figure 1.

[Figure 1]

2.1 Site atmospherics and site interfaces

In retailing contexts, Baker (1987) and Baker et al. (1994) suggested that atmospherics are more influential than other marketing inputs that are not present at the point of purchase. This influence should be more important online as the environment is a small screen and customers have control over "which web pages to browse, for how long, and how much information to obtain" (Dholakia and Rego, 1998, p. 725).

Online studies focused on the role of site atmospherics on behavior (Eroglu, Machleit, and Davis, 2003; Hausman and Siekpe, 2009; Richard, 2005). Hauman and Siekpe (2009) used global search feature, humor, language options, gift services, and security indication to manipulate the website environment. Mummalaneni (2005) used characteristics such as large-

small, roomy-cramped, colorful-drab, well organized-unorganized layout, and good-bad displays to measure the site design. Eroglu, Machleit, and Davis (2003) used product photos, ordering policy, customer feedback, text color, and employee photographs to manipulate high- and low-task relevant cues. Finally, Richard (2005) measured navigational characteristics, site informativeness, effectiveness, and entertainment as website atmospherics.

Thus, one can divide site environmental features into two categories. First, site features that are manipulated ("interface features"), such as font, color, text size, background music, and colors. Davis, Wang, and Lindridge (2008) found that background colors, animated icons, and visual cues influenced pleasure and arousal. All these features were considered "stimuli" and impacted emotions automatically and subconsciously (Eroglu, Machleit, and Davis, 2001).

Second, we have site characteristics that are measured and need to be evaluated, such as site informativeness and effectiveness. Customers use cognitions to evaluate these characteristics called "atmospherics" in our study. Eroglu, Machleit, and Davis (2001) and Richard (2005) categorized the atmospherics into two groups: high- and low-task relevant cues. High-task relevant cues are site descriptors on the screen which facilitate the shopping goal attainment and low-task relevant cues are "relatively inconsequential to the completion of the shopping task" (Eroglu, Machleit and Davis, 2001, p. 180).

We chose two high task-relevant cues (site informativeness and effectiveness of information content) and one low task-relevant cue (site entertainment). Eighmey (1997) defined the internet as an "infotainment" medium since information and entertainment are two essential elements of websites. Informativeness is the ability of a website to make information available (Hoffman and Novak, 1996). An entertaining website is fun, exciting, cool, and imaginative (Chen and Wells, 1999). Although informativeness is an important characteristic, the way that

information is provided and the type of information are also important. Consistent with Richard (2005), we used "effectiveness of information content" to reflect if the information is accurate, up-to-date, complete, and relevant to visitors (Bell and Tang, 1998).

2.2. Emotions

Environmental psychologists found that consumers responded to dimensions of the physical surroundings emotionally and cognitively (Mehrabian and Russell, 1974). Emotions were recognized as important in human response to environmental settings and as a guide to behavior (Hull and Harvey, 1989) and site interface features such as colors, lighting, or music were found to impact emotions (Menon and Kahn, 2002; Morin, Dube, and Chebat, 2007; Vrechopoulos et al., 2004).

Positive and negative affects were associated with customer information-processing strategies (Clore, Schwarz, and Conway, 1994). Positive emotions were associated with heuristic information-processing strategies and negative emotions with systematic elaboration of information (Clore, Schwarz, and Conway, 1994). For Rapoport (1982) "people react to environments globally and affectively before they analyze and evaluate them in more specific terms" (p.14), and feelings are first aroused which provided a background for more specific images (Rapoport, 1977).

As such, we propose that online customers' emotions impact their perceptions of site informativeness, effectiveness, and entertainment. Thus, depending on the emotional states that arise at the initial exposure to the site, a customer may perceive differently the levels of site atmospherics. This is consistent with Zajonc (1980) who proposed that "affect should not be treated unalterably and invariably postcognitive" (p. 172). He argued that affective reactions are independent of perceptual and cognitive operations and can influence responses. We propose that

customers' emotions precede their perceptions of site atmospherics.

Mehrabian and Russell's (1974) three types of emotions (PAD: pleasure, arousal, and dominance) were designed to capture emotional responses to environmental stimuli (Richins, 1997). This is the most often used framework to measure emotions in this context. Pleasure is the degree to which someone feels good, joyful, happy, or satisfied, and is an indicator of website "likeability" (Poels and Dewitte, 2008). Arousal is the degree to which someone feels stimulated, active, or alert and is an indicator of website "motivational power" (Poels and Dewitte, 2008). Dominance is the degree to which someone feels controlling, influential, free or autonomous and is an indicator of website "controlling power."

Russell (1979) stated that pleasure and arousal can adequately represent the range of emotions exhibited in response to environmental stimuli. However, in online contexts, customers are in greater control of choosing and processing information; therefore, dominance becomes a relevant emotional response (Eroglu, Machleit, & Davis, 2001) and is included in the model.

In this study, we used a "dimensional approach" and hypothesized that three emotional dimensions are positively associated with perceptions of environmental cues, namely site informativeness, effectiveness, and entertainment (H1a to H3c in Figure 1). Mehrabian and Russell (1974) stated the three types may exhibit correlation. Therefore, we allow covariances among them.

2.3 Attitudes, involvement, and purchase intentions

Eroglu, Machleit and Davis (2001) used Mehrabian and Russell's (1974) Stimulus-Organism-Response (SOR) framework in their conceptual model. They suggested that online atmospherics influenced the responses of online shoppers through the intervening effects of affective and cognitive states. In line with previous studies (Eroglu, Machleit and David, 2003;

Hausman and Siekpe, 2009; Richard and Chandra, 2005), we proposed that perceptions of website atmospherics were positively associated with site attitudes and site involvement (H4a to H6b in Figure 1). We did not hypothesize the association of site informativeness with site attitudes as many studies did not find such relationship (Dholakia and Rego, 1998; Richard, 2005). We proposed that the informativeness of the website did not directly impact site attitudes. Effectiveness of information content was the variable which impacted attitudes.

Moreover, we proposed that effectiveness of information positively impacted site informativeness (H4c). In other words, if the information provided on the site is accurate, up-to-date, and relevant, customers perceived the site as more informative. In addition, purchasing decisions are directly impacted by the information used (Keaveney and Parthasarathy, 2001). Therefore, the ability of a website to provide information influenced purchase intentions and we expected a positive association between site informativeness and purchase intentions (H5a).

Following Chan and Li (2009) and Jee and Lee (2002), we assumed that websites reflected the characteristics of traditional advertisements, as they are crafted in the same way an ad is created. Websites can be seen as an important source of cues that form attitudes toward the service providers before consumption. Thus, we proposed that site attitudes were positively associated with service attitudes (H7).

In website navigational contexts, site involvement may be considered as situational involvement and is comparable to message involvement in advertising (Richins and Bloch, 1986). Highly site-involved customers interact more with the website and try more interactive functions (Yoo and Stout, 2001). These interactions make customers more familiar with the website and are expected to increase their site attitudes and purchase intentions (H8a and H8b).

Finally, product attitudes are an important concept in marketing as its link to purchase

intentions was found (Oliver, 1986). Therefore, service attitudes and purchase intentions are expected to be associated positively (H9).

3. Cross-cultural Comparisons

There are calls for more cross cultural comparisons of accepted models and theories. Culture reflects the preferences and attitudes of people. It is known that "culture may provide detailed prescriptions (norms) for specific classes of situations…" (Tse et al., 1988, p. 82). Thus, culture is an obstacle for generalizing the findings; and replications of studies should be considered in other cultures to observe similarities and differences. Most cross-cultural studies reported differences across cultures (e.g. Aaker, 2000; Moon, Chadee and Tikoo, 2008; Steenkamp, Hofstede, and Wendel, 1999; Takada and Jain, 1991). Particularly, culture was reported as an influential element in responses to store atmospherics (Davis, Wang, and Lindridge, 2008). Therefore, it is vital to test the model across cultures.

Hofstede (1991) defined culture as the "collective programming of the mind which distinguishes the members of one group or category of people from those of another" (p. 4). Most marketing studies adopted this framework in which national cultures are differentiated on five dimensions: power distance, masculinity/femininity, long-term/short-term orientation, uncertainty avoidance, and individualism/collectivism. China and Canada obtained different scores on almost all dimensions (see Table 1). We used four dimensions to hypothesize the difference between these two cultures. Given that both countries falls in the middle of the masculinity-femininity scale, we did not anticipate differences on this dimension.

[Table 1]

Individualism is the extent to which the members of a society pursue primarily their own interests rather than that of others (Hofstede, 1991). In collectivist societies individuals look after

the interests of their group before themselves. Individualist customers are high on self reliance, competitiveness, aggressive creativity, conformity, and insecurity (Hsu, 1983). Canada scored high and China scored low on this dimension.

Many studies in psychology compared the role of emotions across cultures. In general, emotional features are stronger in individualistic societies (e.g. Schimack et al., 2002). Hsu (1983) used "low emotionality" as one characteristic of collectivism. Moreover, Triandis (1995) stated that collectivism emphasizes social norms and duty defined by the group rather than "pleasure" seeking. Steenkamp and Geyskens (2006) hypothesized that in individualistic cultures, the effect of emotional experience is larger than in collectivistic cultures. They used two dimensions of emotions (pleasure and arousal) and found support for "pleasure". Based on previous studies, we expected to find significant differences on the "pleasure" dimension:

> **H10**: The impact of pleasure on *(a)* site effectiveness, *(b)* site informativeness, and *(c)* site entertainment is stronger for Canadians compared to their Chinese counterparts.

Power Distance is the extent to which a society accepts unequal distribution of power (Hofstede, 1991). Larger power distance implies a greater tolerance of disparity of distribution of wealth and power in a society. China scored high on power distance; whereas, Canada scored low. At work, the role of the manager in a high power distance culture is to initiate structure and tell people what to do rather than ask for their views. Therefore, in high power distance societies people are more task-oriented and less people-oriented (Hofstede, 1980). In the online context, we hypothesized that dominance should be the most influential element for the customer in a high power distance society. Thus, for task-oriented customers, feeling of "control" in doing the task is more important compared to people-oriented customers. The task is to obtain the required information from the website. Therefore, we hypothesize that:

> **H11**: The impact of dominance on *(a)* site effectiveness, *(b)* site informativeness, and *(c)*

site entertainment is stronger for Chinese customers compared to their Canadian counterparts.

Long-term orientation is the extent to which members of a society place great significance on the values of thrift, persistence, and long term alliances (Hofstede, 1991). Societies with short-term orientation value personal steadiness and stability, saving face, favors, and gifts (Hofstede, 1991). For Hofstede (1991), China scored the highest in long-term orientation and Canada's score is among the lowest. Furrer, Liu, and Sudharshan (2000) found that long term orientation was associated with responsive and reliable service. Thus, we expected customer in long-term oriented societies to have higher expectations about the amount of information and effectiveness of information provided in the website. In other words, the influences of site informativeness and site effectiveness on other variables-site involvement, site attitude, and purchase intentions-are expected to be stronger for Canadians than for Chinese.

In addition, Canada scored higher in uncertainty avoidance than China (Hofstede, 1991). *Uncertainty avoidance* is the extent to which members of a society feel threatened by uncertain or unknown situations (Hofstede, 1991). Customers in a high uncertainty avoidance culture tend to avoid uncertain situations. People with low uncertainty avoidance have more tolerance for risk. Canada marginally scored higher than China (see Table 1). Therefore, Canadians would attempt more to minimize uncertainty. Seeking and collecting additional information is a strategy to reduce the level of uncertainty and risk involved in purchasing decisions (Murray, 1991). Therefore, the impacts of site informativeness and effectiveness of information content on site attitudes, site involvement, and purchase intentions are expected to be higher for Canadians compared to the Chinese.

Moreover, individuals from different cultures tend to focus on different types of cues (Mattila, 1999). Individualism emphasizes more individual responses to context rather than

context and cues. Considering the nature of individualism and collectivism, Davis, Wan, and Lindridge (2008) found that high task cues-the site descriptors on the screen which facilitate shopping goal attainment-were more central to the decision-making process for individualistic customers. Based on this discussion of the three cultural dimensions, we hypothesized that:

> **H12.** The impact of site effectiveness on *(a)* site attitudes, *(b)* site involvement, and *(c)* site informativeness is greater for Canadians than for the Chinese.

> **H13.** The impact of site informativeness on *(a)* site involvement and *(b)* purchase intention is greater for Canadians than for the Chinese.

The symbolic-subjective culture of collectivism is context sensitive; therefore, collectivistic customers rated the low task cues-the site descriptors that are not consequential to the completion of shopping task-as more helpful (Davis, Wan, and Lindridge, 2008). We expected to find the impacts of site entertainment, a low task cue, on site attitudes and involvement to be stronger for Chinese than for Canadians:

> **H14.** The impact of site entertainment on *(a)* site attitudes and *(b)* site involvement is greater for the Chinese than for Canadians.

Compared to Canada, China scored higher on "long-term orientation." Long-term oriented individuals emphasize persistence and long-term alliances (Tsikriktsis, 2002). Moreover, collectivism is a high context culture and emphasizes causal reasoning and forming perceptions about social contexts and situational constraints (Davis, Wan, and Lindridge, 2008). As a result, the associations of site attitudes with service attitudes and site involvement with site attitudes are expected to be higher for Chinese customers. Therefore, we hypothesized that:

> **H15.** The impact of site attitudes on service attitudes is greater for Chinese than for Canadians.
> **H16a.** The impact of site involvement on site attitudes is greater for Chinese than for Canadians.

Individualistic customers tend to make their decisions based on their own interests. In an

individualistic society, attitudes and behaviors are regulated by individual preferences (Triandis, 1989). On the other hand, attitudes and behaviors in a collectivist society are largely influenced by society's preferences (Triandis, 1989). Therefore, we argue that Canadians make their purchasing decisions faster. If they like the service (higher attitudes) and are involved in the website, the chance that they would purchase the product or service would be higher. For the Chinese, purchasing decisions are more complex. They have to consider their group interests beside their own. Therefore, we expected the impacts of service attitudes and site involvement on purchase intentions to be greater for Canadians.

> **H16b.** The impact of site involvement on purchase intentions is greater for Canadians than for Chinese.
> **H17.** The impact of service attitudes on purchase intentions is greater for Canadians than for Chinese.

4. Methodology

For testing the hypotheses, we used real websites of service providers in 8 different industries: hotels, online bookstores, dental services, banks, vacation destination, restaurants, financial investments, and plastic surgery. We selected four websites for dental services, two for online bookstores, four for restaurants, two for financial investments, four for hotels, four for plastic surgery, three for vacation destinations and sites for banks.

Data were collected online using a computer lab in a Northeastern university. Subjects were randomly assigned to one of the twenty five websites. They were exposed to a real website of a service company and were asked to surf the site and collect information for at least 5 minutes. The duration of completing the survey was monitored and the subjects who visited the site and completed the questionnaire in less than 15 minutes were eliminated. After the eliminations, our sample consisted of 234 Chinese (54% female and 46% male) and 350 Canadians (58% female and 42% male) subjects. Most respondents were undergraduate students

(98.3% of Chinese and 98.9% of Canadians) between the ages of 18 and 24 (75% of Chinese and 80% of Canadians).

5. Measurement

The questionnaire contained several measures addressing the research questions. Most scales were adapted from the literature. Mehrabian and Russell's (1974) PAD scale for emotions was used to measure pleasure, arousal, and dominance. Chen and Wells' (1999) scales were used to measure website entertainment (4 items) and informativeness (4 items). Effectiveness of information content was measured by a 5-item scale adopted from Bell and Tang (1998). Eighmey's (1997) scale for attitudes was modified to a 5-item scale for website and service attitudes. Website involvement was measured by a 6-item scale (Muehling, Stoltman, and Grossbart, 1990). Finally, a 4-item scale for purchase intentions was adopted from Dodds (1991). Five point Likert scales were employed to indicate the respondent's levels of agreement or disagreement with each statement.

6. Results

6.1. Test of Reliability and Confirmatory Factor Analysis (CFA)

Given the high number of variables, we first ran an exploratory factor analysis on all 42 items. The results of EFA demonstrated that all items, except two, had high primary loading (higher than .60) and low cross loadings (lower than .35). Two items of arousal were eliminated because of cross loadings. The Cronbach's alphas for all constructs were in the acceptable range.

Then, we ran CFA by specifying the factor model including all 10 variables used for each cultural group. The loadings and R-squared for all items were in the acceptable range (Table 2). The results of the CFA demonstrated good measurement fit for both groups: the chi-square, NNFI, CFI, and RMSEA have values of 1873(df=853), .976, .978, and .059 for the Canadian

sample and 1534(df=853), .975, .978, and .059 for the Chinese sample. Given the number of analyzed items and factors, the model fit parameters are in the acceptable range (Baumgartner and Homburg, 1996).

[Table 2 here]

For convergent validity, the average variance explained (AVE) by each factor was calculated (second column, Table 3). All factors had AVE higher than .50 demonstrating that a construct share more variance with its indicators than with error variances (Fornell and Larker, 1981). For discriminant validity, the correlations between factors and square root of the AVE are compared (Table 3). The square root of AVE for each factor was greater than the correlations between that factor and all other factors, exhibiting appropriate discriminant validity (Fornell and Larker, 1981).

[Table 3]

6.2. Tests of Hypotheses

To test the hypotheses, multiple-group analysis in EQS was employed. First we examined the factor loading invariance across groups (Bollen, 1989). Bentler (1988) noted that without factor loading invariance, it is difficult to argue that the factors are identical across different groups. Steenkamp and Baumgartner (1998) also stated that metric invariance should be established across groups before comparing the strengths of the path coefficients. As a result, measurement level constraints were introduced before testing for causal path invariances (Byrne, 1994).

Table 4 summarizes the results. Fit parameters demonstrated a good fit for all models. Model 1 was the least restrictive, and models 2 to 4 were nested in model 1. When we constrained all the loadings, the model did not significantly improve. The multivariate LMχ^2

statistics and related *p*-values revealed two non-invariant factor loadings: one items of dominance and one item of site attitudes. Releasing these two constraints (Model 3) produced a satisfactory measurement model that was invariant across the two groups. The Chi-square difference between model 3 and the baseline model was 36 with 29 degree of freedom ($p>.10$). Therefore, partial metric invariance was supported.

[Insert Table 4 here]

By constraining the paths to be invariant across the two groups, the model did not improve (Model 4 in Table 4). Therefore, the paths are non-invariant. After testing the measurement invariance across groups, the Lagrange test was used to find the differences (Bentler, 2004). The multivariate test determines a simultaneous effect of several restrictions in the model and was used to test the hypotheses. The null hypothesis for each constraint is that the constraint is true in the population involved. Therefore, the low probability value of the Lagrange test statistic indicates that the constraint is unreasonable. The results of the multivariate Lagrange test are presented on Table 5. All hypotheses are directional.

[Table 5]

6.3. Results of multiple-group analyses

Results of multiple group analyses suggested that most paths (18/20) were significant in at least one culture; however, the strengths of the paths were not invariant across the groups. Contrary to our model, the impacts of site effectiveness on site involvement (H4b) and arousal on site effectiveness (H2a) were not significant in either group. Also, the impact of dominance on site informativeness (H3b) was not significant for the Chinese and was negative for Canadians.

We found that the impacts of the three emotions vary between the cultures. In line with

our hypotheses (H10a, H10b, and H10c), pleasure had stronger impacts on customers' site informativeness, effectiveness, and entertainment for Canadians. Interestingly, contrary to our hypothesis (H11a, H11b, and H11c), the influence of dominance on these variables was greater for the Chinese. Consistent with previous studies, the impact of arousal on other variables was invariant between cultures.

Moreover, the impacts of high task cues on customer behavior variables were greater for Canadians than for the Chinese. In line with our hypotheses, the impacts of site effectiveness on site attitudes, site informativeness on site involvement, and site informativeness on purchase intentions were greater for the Canadians (.318, .577, and .150 respectively) compared to the Chinese (.125, .401, .083 respectively) supporting H12a, H13a, and H13b.

On the other hand, the impacts of entertainment on site attitudes and site involvement were found to be significantly higher for Chinese respondents (.577 and .444) compared to the Canadians (.376 and .156) supporting H14a and H14b. Moreover, in line with hypothesis H15, the impact of site attitudes on service attitudes was found to be stronger for the Chinese (.601) compared to Canadians (.474).

The impacts of site involvement on site attitudes and purchase intentions and also service attitudes on purchase intentions were invariant between the two cultures, failing to support H16a, H16b, and H17.

7. Conclusion and discussion

The purpose of this study was to propose a model of online customer behavior in services marketing and to compare all the relationships between Chinese and Canadian cultures. Most paths (18/20) were significant in at least one group. Moreover, half of the 18 significant structural paths were invariant between the cultures. Given that our Chinese respondents were

students in Canada, we expect to find even larger differences if we use mainland Chinese.

Our major theoretical contribution was to distinguish between two groups of website features. The first group-website interfaces- can be considered as stimulus and influence shoppers' emotions at the initial exposure. The second group-site atmospherics-are influenced by the three types of emotions.

The results of multiple-group analysis suggested that two types of emotions (pleasure and dominance) influenced other behavioral variables differently in the two cultures. Living in an individualistic society, pleasure was the most influential type of emotions for Canadian customers. On the other hand, dominance was the key type of emotions for the more task-oriented customers and its influences on the other cognitive and affective variables were stronger for the Chinese than for Canadians. These findings suggest that website designers should use different techniques to increase visitors' feelings of pleasure and likeability of the website for Canadian and feeling of control over the website for Chinese customers.

Consistent with our hypotheses, the impact of *low task relevant cues* on site attitudes and site involvement were stronger for the Chinese who live in a long-term oriented, low uncertainty avoidance, and collectivistic society. On the other hand, living in a short-term oriented, high uncertainty avoidance, and individualistic society, Canadians rely more on the *high task relevant cues* to form their site attitudes, being involved in the site, and making a purchase decision. It could be interpreted that service providers should increase the hedonic aspects of the website for the Chinese and the utilitarian aspects for Canadians.

Given the Chinese emphasis on persistence, long-term alliances and causal reasoning, the association of site attitudes and service attitudes was found to be stronger for the Chinese compared to Canadians. Therefore, increasing customers' attitudes toward the website can be

considered as a competitive advantage for service providers who target the Chinese.

The findings suggested that the impacts of site involvement and service attitudes on purchase intentions were not significantly different between the cultures. Based on the individualism/collectivism dimension, we hypothesized these relationships to be stronger for Canadians. However, in a society with high uncertainty avoidance, customers tend to create more "formal rules" for their decisions (Moon, Chadee, and Tikoo, 2008). Even though, Canadians make decisions based on self-interests, rules for the decision can be established. As a result, the influence of site involvement and service attitudes on purchase intentions became invariant between the groups.

Also, our findings did not support the influence of site effectiveness on site involvement. For some services, effectiveness of information content may allow customers to obtain the required information faster and more conveniently. In many cases, the faster they get their information, the faster they leave the website and the lower is their level of involvement. The wide range of services that we used might explain this contradictory finding. Future research should explore the moderating impact of service type in this relationship.

8. Limitations and future research

To interpret the results, one should consider the limitations of this study. We used a wide range of service websites. The only disadvantage is that we were not able to control for all variables. For example, the type of service might have a moderating effect on the site effectiveness and site involvement relationship. Future research should investigate the role of service type on the impact of effectiveness of information content on site involvement.

Most respondents were students. Given their familiarity with internet technology, this group uses the Internet the most. However, one should be cautious about generalizing these

findings to other segments of the population. Future research might investigate the possible moderating impact of age and/or social status on online customer behavior.

The final limitation is choosing the Chinese sample. They were all students in Canada. Using real customers from China may provide even greater differences.

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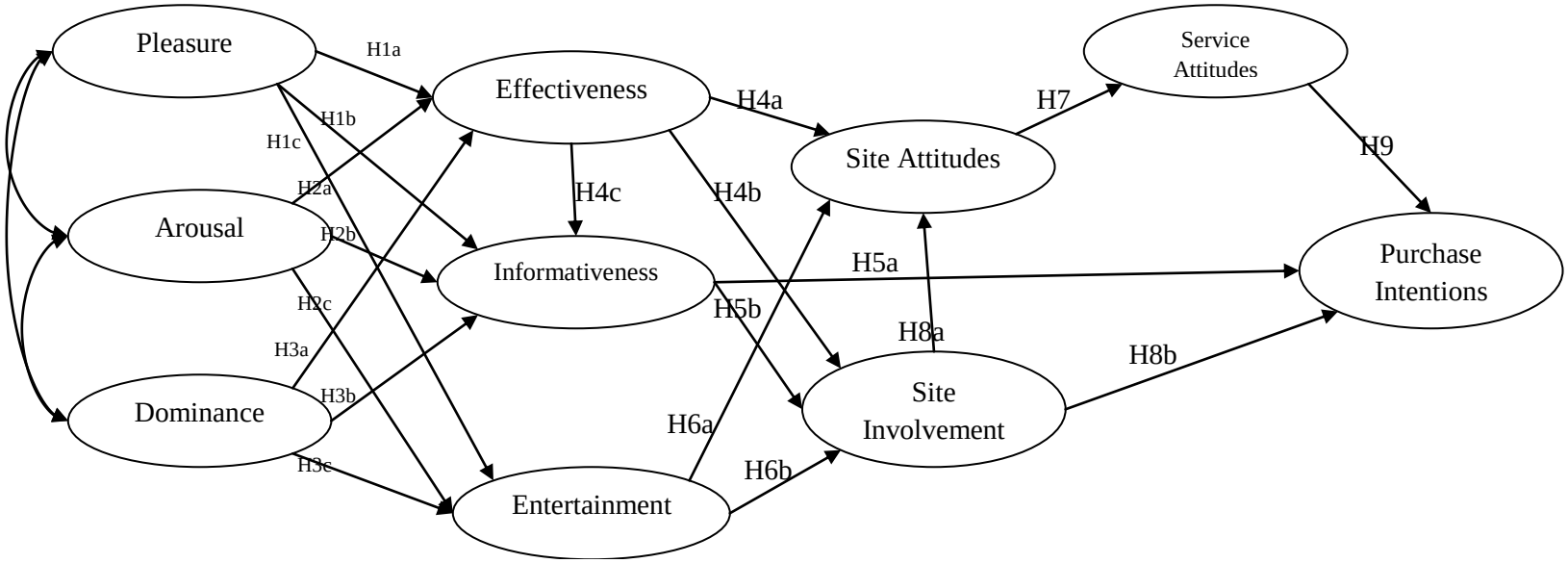

Figure 1. Proposed Model of Online Consumer Behavior
χ^2=2937, df =1510, χ^2/df=1.9, NNFI=.977, CFI=.979, RMSEA=.040

Dimensions	Canada	China
Power Distance	39	80
Masculinity	52	66
Long-Term Orientation	23	118
Individualism	80	20
Uncertainty Avoidance	48	30
Table 1. Hofstede scores for Canada and China		

Constructs	Items	Factor Loadings		R-Square	
		Canadian	Asian	Canadian	Asian
Arousal	Relaxed--- Stimulated	0.85	0.67	0.72	0.44
	Calm --- Excited	0.89	0.88	0.76	0.78
Pleasure	Unhappy--- Happy	0.74	0.71	0.54	0.51
	Annoyed --- Pleased	0.89	0.86	0.78	0.74
	Dissatisfied --- Satisfied	0.89	0.78	0.79	0.61
	Despairing --- Hopeful	0.79	0.83	0.62	0.69
Dominance	I felt that I had a lot of control over my visiting experiences at this site	0.83	0.52	0.68	0.27
	While I was on this site, I could choose freely what I wanted to see	0.81	0.76	0.66	0.58
	While surfing the web, I had absolute control over what I could do on this site.	0.75	0.69	0.56	0.48
	While surfing the web, my actions decided the kind of experiences I got on this site	0.77	0.75	0.59	0.56
	While I was on this site, I controlled what happened in my online information searches	0.80	0.75	0.63	0.57
Site Informativeness	This site is informative to me	0.89	0.87	0.79	0.76
	This site is resourceful to me	0.92	0.92	0.85	0.85
	This site is useful to me	0.86	0.86	0.74	0.74
	This site is knowledgeable for me	0.87	0.70	0.75	0.49
Effectiveness of Information Content	The information on this site is convenient	0.77	0.77	0.59	0.60
	The information on this site is accurate	0.87	0.79	0.75	0.62
	The information on this site is up-to-date	0.84	0.75	0.71	0.56
	The information on this site is complete	0.77	0.70	0.59	0.49
	The information on this site is relevant	0.84	0.78	0.71	0.61
Site Entertainment	This site is fun to browse	0.90	0.91	0.82	0.83
	This site is exciting	0.95	0.90	0.91	0.80
	This site is imaginative	0.85	0.84	0.73	0.71
	This site is entertaining	0.91	0.87	0.83	0.76
	This site is flashy	0.69	0.76	0.48	0.57
Site Attitudes	This site is bad --- good	0.85	0.86	0.73	0.74
	I dislike---like this site	0.90	0.92	0.80	0.85
	I react unfavorably --- favorably toward this site	0.91	0.91	0.84	0.83
	I have negative--- positive feelings toward this site	0.90	0.82	0.80	0.67

	This site is unattractive --- attractive	0.72	0.83	0.52	0.69
Site Involvement	This web site is: Unimportant--- Important to me	0.94	0.89	0.88	0.80
	This web site is: Irrelevant--- Relevant to my needs	0.91	0.94	0.83	0.88
	This web site is: Not worth--- Worth remembering	0.88	0.86	0.78	0.74
	This web site is: Not worth--- Worth paying attention to	0.88	0.90	0.77	0.80
	This web site is: Does not matter --- Matters to me	0.96	0.91	0.92	0.83
	This web site is: Insignificant--- Significant to me	0.96	0.95	0.92	0.91
Service Attitudes	This service is bad---good	0.88	0.88	0.78	0.77
	I dislike---like this service	0.94	0.91	0.89	0.84
	I react unfavorably---favorably toward this service	0.95	0.93	0.90	0.86
	I have negative---positive feelings toward this service	0.96	0.90	0.92	0.80
	This service is unattractive--- attractive	0.86	0.83	0.73	0.69
Purchase Intentions	The likelihood of purchasing this product is high.	0.89	0.82	0.79	0.68
	The probability that I would consider buying the product is high.	0.92	0.91	0.84	0.83
	My willingness to buy the product is high.	0.87	0.92	0.76	0.84
	I intend to purchase this product.	0.83	0.91	0.69	0.82

Table2. Results of CFA for each group

	AVE	Pleasure	Arousal	Dominance	Informativeness	Effectiveness	Entertainment	Site Attitudes	Site Involvement	Service Attitudes	Purchase Intentions
Pleasure	***0.71***	**0.84**									
Arousal	***0.76***	0.46	**0.87**								
Dominance	***0.60***	0.33	0.16	**0.77**							
Informativeness	***0.76***	0.53	0.35	0.31	**0.87**						
Effectiveness	***0.64***	0.51	0.26	0.46	0.54	**0.80**					
Entertainment	***0.74***	0.56	0.52	0.41	0.58	0.49	**0.86**				
Site Attitudes	***0.73***	0.56	0.40	0.40	0.58	0.62	0.63	**0.85**			
Site Involvement	***0.85***	0.54	0.39	0.18	0.56	0.39	0.51	0.56	**0.92**		
Service Attitudes	***0.82***	0.48	0.26	0.22	0.47	0.44	0.45	0.61	0.47	**0.91**	
Purchase Intention	***0.79***	0.49	0.43	0.18	0.56	0.34	0.50	0.50	0.60	0.50	**0.89**

Table 3.Square root of the AVE are on diagonal (bold) and correlations among factors are off-diagonal.

	Model	χ^2	df	χ^2/df	$\Delta\chi^2$ from model 1	Δdf from Model 1	*p*-value	NNFI	CFI	RMSEA
1	Base Model: No constraint	2937	1510	1.94	0	0	1	.977	.979	.040
2	Factor Loading Invariance	3001	1541	1.95	64	31	.000	.977	.979	.041
3	Partially Factor Loading Invariance	2973	1539	1.93	36	29	.21	.978	.979	.040
4	Structural Path Invariance	2993	1531	1.95	56	21	.000	.977	.979	.041

Table 4. Test of measurement invariance between the two groups

Conceptual Model	Cultural Comparison	Hypothetical Path	Chinese	Canadian	Path Differences: χ^2(*p*-value)
H1a	H10a	Pleasure→ Effectiveness	.260***	.415***	**3.01 (.083)**
H1b	H10b	Pleasure→ Informativeness	.200***	.261***	.638(.424)
H1c	H10c	Pleasure→ Entertainment	.387***	.460***	**2.66 (.100)**
H2a	--	Arousal→ Effectiveness	.047n.s.	.022n.s.	.087(.769)
H2b	--	Arousal→ Informativeness	.148**	.105*	.444(.505)
H2c	--	Arousal→ Entertainment	.266**	.314***	.025(.870)
H3a	H11a	Dominance→ Effectiveness	.623***	.402***	**14.4(.000)**
H3b	H11b	Dominance→ Informativeness	-.049n.s.	-.124*	.256(.613)
H3c	H11c	Dominance→ Entertainment	.249***	.210***	1.93(.165)
H4a	H12a	Effectiveness → Site Attitudes	.125*	.318***	**3.16(.076)**
H4b	H12b	Effectiveness → Site Involvement	-.178n.s.	-.021n.s.	1.83(.190)
H4c	H12c	Effectiveness → Informativeness	.679***	.534***	2.07(.150)
H5a	H13a	Informativeness → Site Involvement	.401**	.577***	**3.10 (.078)**
H5b	H13b	Informativeness → Purchase Intentions	.083n.s.	.150*	**4.80(.030)**
H6a	H14a	Entertainment → Site Attitudes	.577***	.376***	**5.22(.022)**
H6b	H14b	Entertainment → Site Involvement	.444***	.156**	**4.55(.033)**
H7	H15	Site Attitudes→ Service Attitudes	.601***	.474***	**3.02(.082)**
H8a	H16a	Site Involvement → Site Attitudes	.268***	.145**	2.51(.113)
H8b	H16b	Site Involvement → Purchase Intentions	.328***	.499***	1.70(.192)
H9	H17	Service Attitudes→ Purchase Intentions	.352***	.229***	2.16(.142)

Table 5 Results of the invariance tests of the model between the two groups (****p*<.001, ** *p*<.01, * *p*<.05)