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Investigate the effectiveness of destination websites from a New Angle: Processing Fluency

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Abstract

This study applies processing fluency theory to the investigation of its effectiveness in the use of destination websites. Processing fluency reveals processes and manipulations occurring at different levels. It can be described as the ease with which externally presented stimuli (i.e., destination websites presented to users) are processed. The study investigates the impacts of four primary website features (information quality, ease of use, interactivity, and visual attractiveness) on processing fluency in the use of destination websites. The results indicate that information quality has the most impact on processing fluency, followed by ease of use, and interactivity. The study provides an innovative approach to understanding the effectiveness of destination websites, and suggests strategies for website designers.

Keywords: processing fluency, information quality, ease of use, interactivity, visual attractiveness, destination websites

Introduction

Over the years, a number of attempts have been made to implement ways to communicate and collaborate globally on a large scale. So far, nothing has been as successful as the internet. Since the launch of internet applications in the late 1990s, academic scholars have realized the potential of information technology and incorporated it into the tourism industry (Burger, 1997; Clycle & Landfried, 1995). It is widely accepted that websites provide a distinct advantage for tourism organizations, and serve as an effective tool for marketing communication between suppliers and consumers (Buhalis, 2003; Zafiroopoulos & Vrana, 2006). The bulk of prior research has evaluated the effectiveness of destination websites (e.g., Cai, Card & Cole, 2004; Kim & Fesenmaier, 2007; O'Connor, 2004). For example, Morrison, Taylor, Morrison, and Morrison (1999) developed the Modified Balanced Scorecard approach to assess the design and maintenance of hotel websites from the technical, customer, marketing, and destination information perspectives. Lu, Deng, and Wang (2007) developed an index system for the evaluation of tourism websites, incorporating factors relating to website design, content, and effectiveness. Other studies include Tierney (2000), Beldona & Cai (2006), and Zafiroopoulos & Vrana (2006), etc.

These studies make the assumption that the effectiveness of destination websites is determined by the quantity and quality of various website features (Doolin, Burgess, & Cooper, 2002; Li & Petrick, 2007; Scharl, Wober, & Bauer, 2003). Destination websites which are comprehensive and well-designed are more likely to lead to customers' positive attitudes, and subsequently, positive travel behavior. However, processing fluency theory as understood in the field of psychology suggests a different angle to understand information processing. When customers are exposed to complicated information, they tend to simplify the task by relying on mental shortcuts, or heuristics. As a result, a complicated message causes difficulties in mental processing, and may lead to information exclusion, and even obstacles in the forming of attitudes and connotation (Kahneman, Slovic, & Tversky, 1982). In contrast, when people can fluently process information and its messages, their attitudes toward the target subject they are learning about become more favorable (Janiszewski 1993; Lee 2001; Reber, Winkielman, & Schwarz 1998). Therefore, psychologists suggest that ease of information processing should be considered in communication and persuasion (Schwartz, 2004). No previous tourism studies, however, have evaluated the fluency of information processes in the use of destination websites. This study aims to address this research gap.

Processing fluency theory suggests that customers can process only a rational amount of messages on destination websites, including information content and other website features. Thus, website attributes are suggested to be limited to an adequate amount on the destination websites. Accordingly, several critical questions in website design arise: how can marketers organize various website characteristics in order to facilitate customers' fluent information processing? What are the various impacts of these website characteristics on processing fluency? What website characteristics are most important in facilitating processing fluency? This research has been motivated by the need for a theoretical model capable of addressing the impacts of several primary website features on the destination website's processing fluency.

This study developed and tested a theoretical model that simulated the correlations between four primary website features (information quality, ease of use, interactivity, and visual attractiveness) and the processing fluency of destination websites. This is the first study to apply processing fluency theory to the investigation of destination websites, a new angle in the evaluation of website effectiveness. In terms of practical application, the study also provides guidance for website designers in effective communication and persuasion.

Literature Review

Processing Fluency

Information communication is extremely important in online marketing because consumers depend on information presented on the web for making purchase decisions (Rayman-Bacchus & Molina, 2011). It has been found that poor information presentation makes consumers frustrated and confused, which eventually prevents them from purchasing (Arnott & Bridgewater, 2002). Therefore, it is imperative that marketers improve information presentation based on understanding the fluency of information processing, which is expected to benefit both consumers and marketers (Ryu, Lim, Tan, & Han, 2005; Vries & Rompay, 2009).

Stimulus processing is characterized by a variety of internal mental events that are nonspecific to the stimulus content. For example, mental representations carrying the same content may differ in degree of activation (Mandler, 1980), and processing of the same content may differ in speed (Jacoby, 1983), effort (Schwartz, 1998), or accuracy. Processing fluency reflects processes and manipulations occurring at different levels. It describes the ease with which externally presented stimuli are processed (Clore, 1992; Schwartz, 1998).

Fluency can reflect processes and manipulations at two different levels: perceptual and conceptual. Perceptual fluency shows ease of low-level operations that primarily refer to "surface" features of the stimulus, and occur when exposure to a stimulus creates a feature-based representation of the information processing stimulus. Perceptual priming, clarification, presentation duration, prior exposure, or figure-ground contrast all are at work in perceptual fluency (Begg, Anas, & Farinacci, 1992; Reber & Schwartz, 1999; Reber, Schwartz, & Winkielman, 2004). Also, conceptual fluency reflects the ease of high-level mental operations concerned with stimulus meaning and the processing of a stimulus' relation to semantic knowledge structure (Whittlesea, 1993; Winkielman, Schwarz, Fazendeiro, & Reber, 2003). Conceptual

fluency benefits from the elaboration of, but it is not affected by changes in, perceptual features of the stimulus. Accordingly, conceptual fluency is influenced by variables such as repetition, semantic priming, semantic predictability, and context congruity, etc. (e.g., Kelley & Jacoby; 1998; McGlone & Tofighbakhsh, 2000).

A great deal of social cognition and marketing studies have confirmed the important effect of processing fluency on attitude and behavior (Roediger, 1990; Whittlesea, 1993). Lee and Labroo (2004) examined the effect of processing fluency on attitude. The results of their three experiments indicated that a more favorable attitude is observed when the target's processing fluency is enhanced. To take the idea further, Novemsky, Dhar, Schwarz, and Simonson (2005) confirmed the effect of processing fluency on consumer decision making. Similarly, processing fluency was also found to affect several other feelings, such as familiarity (Wagner & Gabrieli, 1998), the tip-of-the-tongue state (Brown, 2000), feelings of knowing (Koriat, 2000), truth judgment (Unkelbach, 2007), and aesthetic pleasure (Reber, Schwarz, & Winkielman, 2004).

Processing fluency describes the fluency of information processing. Therefore, information processing provides the basis for scholars to understand and measure processing fluency (Begg, Anas, & Farinacci, 1992; Schwarz, 2004). The steps of information processing, especially in the context of websites, are discussed in the following section.

Information Processing on the Websites

Within the field of cognitive psychology, information processing is an approach to understanding human thinking (McGuire, 1968). Information processing theory is based on the premise that the human mind is a system that processes information through the application of logical rules and strategies (Newell & Simon, 1972; Payne, 1980). Information processing includes five steps: presentation, attention, comprehension, yield/retention, and behavior (McGuire, 1968). The first step involves the message which is presented to the person via various formal and informal media of communication. Once the message is presented, then the person may or may not attend to the message. If this second step is also taken, the person will try to comprehend the message contents to which he/she attends. If the message contents have been understood, then he/she may or may not yield to the correctly comprehended information and finally, he/she may or may not retain the new behavioral inclination until the opportunity to make the purchase arises. The last step is whether he/she performs the actual purchase behavior (Belch & Belch, 1998; McGuire, 1968; Scholten, 1996).

This information processing model is one of the primary topics in marketing research, especially in assessing the effectiveness of traditional media advertising (MacInnis & Jaworski, 1989; Purttrevu, 2001; Venkatraman et al, 2006). Traditional media treat information processing with a passive approach. Advertising interrupts a television program or intrudes into the reading of a magazine (McDonald, 1997). The message is exposed to customers (first stage of information processing theory: presentation) and is consequently passively processed by the customers. The communication on the internet, however, is more active. Instead of passively processing the information exposed to them, customers search for information they need on websites (Lehto & Kim, 2006; Pan & Fesenmaier, 2006). Therefore, when assessing processing fluency, the ease of locating information is used to replace the message presentation as the first stage of information processing theory in the study.

Previous studies of processing fluency have suggested that the fluency signal is generated at very early stages of information processing (Curran, 2000; Lewenstein & Nowak, 1989; Norman et al, 2000; Smith, 2000). The retention, conation, and behavior phases have been discussed as the consequences of fluent processing (e.g., Clore, 1992; Luce, Bettman, & Payne, 1997; Schwarz, 2004). This conclusion maintains that the fourth step (yield/retention) and the fifth step (behavior) in the information processing theory are not included in the experience of processing fluency. Therefore, the study excluded the yield/retention and behavior in assessing processing fluency.

As discussed above, perceptual fluency primarily refers to the "surface" features of the stimulus. In this study, the stimulus investigated was destination websites. The website characteristics are assumed to influence perceptual fluency, and consequently, the overall processing fluency. The website characteristics are discussed in the following section.

Website Characteristics

Discussion of website characteristics is found in numerous studies of website evaluation. Website evaluations have been fruitful in the past decade (e.g., Huizingh, 2000; Zhang & Dran, 2000). A proliferation of published articles have presented different ways for businesses to use the internet effectively and these articles have also suggested how commercial websites need to be structured in order to best sell the products and services they seek to represent. In other words, these articles were making attempts to identify website factors that influence the sales of products and services over the internet. For example, Scanlon, Schroeder, Snyder, and Spool (1998) suggested several primary website design factors, which include content, searching, links, navigation, page layout, readability, and graphics. Morrison, Taylor and Douglas (2004) evaluated websites from four perspectives: the technical perspective, customer perspective, marketing perspective, and internal perspective. Smith (1996) suggested eleven criteria to address information use in websites or virtual libraries, which include scope, content, accuracy, currency, authority, appearance, audience, purpose, uniqueness, workability, and cost.

In the above examples, the numbers, labels, and definitions of these dimensions differ across the various studies (Schegg et al., 2002). Ha and Love (2005) summarized website attributes discussed in prior studies and suggested that content and design are the two most significant attributes of website evaluation. The term content refers to the information features or services offered on the website (Ghosh, 1997; Huizingh, 2000; Rachman & Buchanan, 1999a, 1999b). Search information is the primary goal of people who browse the websites (Huizingh, 2000). High quality content influences potential tourists' perceived image of the destination and creates an imaginary experience for them (Cano and Prentice, 1998) The design attributes mainly refer to visual attractiveness, ease of use, and interactivity (Ha & Love, 2005; Zafiroopoulos & Vrana, 2006). Visual attractiveness refers to the creativity of the site (i.e. excellent typeface) to create an atmosphere that evokes emotions and feelings in viewers (Loiacono et al., 2000). These aesthetic design attributes include clear and readable text, long scrolling pages, and figure-ground contrast, etc. (Begg, Anas, & Farinacci, 1992; Reber & Schwartz, 1999; Reber, Schwatz, & Winkielman, 2004).

Users generally determine the usefulness of a website based on its ease of use or usability (Douglas & Mills, 2005). Ease of use is composed of distinct website features, such as a simple and consistent navigation system (Rosen, 2002), website accessibility (Mckinney, Yoon, & Zahedi, 2002), and other design attributes that assist browsing websites (e.g., Baloglu & Pekcan, 2006; Law, Qi, & Buhalis, 2010). Interactivity is described as the direct "conversation" between audiences and information providers. Web users can chat online through website support, complete on-line forms, and request additional information, etc. (Farrar & Lambert, 2002).

Previous studies have indicated that website features influence information processing (e.g., Jeong, 2002; Tang & Jang, 2008). For example, Petty and Cacioppo (1981) claimed that message quality plays a crucial role in both the central and peripheral routes of cognitive processing. Tang and Jang (2011) discussed the impact of website design characteristics on information processing such as ease of use and visual attractiveness. Tremayne and Dunwoody (2001) tested a model of interactive information processing and found that the interactivity feature significantly impacts cognitive elaboration and learning on the World Wide Web. Other studies include Rosen & Purinton (2004), McInerney & Bird (2005), and Vaughan (2004), etc.

As earlier stated, fluency processing describes the ease or fluency of information processing, and website features impact processing fluency, including information quality, ease of use, interactivity, and visual attractiveness as discussed above. Thus, as shown in Figure 1, the authors of this study propose four hypotheses as follows:

- H1. Information quality of the destination websites has a positive influence on processing fluency
- H2. Ease of use of destination websites has a positive influence on processing fluency
- H3. Interactivity of destination websites has a positive influence on processing fluency
- H4. Visual attractiveness of destination websites has a positive influence on processing fluency

Methodology

Website Samples

Numerous tourism websites on the internet offer destination information. In order to generalize the results of this study and relate them to different destination websites, the authors used the official tourism websites of five of the top tourism destinations in the U.S. for the survey, which include New York City (<http://nycvisit.com>), Los Angeles (<http://discoverlosangeles.com>), Miami (<http://www.miami-florida.com>), Orlando (<http://www.orlandoinfo.com>), and San Francisco (<http://www.onlyinsanfrancisco.com>). These five destinations have been among the top 10 cities in the U.S. visited by the overseas tourists between 2005 and 2009 (Office of Travel & Tourism Industries, 2006-2010). Respondents were asked to choose one of the five destination websites, take several minutes to look over the selected website, and to complete the questionnaire.

Instrument

The final questionnaires included three parts. Before completing the first part, the respondents were asked to participate in the following scenario:

You and your friends are planning a trip, but you have not decided where to go. Today while you are on the internet, you happen to click through the official tourism website for the destination. We are interested in your evaluation of the website and its influence on your attitude toward the destination.

The respondents were then asked to answer questions in three parts. In the first part, they were asked to assess their processing fluency on the chosen destination website. As discussed above, processing fluency is evaluated from three perspectives: fluency in attention, fluency in locating information, and fluency in understanding. Each of the three perspectives was evaluated with two items. The total of six items for the three perspectives were adapted from the measurement for attention on advertising (MacInnis & Jaworski (1989), information search on websites (Geissler, 2001), and comprehension on advertising (MacInnis & Jaworski, 1989).

In part two, the respondents were asked to answer questions in four sub-sections. The measurement scales of the following constructs were listed as follows: 1) information quality; 2) ease of use; 3) interactivity; and 4) visual attractiveness.

1) The information quality was evaluated using six items previously used by Tang and Jang (2008), which investigated whether information is useful, updated, enough, detailed, relevant, and comprehensive.

2) The ease of use was measured using four items originating in Ha and Love (2005). The scales included simple layout, minimal clicks to locate desired information, quick load of text and graphics, and clear separation of categories for different groups of tourists.

3) The interactivity of the website was evaluated using three scales from Kim and Fesenmaier (2008), which included direct contact with the tourism office, customer service on the website, and register for special offers, newsletter, and personalization, etc.

4) The visual attractiveness was measured with four items generated by Zhang and Dran (2000), including attractive color use, screen layout, screen background, as well as interesting web page displays.

A seven-point Likert-type scale was used for all four constructs with responses ranging from 1 (strongly disagree) to 7 (strongly agree). Part three collected the demographic characteristics of the respondents, including occupation, age, income, gender, and education.

Data Collection and Analysis

A pilot test was administered to a sample of 35 undergraduate students enrolled in a hospitality course at a Midwestern university in the United States. Extra points were given to each student who participated in the pre-test. These students completed the pre-test questionnaire. Wording was further modified based on the feedback of the respondents in the pilot-test. As earlier stated, Zoomerang, an online survey service company (www.zoomerang.com), assisted the authors in the data collection. The five questionnaires were launched on the Zommerang on-line survey panels. All panelists who were older than 18 were invited to participate in the survey. Each panelist was only allowed to fill out one of the five questionnaires. Zoomerang gave 50 credits to every respondent as a reward, which could be exchanged for cash. A total of 377 questionnaires were collected, which include 77 for the Los Angeles website, 77 for the

Miami website, 74 for the New York City website, 72 for the Orlando website, and 77 for the San Francisco website. After the removal of 16 incomplete questionnaires, 361 questionnaires were coded for data analysis.

The Amos 6.0 structural equation analysis package was employed to test the hypothesized model in the study. Two separate approaches were applied to test the research hypotheses. First, confirmatory factor analysis (CFA) was used to test whether the relationships between the observed variables and their underlying latent constructs existed. Second, the structural relationships proposed in the hypotheses were analyzed by structural equation modeling. In the model's goodness-of-fit test, a model χ^2 test was the main reference, assisted by Normed Fit Index (NFI), Tucker-Lewis Index (TLI), comparative fit index (CFI), and the root mean square error of approximation (RMSEA). A large χ^2 statistic indicated poor fit. However, it is noted that χ^2 was affected by the sample size. The χ^2/df was suggested to be less than 3:1 (Joreskog & Sorbom, 1989). NFI, TLI, and CFI with values between 0.9 and 1.0 indicated a good fit. RMSEA with a value below 0.80 was recommended (Byrne, 1998; Diamantopoulos & Siguaw, 2000).

Results

Profile of Respondents

The male and female respondents were 45.1% and 54.9%, respectively. The respondents' ages ranged from 18 to 65 and over. The age group of 25-34 was the largest (23.4%), closely followed by the 35-44 (23.1%) age group. The percentages of the remaining age groups were between 3.1% and 13.9%. The household yearly income group with the most participants was \$30,000 - \$39,999 (12.0%), followed by the \$40,000 - \$49,999 (10.1%) household income bracket. 14.6% of the incomes were greater than \$100,000. The majority of the respondents earned high school diplomas (29.8%), associate's degrees (17.3%), or bachelor's degrees (29.2%). Five questionnaires, one for each of the five destination websites, were used in the survey. In order to evaluate the consistency of the responses among the five destination surveys, the authors conducted an ANOVA test of all of the five constructs among the five groups. Each construct was comprised of multiple measurement scales, therefore, the mean of the measurement items for each construct was calculated and consequently used in the ANOVA test. No significant difference was found for any construct among the respondents of the five destination surveys; consequently the data collected in the five destination surveys was merged for further analysis.

Validity and Reliability Tests

Cronbach Alpha was used to test individual item reliability, while composite reliability and average variance extracted (AVE) were applied to test the reliability of the construct or the latent variables. To examine the inter-item reliability, Cronbach's alpha coefficients were calculated. Five items for the five constructs were found to be unreliable indicators in measuring their responding constructs, including two items for ease of use, one item for interactivity, and two items for visual attractiveness. Since deletion of the five items did not influence domain representativeness, they were removed from further analysis. Cronbach's alpha estimates combined with the remaining items ranged from 0.907 to 0.932, which suggests acceptable internal consistency in all the constructs.

Composite reliabilities of the five constructs ranged from 0.853 and 0.931, which all exceed the cutoff value of 0.70 (Hair, Anderson, Tatham, & Black, 1998). In addition, AVE represents the variance between the indicators explained by the common factor. The AVEs of the five constructs were between 0.61 and 0.80, all of which are greater than the minimum criterion of 0.5 (Fornell & Larcker, 1981). The authors also tested the convergent validity and discriminant validity of the conceptual model. Confirmatory factor loadings were used to evaluate the convergent validity (Anderson & Gerbing, 1988). As illustrated in Table 1, all confirmatory factor loadings for the five constructs were significant at the 0.001 level, which indicates that convergent validity of the measures in the conceptual model were satisfactory. Discriminant validity was evaluated by comparing the AVE with the squared correlation between constructs (Fornell & Larcker, 1981). The square correlations between any pair of constructs were less than AVE, which indicates acceptable discriminant validity.

Table 1. Scale/Item Measurement Properties

Construct/Item	Mean	S.D	Cronbach Alpha	Composite Reliability	CFA item	Label
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					loading	
Processing Fluency			0.909	0.853		
The website instantly attracts my attention	3.91	1.872			0.80	PF1
The website would stand out in a group of tourism websites	3.76	1.679			0.51	PF2
The website enables me to quickly find the information I need	4.35	1.830			0.90	PF3
It is easy to locate the travel information I need on the website	4.46	1.827			0.91	PF4
It is easy to understand the information on the website	4.61	1.836			0.88	PF5
I am able to effortlessly comprehend the information on the website	3.99	1.672			0.72	PF6
Information Quality			0.907	0.904		
The website provides useful information	4.15	1.871			0.79	IQ1
The website provides up-to-date information	4.22	1.658			0.83	IQ2
The website provides enough information	4.30	1.579			0.76	IQ3
The website provides detailed information	4.32	1.564			0.78	IQ4
The website provides relevant information	4.30	1.597			0.81	IQ5
The website provides information that is easy to comprehend	4.45	1.641			0.76	IQ6
Ease of Use			0.915	0.917		
The website has a simple layout in terms of content	4.08	2.004			0.82	EU1
The website provides minimal clicks to locate desired information	3.94	1.852			0.89	EU2
All text and graphics were quickly loaded	4.18	1.753			0.85	EU3
The website clearly separates categories for different groups of tourists	4.08	1.711			0.87	EU4
Interactivity			0.920	0.922		
The website enables me to directly contact the tourism office	4.04	2.247			0.89	I1
The website provides helpful customer service	4.03	1.928			0.88	I2
The website enables me to register for special offers, newsletters, personalized information, etc.	4.01	2.072			0.91	I3
Visual Attractiveness			0.932	0.931		
The overall use of color is attractive	5.21	1.302			0.78	VA1
The displays on the web pages are sharp	5.43	1.237			0.83	VA2
The screen layout is visually attractive	5.21	1.339			0.94	VA3
The screen background and pattern are attractive	5.14	1.323			0.94	VA4

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) specifies how observed variables measure latent constructs and evaluate the measurement effectiveness of these variables. The goodness-of-fit indices of CFA (χ^2 (220)=443.572, $p=0.000$; $\chi^2/df=0.2.016$; GFI=0.903; AGFI=0.878; CFI=965; NFI=0.933; IFI=0.965; TLI=0.959; RMSEA=0.053) suggest that the model fit the data well.

Structural Model and Hypotheses Testing

The structural model, including four exogenous latent constructs (information quality, ease of use, interactivity, and visual attractiveness) and one endogenous latent construct (processing fluency), was evaluated with Maximum Likelihood estimation. The goodness-of-fit statistics are shown in Table 2. The goodness-of-fit statistics of the structural model were as follows: χ^2 (227)=701.514, $p=0.000$; $\chi^2/df=3.090$; CFI=925; NFI=0.893; IFI=0.925; TLI=0.916; RMSEA=0.076. Modification indices (MIs) indicated that the measures of VA1 and VA2 for visual attractiveness had a high covariance. The errors of these variables could be feasibly correlated since the effective use of color is an important approach to sharpening the web page photo displays. The result of the revised structural model was: χ^2 (226)=647.412, $p=0.000$; $\chi^2/df=2.865$; GFI=0.866; AGFI=0.836; CFI=933; NFI=0.902; IFI=0.934; TLI=0.925; RMSEA=0.072. The difference in the χ^2 ($\Delta \chi^2$ ($\Delta df=1$) =54.102) between the original model (χ^2 (227)=701.514) and the revised model (χ^2 (226)=647.412) was significant. Therefore, the revised model was the best one for the study, and is shown in Figure 1.

Table 2. Goodness of Fit of Structural Models

Model	χ^2	df	P	χ^2/df	NFI	IFI	TLI	CFI	RMSEA
Model 1	701.514	227	0.000	3.090	0.893	0.925	0.916	0.925	0.076
Model 2	647.412	226	0.000	2.865	0.902	0.934	0.925	0.933	0.072
		$\Delta \chi^2$			Δdf			P	
Model 2 – Model 1		54.102			1				P<0.001***

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

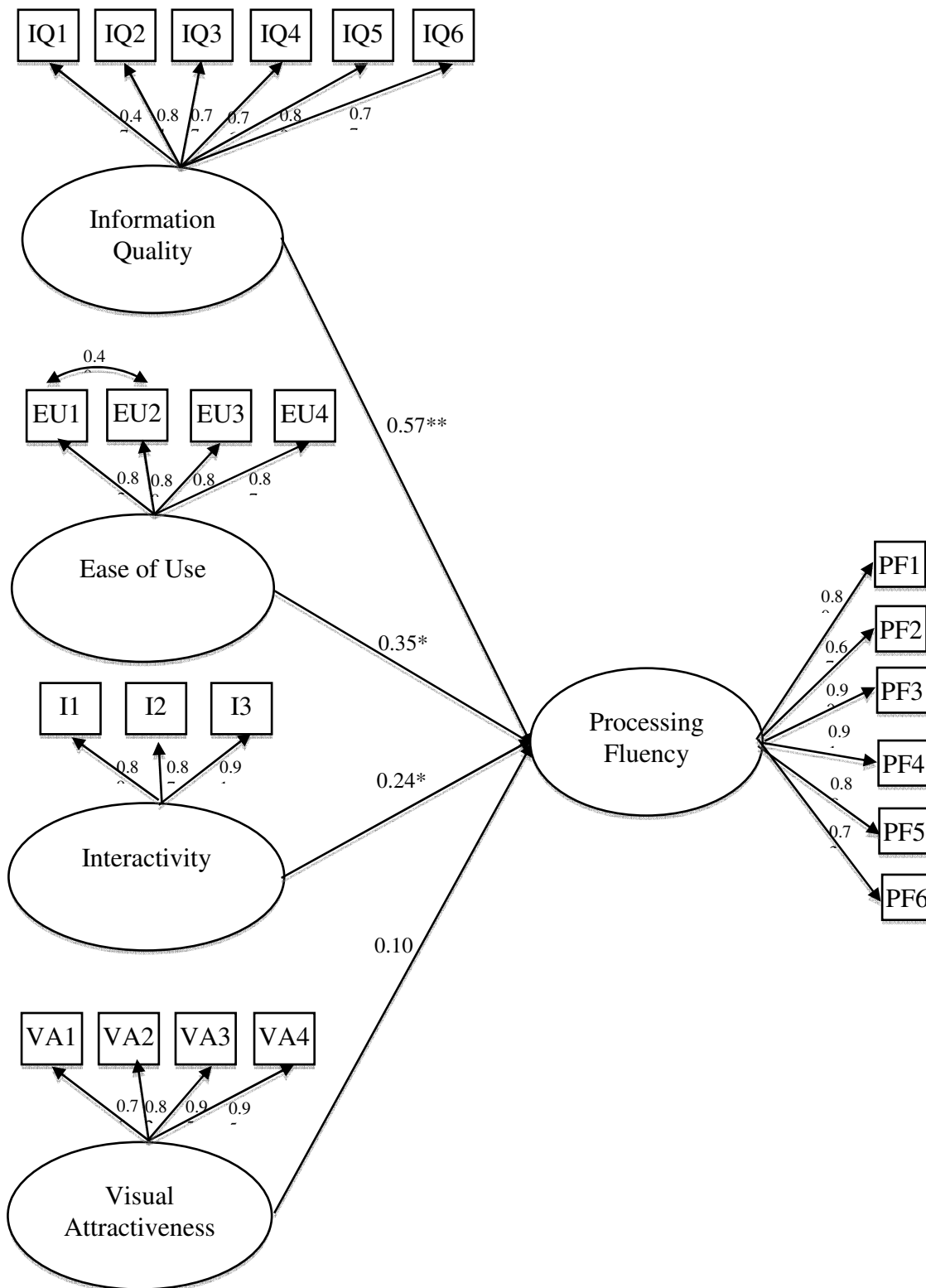


Figure 1. Structural Model

Among the four website features investigated in the study, information quality had the most significant impact on processing fluency ($\beta=0.57$, $p<0.001$; H1 is accepted). Most people visit destination websites for planning their trips. Therefore, people are seeking a comprehensive knowledge of the destination, including sightseeing venues, cuisine, shopping, and transportation. They need timely, up-to-date information on available accommodation, local festivals, and interesting events. They also desire to learn about the destination's relevant facts, such as its history, culture, and weather (Tang & Jang, 2008). High-quality information content on the website serves as an effective fluency signal, and it assists people to extract meaning and generate attitude with ease.

Ease of use has also been found to have a significant impact on destination websites processing fluency ($\beta=0.35$, $p<0.001$; H2 is accepted). While the information available on the products and services of each destination are similar from destination to destination, ease of use gains importance as people look to differentiate between competitors. Effective ease-of-use design facilitates quickness in completing the three steps of information processing (information location, attention, and comprehension) with less effort, and more accuracy (McGuire, 1968). Therefore, the authors suggest that online tourism information providers, such as destination marketers, should not only communicate their marketing efforts and positioning strategies through their websites. They also need to reconsider ease of use on the destination websites from the perspective of potential tourists.

Interactivity is also found to have a significant impact on destination website processing fluency ($\beta=0.24$, $p<0.001$; H3 is accepted). In an online environment, not every customer wants to "talk to the machine", especially for the tourism industry where interpersonal relations are essential. Direct personal communication accelerates the mental operations concerned with travel information and the processing of a website's relation to users' semantic knowledge structure (Stanovich, 1980). Websites must definitely provide contact information in a variety of forms such as telephone, address, email, and fax, thus allowing customers to choose the medium they prefer and/or are equipped to use. Moreover, marketers expect destination websites to exude a warm, welcoming experience to potential customers. The interactivity features on destination websites need to reflect the same emotions to website visitors as tourists experience at the actual destinations (Ha & Love, 2005).

Compared with the other three website attributes, visual attractiveness has the least impact on processing fluency ($\beta=0.10$, $p=0.017$; H4 is rejected). Appealing design features serve as a favorable cue that attracts customers' attention on destination websites (Karabeg & Akkok, 2004; Park & Gretzel, 2007). However, it has little impact on information location and comprehension in the information processing. Therefore, it is understandable that visual attractiveness has a limited influence on destination website processing fluency overall.

Implications

This pilot study has investigated communication on destination websites using processing fluency theory. This project is the first research to examine ease of processing on destination websites in the tourism industry. This application of processing fluency theory in a new context contributes to the body of knowledge on processing fluency and further verifies the soundness of the theory. Moreover, the study provides a theoretical foundation for future research seeking to investigate the internet as a persuasive tool. This study is also expected to spark the interest of other scholars on applying processing fluency to communication and persuasion in broader tourism studies.

This study provides a new angle to the understanding of communication effectiveness on destination websites. Processing fluency indicates that customers only can process a rational amount of messages on the destination websites. Therefore, marketers are advised to use strategies which limit the amount of messages communicated by the website features. The priority rankings of the four primary website characteristics are 1) information quality, 2) ease of use, 3) interactivity, and 4) visual attractiveness. High-quality information content serves as the most important fluency signal. Top priority for marketers is the importance of comprehensive, useful, timely, and easy-to-comprehend travel information to attract potential customers. Customers who visit a destination website have questions they are seeking to answer and will be disappointed if the website looks great, but does not answer their

questions clearly and accurately. Marketers are advised to always keep in mind that the primary objective of customers is high-quality tourism information, and not fancy website design features.

Ease of use functions facilitate customers' ability to process information content with less effort, such as simple layout, minimal clicks to locate desired information, and clearly separated categories for different groups of tourists, etc. Interactivity functions sometime provide more effective communication than text content on its own because these features help customers understand information faster and more accurately. Although visual attractiveness has been found to spur customers' interest to browse the tourism website, visual attractiveness on its own has a limited impact on processing fluency. In past studies of destination websites, the impact of visual attractiveness on website destination has probably been exaggerated. Appealing website design is like icing on the cake, but can not replace the cake itself, namely high-quality specific and accurate travel information.

This study has several limitations that the authors would like to address. First, the destination websites used in the study survey were all websites belonging to destination marketing organizations. However, various destination websites are on the internet. The type of website may impact the website's communication and persuasion abilities. The authors suggest that more and various types of destination websites need to be incorporated into future studies, e.g., travel agency websites, online travel guidebooks, and tourists' blogs, etc. Second, this study is a pilot study for the investigation of on the destination website processing fluency.. Many critical questions related to processing fluency have not been answered, such as how does processing fluency on destination websites affect attitude, and consequently, behavior? What are the important situational factors in ease of information processing on the destination websites, such as presentation duration and prior exposure? How do perceptual fluency and conceptual fluency influence information processing on destination websites, respectively? This study is also the first study to applied processing fluency in the tourism industry. It is expected that processing fluency theory can be used to understand communication and persuasion between marketers and customers in other contexts, such as promotional materials and personal contacts. Third, the study only investigated the impacts of the four primary website attributes on processing fluency. Future studies are recommended which include other destination website features such as security and personalization.