Esta es la **versión de autor** del artículo publicado en:

This is an **author produced version** of a paper published in:

Does gender affect media choice in travel information search?On the use of mobile Internet☆

Shintaro Okazaki [a,*], Morikazu Hirose [b,1]

[a] *Department of Finance and Marketing Research, College of Economics and Business Administration, Universidad Autónoma de Madrid, Cantoblanco, 28049 Madrid, Spain*
[b] *Faculty of Business Administration, Tokyo Fuji University, 3-8-1, Takadanobaba, Shinjuku-ku, Tokyo 169-0075, Japan*

A B S T R A C T

This study examines gender effects in Japanese consumers' media use in travel information search. Drawing upon gender theory and niche theory, we propose a causal model consisting of satisfaction, attitude, and habitual usage of distinct media. Specifically, we posit that females are more predis posed to media displacement reinforcement effects than males, when mobile Internet becomes a more popular medium in travel information search than PC Internet and traditional media. We conducted an online panel survey in Japan, and collected 992 usable responses. Structural equation modeling finds that satisfaction with PC Internet and with traditional media affects the habitual use of mobile Internet negatively. Habitual use of mobile Internet is negatively associated with attitude toward PC Internet and toward traditional media. Although moderation analysis identifies no statistical difference in the hypothesized paths, latent mean analysis reveals that satisfaction from, attitude toward, and habitual usage of mobile Internet are more strongly perceived among female respondents than males.

Keywords:
Gender
Information search
Media choice
Mobile device
Niche theory
Vacation planning

1. Introduction

Gender has frequently been identified as a social and cultural determinant in developing marketing strategy, including media planning. Recent studies of electronic commerce indicate that gender is one of the key attributes and predictors of intent to purchase. Although the findings from earlier studies suggest that females have rather pessimistic views of e commerce (Rodgers & Harris, 2003; Wolin & Korgaonkar, 2003), most later explorations indicate that females are more likely to shop online than males. This must be indicative of the recent dramatic growth of female consumers in the online community (Garbarino & Strahilevitz, 2004). However, gender has seldom been explored in research on tourism, with one interesting exception, which finds an important gender influence on online travel information search (Kim, Lehto, & Morrison, 2007).

In recent years, the landscape of online communication has changed dramatically, as the mobile Internet has rapidly gained popularity. The unique nature of the mobile Internet can be sum med up in its ubiquity, its flexibility in both time and space. This allows users access to information at any time, in any place. As a result, mobile based promotion has become an increasingly popular tool for interactive advertisers and marketers. A recent study in Japan showed that 58% of mobile subscribers use mobile coupons and discounts more than once a month (D2 Communica tions, 2007). In South Korea, consumers can register new purchases with their mobile phone for instant rewards (Kim, 2004). More recently, in the USA, mobile phone service providers, including Cingular, Sprint, and Verizon, have begun to offer marketing programs for advertisers (Li & Bryan Low, 2006).

These advances have generated a new way for consumers to search for, identify, and acquire products: mobile commerce. Industry surveys in Japan indicate that three of the most purchased products in mobile commerce have been leisure, fashion, and entertainment (*Nikkei Marketing Journal*, 2008; Video Research, 2008). Purchase patterns appear skewed toward younger female consumers, as Japanese women make up a significant majority of the buyers of consumer goods and services (Griffy Brown & Oak land, 2007; Tolbert, 2000). In fact, prior research indicates that females are more prone to develop more favorable attitudes toward, and trust of, mobile advertising (Okazaki, 2007). However, it is virtually unknown whether gender really affects media choice and use when multiple media compete or overlap in satisfying

consumers' similar information needs. Specifically, when a traveler is engaged in vacation planning, he or she can choose one of three primary media to start his or her information search: mobile Internet, PC Internet, or traditional media. What is the logic behind this choice? Does gender affect such decisions?

The primary objective of this study is to address these questions by conducting surveys in Japan with regard to gendered media choice. Specifically, this study seeks to answer three basic questions through empirical research: (1) what are the basic relationships between mobile Internet, PC Internet, and traditional media, (2) how does gender affect media choice and use, and (3) to what extent are females more prone than males to use mobile Internet, at the expense of PC Internet and traditional media. To achieve these goals, the study is based in particular on two theoretical founda tions: gender effects, and media displacement reinforcement. We focus on macro level analysis, and specifically on consumers' primary media use in vacation planning. Our survey was conducted in Japan, one of the countries that has experienced various forms of online travel promotion.

In what follows, we first explain the basic background of the study, in terms of travel and media use, and mobile Internet use in travel information search. Next, we establish our theoretical framework based on two primary rationales, gender theory and niche theory. There follows a detailed description of the method ology. We then explain the study results. After recognizing important limitations, we draw conclusions and make suggestions for future research.

2. Background

2.1. Media and travel information search

Potential travelers are likely to engage in both internal and external information search. Internal search refers to the use of relevant information from long term memory to produce a satisfactory solution to the recognized problem, whereas external search is the acquisition of external information relevant to solving the problem (Hawkins, Best, & Coney, 2001). The importance of the latter increases when consumers move into extended decision making, such as vacation planning. When engaged in external search, potential travelers are thought to acquire actively distinct information sources, which may be marketing or non marketing sources. The former are of special interest to this study, and are exemplified in advertising infor mation in the mass media. Thus, consumers' media choice and use are an important determinant in resolving a consumption problem.

Vogt and Fesenmaier (1998) argued that marketing sources greatly influence tourists' decision making in vacation plan ning, and in particular the choice of destination. Often, tourism marketers intend to attract new visitors, or to remind former visitors to return, by providing editorial communica tions, such as guidebooks, newspapers, and magazine articles. In recent years, the Internet has become one of the most important sources of tourist information acquisition (Pan & Fesenmaier, 2006; Wu, Wei, & Chen, 2008). As a result, research on Internet use in tourists' media choice has steadily increased, and has received much attention from both academics and practitioners.

Fall and Knutson (2001) examined perceived media usefulness among mature travelers, and found that 27% of respondents (older than 55) considered Internet websites very useful in making travel decisions. Their results indicate that feature stories in magazines, newspapers, and television are very useful, especially in determining travel destination, with word of mouth (WOM) the most influential.

2.2. Characteristics of Japanese tourists' media use

Japanese travel spending increased dramatically during the 1970s, when the annual PIB growth exceeded 10%. In 2006, travel was the second most popular leisure activity after dining out, while combined spending on national and international travel was second after spending on games (Japan Productivity Center for Socio Economic Development, 2007). The Japan Travel Bureau Foundation estimated travel sales to be approximately 7553 billion yen (approximately 72.24 billion dollars) (Nikkei Newspaper, 2008). Today, Japanese travel agencies tend to focus on two primary targets: retired baby boomers and young consumers. To promote travel information search, new retail channels have been devel oped, such as electronic terminals in convenience stores, PC Internet sites, and mobile Internet sites. According to Japan Tourism Association (2007), the Internet is the fourth major travel infor mation resource in Japan, followed by WOM. In fact, the use of the former in travel information search accelerates even more when combined with the latter. For example, the Nikkei Institute of Industry and Regional Economy surveyed the use of electronic bulletin boards, and found that one in four consumers (in particular, 40% of those in their 1930s) often use the Internet to find WOM based travel information (i.e., to review opinions, claims, recom mendations, etc.) (Nikkei Newspaper, 2008). Such users are more likely to be more satisfied than those who do not access such information. For example, one of the largest online travel agencies, Rakuten Travel, offers a website on which people exchange opin ions and critiques regarding hotel rooms, facilities, meals, services, etc. Their sales volume (20.8 billion yen) and sales revenue (1.9 billion yen) increased by over 20% from 2006 to 2007 (Nikkei Financial Daily, 2007). The Japanese Ministry of Economy, Trade and Industry (2003, 2008) estimates that the value of online travel sales increased from 265 billion yen (2.6 billion dollars) in 2001 to 505 billion yen (4.9 billion dollars) in 2006. The latter figure represents approximately 2.18% of total e commerce sales in Japan.

Recently, the mobile Internet has rapidly gained popularity in travel information search in Japan, because a mobile Internet connection is much less expensive than that of a PC. The mobile Internet has an "always on" function, which allows consumers to use mobile Internet services at any time, in any place. Its ubiquitous nature is one of its most enthusiastically accepted features. In addition, downloading and enjoying ring tones, games, and music provide consumers with practical reasons to spend more time with a mobile device each day in commuting trains. Following the successful launch of i mode in 1999, Vodafone introduced a similar service called Vodafone Live! while KDDI started its own ZDNet (Okazaki, 2004).

Since 2006, popular search engines, such as Yahoo! and Google, have been incorporated into major mobile Internet providers, and have become among the most popular tools, as in the case of tourism information. Japanese travel industries provide many services through mobile phones: booking services for hotels, holiday packages, and airline and train tickets. Most illustratively, Japan Airline (JAL) started the nation's first mobile based boarding procedure, "Keitai Check in," in 2003: passengers can select a seat and request an electronic boarding pass from home using a mobile phone. In 2005, JAL advanced this system with its "Touch & Go" boarding system. With this system, travelers can go straight to the airport security checkpoints without lining up at a check in counter, by showing a radio frequency mobile phone with an identification chip, to obtain a "passenger copy" that can be used for boarding through a gate machine (Japan Airlines, 2005).

As Table 1 shows, the use of mobile Internet has been increasing steadily in Japan, while the use of traditional media, such as tele vision, radio, newspapers, and magazines, has slowly but surely

Table 1
Media use in travel information search in Japan (%).

Information resources	2000 (n 7907)	2001 (n 7423)	2002 (n 7839)	2003 (n 7311)	2004 (n 7375)	2005 (n 6885)
Word-of-mouth	42.4	41.6	41.9	37.1	39.4	35.1
Guidebooks	39.5	35.1	37.8	35.8	35.9	34.5
Brochures	35.7	35.0	35.6	35.1	35.5	33.2
Internet	11.2	15.4	18.0	24.0	26.0	30.3
Specialized magazines	30.7	29.1	29.2	29.7	29.2	29.1
Advertising in newspapers/magazines	23.5	24.4	23.6	19.8	20.7	19.8
Travel agencies	20.4	18.1	19.1	18.3	18.2	18.1
Feature articles in newspapers/magazines	16.8	16.9	17.0	13.5	13.2	12.4
TV/Radio programs	11.5	12.1	12.2	10.1	10.6	10.7
Tourist information center	12.6	12.8	12.4	10.5	11.0	8.8
Books/novels	8.1	7.1	7.3	6.2	6.2	6.3
Outdoor advertising	6.7	7.1	7.1	5.4	5.4	4.3
TV/radio commercials	4.4	4.5	4.5	3.8	3.7	3.4
Trade show	2.3	2.8	2.4	1.7	1.7	1.8
Mobile Internet	0.8	0.7	1.4	0.9	1.3	1.5
Ticketing terminals at convenience store	0.5	0.2	0.4	0.2	0.1	0.2
Others	0.5	0.2	0.1	0.1	0.1	0.2

Note: multiple choice questions with multiple answers allowed. Each cell indicates a percentage based on the total number of respondents.
Source: Japan Tourism Association (2007).

been decreasing (Japan Tourism Association, 2007). Since 2005, Internet access via mobile device has exceeded that via PC, and has created a threat to PC based markets (Ministry of Internal Affairs and Communication, 2007). As a result, cross media promotions and campaigns have become an important strategic topic among Japanese marketers.

3. Theoretical foundations

To explore the main thesis of this research, we adopt two principal tenets of consumers' media usage in travel information search: (1) gender effects on information processing, and (2) media displacement reinforcement theory. Using these perspectives, in the following section we describe the theoretical justification of the present study.

3.1. Gender differences in information processing

Information processing is the process of acquiring, interpreting, manipulating, storing, retrieving, and classifying recorded information (Putrevu, 2001). A number of personal factors influence information processing, including gender, social class, culture, education, and knowledge, among others (Rodgers & Harris, 2003). Prior research has identified important gender differences in spatial ability, memory, and judgment formation. Most importantly, however, males and females differ fundamentally in their information processing strategies: men and women tend to process stimuli differently, in terms of types of information and levels of

elaboration, and hence arrive at different judgments (Wolin & Korgaonkar, 2003).

Meyers Levy et al. (Meyers Levy, 1989; Meyers Levy & Maheswaran, 1991; Meyers Levy & Sternthal, 1991) addressed the *selectivity hypothesis*, which is grounded on the assumption that the male agentic role is characterized by concern for the self, while the female communal role typically embraces concern for both the self and others (Meyers Levy, 1988, 1989). This hypothesis posits that males typically have a "single focused agentic orientation" (Meyers Levy, 1988, p. 529), and employ a single cue or a few cues that lead to a single inference, while females are comprehensive processors who are likely to have a "multi focused communal orientation" (p. 529) that assimilates all available information. Men often rely on a subset of highly available cues to form a judgment, and thus tend to be selective processors. By contrast, women are prone to be more comprehensive processors who engage in deeper processing of all information given. Thus, men tend to use simplified processing or educated guesses, and thus base their conclusions on less information, whereas women are more apt to give equal weight to self generated and other generated information, encode more message claims, and elaborate on specific claims more extensively. To date, this *selectivity hypothesis* is one of the most widely accepted gender theories, and it has been employed in many disciplines, including marketing and information science (Chang, 2007; Hess, Fuller, & Mathew, 2006; Hupfer & Detlor, 2006; Putrevu, 2001).

Sex differences are often attributed to the biological differences, in particular, in brain morphology. If men and women think differently, their brains must also differ in some way. For example, it is known that the cerebrum[2] as a whole is larger in men. Giedd et al. (1996) found that amygdala[3] volume increased significantly with age only in males, and that hippocampal[4] volume increased significantly with age only in females. The former is responsible for the formation of long term implicit or procedural memory ("how to do things"), while the latter is involved with the formation of long term explicit or declarative memory ("what things are") (Levin, 1997). Similarly, Baron Cohen, Knickmeyer, and Belmonte (2005) argued that, probably due to the larger amygdala growth, the male brain contains greater and denser packing of neurons. By contrast, in the female brain, the connective tissue that allows communication between the two hemispheres of the brain tends to be thicker, and perhaps facilitates interchange. Thus, whereas males (on average) activate only the left hemisphere (important for speech communication), women are likely to activate not only the left but also the right hemisphere (important for certain perceptual and spatial functions). As a result of this and other differences in brain structure, males on average have a stronger drive to systemize (analyze how things work, extract underlying rules, and control or predict the systems), and females to empathize (recognize another's feelings and respond to them with an appropriate emotion) (Baron Cohen, 2004). Sex hormones seem to help in developing both behavioral and brain differences between the sexes. However, these studies of sexual differences based on *neuroimaging*[5] are still under debate, and the results are often conflicting (Bishop & Wahlsten, 1997).

Prior research on marketing communication has provided some evidence for sexual differences in media choice behavior between males and females. For example, women are more emotionally

[2] An area in the front of the brain concerned with higher thinking (Jonas, 2005).
[3] An almond-shaped structure in the center of the brain involved in the experience of anxiety, distress, and fear (Jonas, 2005).
[4] A part of the brain situated in the lateral ventricle. It is important in learning and memory (Jonas, 2005).
[5] The use of X-ray studies and magnetic resonance imaging to detect abnormalities or trace pathways of nerve activity in the central nervous system (Longe, 2006).

attached to their possessions than males, and are more likely than men to perceive favorably promotional emails with hypertext links for additional information (Phillip & Suri, 2004). Perhaps due to their memory advantages with respect to visual and verbal stimuli (Edens & McCormick, 2000), women are more likely than men to engage in effortful elaboration of the interactive presentation of logos, images, and hyperlinks with a diverse range of promotional incentives in a mobile messaging service (Okazaki, 2007). Prior research also indicates that significant differences exist between male and female users in computer use and Internet access (Wolin & Korgaonkar, 2003).

On the other hand, there has been little research on gender effects in the search for travel information. Our literature review found only two studies. First, Luo, Feng, and Cai (2004) investigated tourist information provision and acquisition in terms of the Internet and other media sources. They found that gender and household income are the primary determinants of information source preference, and that age, education, and occupation are not. Second, Kim et al. (2007) studied further gender effects on tourists' information search, and found that men and women differ in terms of perceptions of travel website functionality, and of online information search behavior. Their results indicate that females tend to value both online and offline information sources in travel destination choice, and to have more favorable attitudes toward a variety of website functionalities. Females were also found to visit more travel websites more frequently than males. However, the exploration of gender effects remains an interesting exception in online travel research, and further exploration is required.

3.2. Media displacement and reinforcement

When a new medium, such as the Internet, is introduced to the existing media market, competition or coexistence may occur with the alternative media that provide for similar needs. If the competition is very intense, and if one medium is superior to the others in terms of gratification, then the more powerful medium may appropriate the niche space of the others. If this appropriation is only partial, media displacement will take place; otherwise (although rarely) competitive exclusion will occur. The word "niche" originally meant an opening to hold something, such as a statue or a vase. Dimmick and Rothenbuhler (1984) proposed the *bioecological theory of the niche* to examine the competition between new and old media. Niche theory was originally developed in animal community ecology to explain "how populations compete and coexist with limited resources in an ecological community" (Dimmick & Rothenbuhler, 1984, p. 105). Since then, this term has been applied widely in other disciplines, to the extent that the expressions "niche market" and "niche player" are now often used in marketing.

Niche theory has been applied to explain the evolving use of interactive media, as opposed to face to face communication. Dimmick, Kline, and Stafford (2000) argue that email is often preferred to phone calls because people see it as necessary to overcome temporal and spatial barriers, even though it may not be the optimal medium for conveying feelings. As a result, the two media are likely to coexist with some displacement, but not complete replacement. Dimmick, Chen, and Li (2004) furthered our understanding of the media displacement effects between interactive and traditional media in providing news. Based on niche theory and uses and gratifications theory, they compared consumers' perceived gratification opportunities from the Internet directly with those from broadcast television, newspapers, radio, and cable TV. Their findings suggest that (1) the Internet has the largest niche on gratification opportunities for news consumers; (2) the Internet and broadcast television have a moderate degree of overlap or similarity of their niches on gratification opportunities. Thus, the two media are likely to provide similar gratification opportunities, while competing with each other for news consumers; (3) as a result, the Internet has a moderate displacement effect on broadcast television. However, because the Internet and traditional media do not overlap greatly, the former is unlikely to replace the latter completely.

To date, this work serves as a reference point in media niche theory, although two important limitations can be postulated. First, one may question whether there is any additional effect when two media overlap in their gratification opportunities. That is, if they complement each other, this coexistence may produce a reinforcing effect. Second, Dimmick et al.'s (2000) study skillfully describes the interrelationship between media gratification opportunities and consumer choice, but does little to explain the causal relationships between the determining factors.

Our literature review found only one study that examined these two questions. Tsao and Sibley (2004) addressed whether the Internet displaces or reinforces "other media" as a source of advertising information. Other media include TV, radio, magazines, billboards, daily/weekly paid newspapers, free community papers, direct mail, and in store advertising sheets. A logistic regression analysis found that attitude toward Internet advertising (i.e., dependent variable) was positively associated with all four independent variables: attitudes toward magazines, radio, direct mail, and billboards. That is, there seemed to be reinforcement effects of attitudes toward other media on attitude toward Internet advertising. However, when the use of Internet advertising replaced attitude as a dependent variable, mixed results were found. The increasing use of Internet advertising was positively associated with attitudes toward direct mail and television, but negatively associated with attitudes toward free community papers and weekly newspapers. Therefore, there appear to be displacement effects to some extent, at least as far as free community papers and weekly newspapers are concerned.

4. Hypotheses and research questions

The preceding discussion reveals three important questions that justify the current study. First, gender differences appear to exist in information processing, as well as in prior media choice in external information search. Second, media displacement reinforcement effects may exist among both new and old media, in terms of attitude and use. This study posits that gender effects will affect consumers' satisfaction, attitudes, and use of competing media. Specifically, we aim to address one principal question: whether females are more likely than males to switch from other media to mobile Internet because of stronger media displacement effects.

To explore this issue, we first propose a causal model that relates satisfaction, attitudes, and use of the media. We then explore the moderating effects of gender in the model. Fig. 1 shows our research model.

4.1. Core model

The literature in service and loyalty research indicates a consistent linear relationship between three principal variables: satisfaction, attitude, and loyalty. We first use this basic frame to align the three types of media in question in this research: mobile Internet, PC Internet, and traditional media. Satisfaction refers to whether "the consumers' fulfillment is pleasant or unpleasant," and it can be considered a general evaluative construct (Olsen, 2002, p. 241). Attitude is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1). Thus,
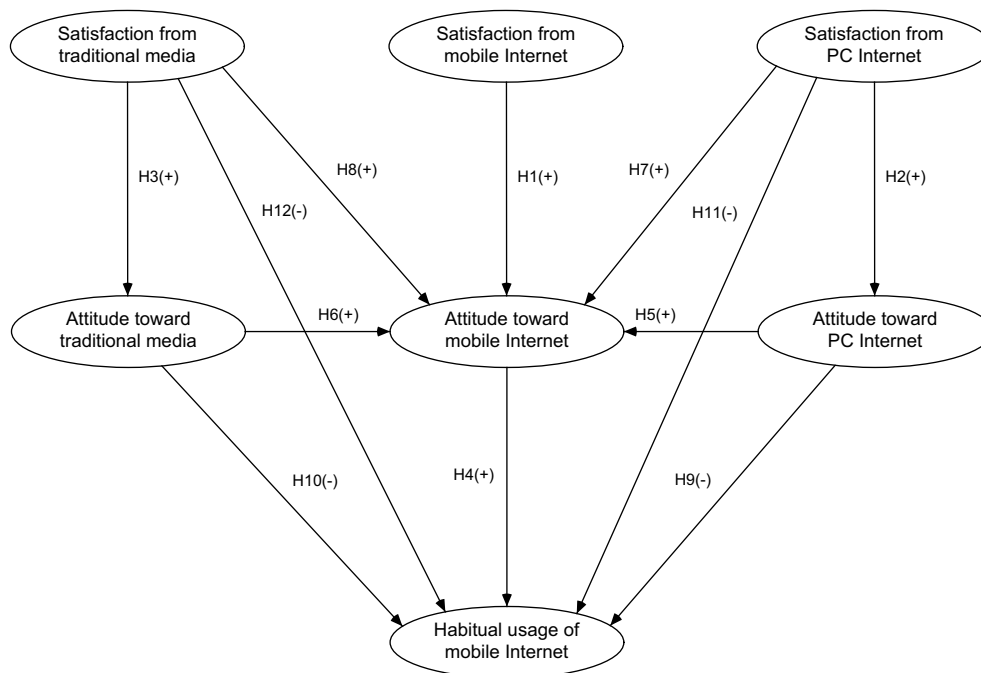
Fig. 1. Research model.

H1 satisfaction from mobile Internet directly and positively affects attitude toward mobile Internet.

H2 satisfaction from PC Internet directly and positively affects attitude toward PC Internet.

H3 satisfaction from traditional media directly and positively affects attitude toward traditional media.

Attitudes have been found to be the result of customer satis faction, which in turn affects repurchase behavior (Oliver, 1980; Yi, 1990). Repurchase behavior is often termed loyalty, which repre sents the relationship between relative attitude and repeat patronage (Olsen, 2002). In the context of media study, the term loyalty can be paraphrased as the habitual use of a given medium. Thus,

H4 attitude toward mobile Internet directly and positively affects the habitual use of mobile Internet.

4.2. Reinforcement effects

Tsao and Sibley's (2004) findings seem to indicate that, at an attitudinal level, there may be positive relationships between new (Internet) and old media (billboards, direct mail, magazines, radio, and television). Their findings appear to be consistent with prior research that examined media substitution between Internet and direct mail (Leong, Huang, & Stanners, 1998), radio (Stempel, Hargrove, & Bernt, 2000), and television (Lin, 1999). In the light of the hierarchy of effects model (Preston, 1982), such consistency leads us to conclude that some consumers with favorable atti tudes toward traditional media or PC Internet may have inten tions to use mobile Internet, even though they are not using it. Thus,

H5 attitude toward PC Internet directly and positively affects atti tude toward mobile Internet.

H6 attitude toward traditional media directly and positively affects attitude toward mobile Internet.

Satisfaction is considered a precursor of attitudes, and it is a general evaluative construct. Therefore, we expect a similar reinforcement effect on the attitudinal level:

H7 satisfaction from PC Internet directly and positively affects attitude toward mobile Internet.

H8 satisfaction from traditional media directly and positively affects attitude toward mobile Internet.

4.3. Displacement effects

In the same study, Tsao and Sibley (2004) found negative rela tionships between attitudes toward existent media (weekly newspapers and free community papers) and Internet use. That is, displacement effects can be found in the relationship of the Internet to such print media. This occurs because consumers prefer the instant speed of information transmission through the Internet when they need to search and download the same information quickly from the Internet, with no time constraints. By the same token, we posit that the mobile Internet could pose a major threat not only to traditional media, but also to the PC Internet, due to its greater flexibility in time and place. Thus,

H9 attitude toward PC Internet directly and negatively affects the habitual use of mobile Internet.

H10 attitude toward traditional media directly and negatively affects the habitual use of mobile Internet.

In general, the more satisfied consumers are with a medium, the less likely they are to switch to a new medium. This is true even when the level of satisfaction is low. That is, a new medium, such as mobile Internet, can be a major threat to existing media, when consumers seek more flexible ways of finding external information. Hence,

H11 satisfaction from PC Internet directly and negatively affects the habitual use of mobile Internet.

H12 satisfaction from traditional media directly and negatively affects the habitual use of mobile Internet.

4.4. Gender differences

Prior research provides good reason to believe that the media displacement effects in favor of the mobile Internet are more accentuated among females than among males. Okazaki (2007) found that female consumers are more likely to perceive mobile advertising favorably than male consumers. While traditional male dominance in PC Internet use is still present, recent surveys show that females are more frequent users of the mobile Internet. In fact, an increasing number of mobile content sites now deliver attractive services associated with women's wants and needs, including work, shopping, hobbies, and love (Habuchi, Dobashi, Tsuji, & Iwata, 2005). A survey conducted by D2 Communications with 5346 i mode users found that the majority of males and females in higher age groups bought travel and accommodation tickets, and food and beverages, via the mobile Internet (D2 Communications, 2006).

This tendency appears to be attributable to two important factors. First, networking is a vital tool that helps Japanese women to assimilate more easily into a male dominated culture, and networking also gives them the collective power and confidence to advocate and act in support of change within organizations (Habuchi et al., 2005). The mobile Internet provides them with an ideal communication tool. Second, Japanese women make up a significant majority of the buyers of consumer goods and services. The post school, pre marriage set does so much shopping and traveling that the mobile Internet is becoming a useful campaign channel for such products (Griffy Brown & Oakland, 2007). Given this trend, we posit that the strength of media displacement effects will be greater among females than among males. Thus,

H13a for female consumers, the negative relationship between attitude toward PC Internet and the habitual use of mobile Internet will be attenuated, and

H13b for female consumers, the negative relationship between attitude toward traditional media and the habitual use of mobile Internet will be attenuated.

Finally, the moderating effects of gender will also be examined in terms of the strength of media perceptions. In the light of our theoretical justifications of gender effects, we posit that female consumers should manifest a stronger predisposition toward media displacement in favor of mobile Internet in the expressed mean levels of media perceptions. That is, females perceive satisfaction from and positive attitude toward mobile Internet to a much greater extent than males. Therefore,

H14a satisfaction from mobile Internet will be stronger for potential female travelers than for potential male travelers.

H14b attitude toward mobile Internet will be stronger for potential female travelers than for potential male travelers.

In the following section, we describe the study's methodology in detail.

5. Methodology

The study was conducted in Japan, an Asian country that has experienced both high Internet penetration and advanced mobile communication technology. To address our research questions, a quasi experimental within subject design was employed, in the sense that all subjects were asked to give their reactions to three different media: mobile Internet, PC Internet, and traditional media. A within subject design was chosen because the niche theory involves how people cope with competing media for limited resources. Thus, participants need to have information on all three media alternatives.

The respondents were recruited from its consumer panel by a professional research firm. Following Dabholkar's (1994) method, we created a scenario in which the respondents would hypothetically search the medium for the best vacation travel package. We operationalized traditional media as a set of broadcast television, radio, newspaper, and magazine media. This is a recognized classification method in Japanese advertising agencies.

The survey questionnaire was divided into three parts. The first included questions related to demographic information, such as age, gender, and occupation. The second and third parts involved the main questions on the use of traditional, PC Internet, and mobile Internet media, for high and low involvement products, respectively. All scales were measured using 7 point Likert scales. Satisfaction and habitual usage were measured by scales adapted from Olsen (2002). The scale items for attitude were taken from Dabholkar and Bagozzi (2002). All items were first prepared in English and adapted to the study's context (i.e., media usage). They were then translated into Japanese, and back translated into English by a native bilingual translator, to ensure consistency and accuracy of meaning. A group of academics in advertising and marketing checked the wording and made appropriate modifications (Craig & Douglas, 2005).

To check the wording and reliability of the question items, the questionnaire was pretested with 80 potential respondents. The Cronbach's alphas were found to range from 0.72 to 0.84, and were thus acceptable. A realism check showed that the scenarios of seeking the best vacation travel package by mobile Internet, PC Internet, and traditional media were all perceived to be reasonably realistic.

6. Results

6.1. Respondents' profile

During the surveys, the online panels produced a total of 992 responses. In terms of occupation, the majority (57%) were office workers, including executives and managerial, administrative, and clerical staff; almost one third were housewives (16%) and freelance workers (15%); self employed adults and students were in the minority (less than 10%). Table 2 shows the age and gender distribution of the respondents.

As a preliminary analysis, we performed a test for common method bias, using the post hoc Harman's single factor test. All of the construct variables were included in an exploratory factor analysis, and the unrotated factor solution was examined. We found that no single factor accounted for the majority of the variance in the variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Table 3 summarizes the mean values of the proposed constructs.

6.2. Measurement model assessment

Next, we analyzed our proposed model, by examining the direct links between the constructs. In doing so, we followed the two step approach recommended by Anderson and Gerbing (1988), which consists of (1) the estimation of a confirmatory factor analysis (CFA), and (2) the estimation of the structural model. In the former, the CFA was composed of 7 latent constructs and a total of 22 variables. We used the maximum likelihood method with AMOS 7.0 (Byrne, 2001). In the light of the recommendations by Bagozzi and

Table 2
Respondents' demographic profiles (%).

Demographics	Male	Female
Occupations		
Office worker	78.3	32.2
Self-employed	9.1	4.6
Part-time job	4.5	21.6
Housewives	0.0	35.5
Others	8.2	6.0
Age		
20–29	26.0	25.2
30–39	34.0	33.3
40–49	40.0	41.5

Note: n 992.

Table 4
Reliability and validity.

Constructs	Composite reliability			Average variance extracted		
	Male	Female	Total	Male	Female	Total
S_{mobile}	0.99	0.98	0.99	0.77	0.75	0.76
S_{PC}	0.98	0.96	0.97	0.69	0.62	0.66
$S_{traditional}$	0.98	0.98	0.98	0.73	0.69	0.72
A_{mobile}	1.00	1.00	1.00	0.83	0.81	0.82
A_{PC}	1.00	1.00	1.00	0.86	0.83	0.85
$A_{traditional}$	1.00	1.00	1.00	0.81	0.80	0.81
U_{mobile}	0.99	1.00	0.99	0.88	0.90	0.89

Fit indexes for the total sample: χ^2_{227} 872.68 ($p < 0.001$), CFI 0.98, TLI 0.97, and RMSEA 0.054. The indexes for the male and female model were similar except χ^2 statistic value.
Note: S satisfaction; A attitude; U usage. The subscript indicates the type of medium. For example, "S_{PC}" stands for the satisfaction from PC Internet.

Yi (1988), multiple indexes were used to assess the goodness of fit of the overall model: the Satorra Bentler χ^2 statistic, the comparative fit index (CFI), the Tucker Lewis index (TLI), and the standardized root mean square error of approximation (RMSEA). All of the indexes except the χ^2 statistic are in an acceptable range. However, this statistic tends to be substantial when the sample size is large (Byrne, 2001). In addition, all items exhibited high standardized loadings on their intended factors. Thus, the measurement model was deemed to be acceptable.

Next, to test the invariance of the measurement model between male and female groups, a multigroup analysis was performed. In this analysis, the unconstrained and constrained models were simultaneously estimated across groups. The resulting chi square difference was found to be statistically insignificant (χ^2_{17} 22.73, p 0.16). We thus pooled the two samples to assess the overall model reliability and validity. The composite reliability (CR) and average variance extracted (AVE) were calculated to determine the level of internal consistency (Fornell & Larcker, 1981). The former represents a lower bound estimate of internal consistency due to its assumption of equal weightings of items, while the latter acts as a more stringent indicator of internal consistency (Hair, Black, Babin, Anderson, & Tatham, 2006). Table 4 summarizes the results. Almost all scores exceeded a benchmark of 0.70.

Discriminant validity was assessed from the latent constructs correlations matrix, where the square roots of the average variance extracted (AVE) along the diagonal are reported. The correlations between the constructs are reported in the lower left off diagonal elements in the matrix. Fornell and Larcker (1981) suggest that average variance shared between a construct and its measures should be greater than the variance shared between the constructs and other constructs in the model. Thus, discriminant validity is satisfied when the diagonal elements (square root AVE) are greater than the off diagonal elements in the same row and column. This condition was met for all the combinations. Given the results obtained from the measurement model assessment, we proceed to the structural model assessment.

6.3. Structural model assessment

In the proposed model in Fig. 1, we posit that there are displacement and reinforcement effects between new and

Table 3
Mean values.

Proposed constructs	Traditional media			PC Internet			Mobile Internet		
	Male	Female	t	Male	Female	t	Male	Female	t
Satisfaction	3.85	3.57	3.03**	2.63	2.43	2.73*	4.37	4.58	−1.97
Attitude	3.63	3.27	4.18**	2.39	2.08	4.38**	4.32	4.47	−1.54
Loyalty	3.93	3.66	2.52*	2.37	2.08	3.39**	4.78	5.19	−3.48**

Note: *$p < 0.05$, **$p < 0.01$

traditional media. To explore this issue, the structural paths for the hypothesized relationships between the proposed constructs were examined for the full sample with maximum likelihood method via AMOS 7.0 (Byrne, 2001). Most of the indexes indicate good model fit, except for the χ^2 statistic. Fig. 2 shows the coefficient estimates of the hypothesized paths.

If we return to H1 H4, our data supported the direct and positive relationships between satisfaction and attitude. Specifically, we considered the paths (1) from satisfaction from mobile Internet to attitude toward mobile Internet (H1), (2) from satisfaction from PC Internet to attitude toward PC Internet (H2), and (3) from satisfaction from traditional media to attitude toward traditional media (H3). Our data reveal that all three paths were positive and statistically significant ($p < 0.001$), with effect sizes being very strong. Thus, H1 through H3 were supported. Similarly, the path from attitude toward mobile Internet to habitual usage of this medium was strong and significant at $p < 0.001$ (standardized β 0.83). This provides support for H4.

Next, H5 and H6 address the media reinforcement proposition between distinct media. Our results indicate that the path from attitude toward PC Internet to attitude toward mobile Internet was positive and statistically significant, thus confirming H5. However, the path from attitude toward traditional media to attitude toward mobile Internet was positive but insignificant. Thus, H6 was rejected by our data.

H7 and H8 posit the positive influence of satisfaction from other media on attitude toward mobile Internet. However, our statistical results are mixed. In H7, the path from satisfaction from PC Internet to attitude toward mobile Internet was significant with standardized β 2.57, whose sign is opposite to our predicted direction. In H8, the path from satisfaction from traditional media to attitude toward mobile Internet was not statistically significant. Thus, neither H7 nor H8 was supported.

In H9 and H10, we postulate that distinct media compete with and replace each other when travelers have similar information needs. The displacement effects of attitude toward PC Internet on the habitual usage of mobile Internet was supported, as this path was negative and statistically significant at $p < 0.01$ (standardized β 2.63). Similarly, the path from attitude toward traditional media to the habitual usage of mobile Internet was negative and significant (standardized β 0.38). Thus, both H9 and H10 were supported by our data.

By the same token, H11 and H12 predict the displacement effects of satisfaction from other media on the habitual usage of mobile Internet. To our surprise, our data reveal that satisfaction from PC Internet affects significantly but positively the habitual usage of mobile Internet at $p < 0.05$ (standardized β 1.71). The same pattern was observed in the effect of satisfaction from
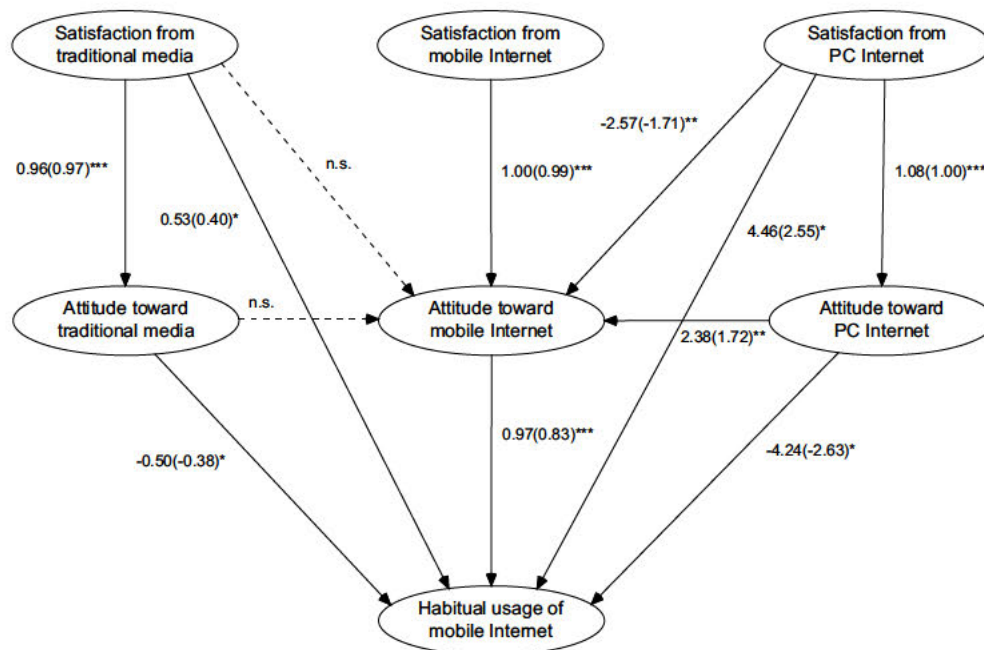
Fig. 2. Structural equation modeling results. Fit indexes: χ^2_{238} 1182.70 ($p < 0.001$), CFI 0.97, TLI 0.96, and RMSEA 0.063. Note: Unstandardized coefficients with standardized coefficients in parenthesis. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, n.s. nonsignificant.

traditional media on the habitual use of mobile Internet (standardized β 0.40). Thus, neither H11 nor H12 was supported.

6.4. Multigroup analysis

H13a posits that gender significantly moderates the negative relationship between attitude toward PC Internet and the habitual use of mobile Internet, in that this relationship will be attenuated for females. A similar prediction was made in H13b with regard to the negative relationship between attitude toward traditional media and the habitual use of mobile Internet. In an attempt to detect any statistical difference in the paths between the male and female groups, we performed a multigroup analysis. Following Byrne's (2001) recommendation, we first performed an individual estimation for each group separately. Table 5 shows the results of this analysis.

In the male group model, none of the displacement and reinforcement effects was statistically significant. By contrast, in the female group model, some displacement effect appears to exist between PC Internet and mobile Internet: the path from

attitude toward PC Internet to the habitual use of mobile Internet was negative and significant, while the path from attitude toward traditional media to the habitual use of mobile Internet was insignificant. Next, we performed a multigroup structural equation modeling by creating two models. In the first model, all structural paths were unconstrained between the two groups; in the second, all paths were constrained to be equal. The two models were then simultaneously estimated. However, the difference in chi square values was insignificant (χ^2_{27} 25.04, p 0.57). A series of t tests detected no statistical difference in the path coefficient across the groups at $p < 0.05$. Given this information, we concluded that all of the paths in our causal structure are invariant across two groups. Hence, neither H13a nor H13b was supported by our data.

6.5. Latent mean structures

Finally, H14a and H14b propose that satisfaction from mobile Internet and attitude toward mobile Internet, respectively, will be stronger for female respondents than for male ones. To test these hypotheses, we performed a test for invariant latent mean structure. In the CFA, which we validated in the measurement assessment, the parameters were to be freely estimated in the female group model, while those in the male group model were fixed to zero as a reference group. In this way, we examined whether the latent means for the former were significantly different from those for the latter. Table 6 shows the results of the test for invariant latent means. We see clearly that all latent means except one show statistically significant differences. Specifically, the latent means for satisfaction from, and attitude toward, PC Internet, and for satisfaction from and attitude toward traditional media were significantly greater in the male group model than in the female group model, suggesting that the male respondents are likely to give higher importance to these constructs. By contrast, the differences in satisfaction from, attitude toward, and habitual use of mobile Internet were statistically stronger in the female group model than in the male group model. Thus, female consumers are more likely to perceive these

Table 5
Individual estimations.

Paths	Males		Females	
	Path coefficient	t-value	Path coefficient	t-value
$S_{mobile} \rightarrow A_{mobile}$	0.99	33.36***	0.99	26.36***
$S_{PC} \rightarrow A_{PC}$	1.00	30.10***	0.99	21.76***
$S_{traditional} \rightarrow A_{traditional}$	0.95	30.48***	0.97	26.40***
$A_{PC} \rightarrow A_{mobile}$	3.43	1.05 n.s.	1.22	2.22*
$S_{PC} \rightarrow A_{mobile}$	−3.40	−1.05 n.s.	−1.21	−2.20*
$A_{mobile} \rightarrow U_{mobile}$	0.86	26.41***	0.80	21.27***
$A_{PC} \rightarrow U_{mobile}$	−4.67	−1.01 n.s.	−2.47	−2.06*
$A_{traditional} \rightarrow U_{mobile}$	−0.17	−1.26 n.s.	−0.38	−1.42 n.s.
$S_{PC} \rightarrow U_{mobile}$	4.60	0.99 n.s.	2.40	1.99*
$S_{traditional} \rightarrow U_{mobile}$	0.22	1.59 n.s.	0.42	1.54 n.s.

Note: completely standardized coefficients. Note: S satisfaction; A attitude; U usage.
The subscript indicates the type of medium. For example, "S_{PC}" stands for the satisfaction from PC Internet.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 6
Latent mean structures.

Constructs	Males latent means	Female latent means	Standard error	t-value
S_{mobile}	0	0.22	0.11	2.08*
S_{PC}	0	−0.26	0.07	−3.79***
$S_{traditional}$	0	−0.31	0.09	−3.25***
A_{mobile}	0	0.13	0.10	1.28 n.s.
A_{PC}	0	−0.33	0.07	−4.55***
$A_{traditional}$	0	−0.34	0.09	−3.87***
L_{mobile}	0	0.41	0.12	3.49***

Fit indexes: χ^2_{490} 1612.80 ($p < 0.001$), CFI 0.96, TLI 0.96, RMSEA 0.048.
Note: The latent means of males were fixed to zero. Note: S satisfaction; A attitude; U usage. The subscript indicates the type of medium. For example, "S_{PC}" stands for the satisfaction from PC Internet. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

constructs associated with mobile Internet more favorably than their male counterparts. Thus, both H14a and H14b were supported.

7. Limitations

Before considering the implications of our findings, it is important to address the limitations of our research. This study suffers from the limitations of survey research based on self reported responses, in that we did not verify the actual media use of the respondents. In addition, within subject designs posses several shortcomings, all of which are associated with the fact that they rely on repeated measures (Keppel, 1991). Second, a scenario approach, although proven to be effective in the past, may have been too simplistic, and may have excluded some realistic details concerning types of travel (domestic or international), duration, etc. By the same token, we did not separate media effect from content effect, while no control was exercised on media exposure. Third, this research was performed in the Japanese context. Although no culture related variables were included in the research design, international replication of the research would provide additional external validity. These limitations should be overcome by future extensions of this study.

8. Discussion

Based on the results detailed in the preceding sections, several conclusions can be drawn regarding gender and media displacement reinforcement, and these make significant contributions to the existing literature.

8.1. Theoretical implications

First, our findings support most of the basic theoretical propositions of causal relationships between satisfaction, attitudes, and usage of distinct media. Our research model succeeded in explaining the displacement effects of satisfaction from, and attitudes toward, other media on the habitual usage of mobile Internet. That is, those who are relatively satisfied with the information provided by broadcast television, radio, news paper, or magazine media are unlikely to change their information source to the mobile Internet. The same is true for PC users. On the other hand, we found modest reinforcement effects of attitude toward PC Internet on attitude toward mobile Internet, which appears to be consistent with Tsao and Sibley (2004). The positive effect of the path from satisfaction from PC Internet on the habitual use of mobile Internet was also fairly solid, indicating that strong reinforcement effects may exist between the two media.

In this regard, our research corroborates the media displacement reinforcement theory, and thus makes important contributions to the literature. In terms of niche theory, the mobile Internet seems to offer similar gratification opportunities to the PC Internet. However, their competition produces positive synergy, at least at an attitudinal level. That is, they seem to work as complementary media, in which consumers choose one way or the other in which to satisfy their information needs (Dimmick et al., 2000). In this sense, they are essentially multiple media users. On the other hand, these complementarity effects hardly surface at a satisfaction level. Probably, those who are satisfied with one medium (especially PC Internet) had already formed their firm preference, which is difficult to change. Given that an important portion of the respondents are office workers, this may make practical sense.

Second, our findings suggest that the mobile Internet may not be an imminent threat to traditional media, at least at an attitudinal level, because the path from attitude toward traditional media to attitude toward mobile Internet was not statistically significant. Nevertheless, the path from attitude toward traditional media to the habitual usage of mobile Internet was indeed negative and significant, suggesting that some consumers may be willing to change their media usage habits. This seems to be consistent with the decreasing trend in traditional media use at an aggregate level.

In terms of gender difference, both the multigroup analysis and the latent mean structures suggest that females are indeed more willing candidates for active mobile Internet use, which appears to corroborate prior research (Okazaki, 2004, 2007). The results also seem to be consistent with the selectivity hypothesis, in that females are more likely to engage in deeper information processing by searching all available media for the target information. This is precisely what Meyers Levy and Maheswaran (1991) meant by "multi focused communal orientation" (p. 529). Because of this flexible orientation, females are less reluctant than men to switch media or engage in simultaneous use of complementary media to find the necessary information.

In this regard, our results also substantiate Kim et al.'s (2007) study, which finds that females tend (1) to value distinct types of information sources in travel destination choice, and (2) to visit travel websites more frequently than males. Given this background, it seems reasonable to predict that females may feel less reluctant to use multiple media. In other words, they tend to use a more diverse range of information sources than males, including the mobile Internet. Such media behavior may also reflect the fact that, either online or offline, information search and exchange through "talk" make up the substance of women's friendships networks (Weiser, 2000). However, this is beyond the scope of our study, and should be explored in future research.

8.2. Managerial implications

The reinforcing or positive relationship between attitudes toward PC Internet and mobile Internet may imply that the current practices of cross media campaigns between these media are indeed correct in terms of their objectives and effectiveness. For example, many Japanese firms insert industrial code called "QR (quick response) code" into their websites, so that browsing customers can scan the image from the PC Internet, and have quick access to their mobile websites. On the other hand, firms that employ cross media campaigns via broadcasting and print media are unlikely to be rewarded, because on an attitudinal level few changes may be induced.

Next, firms should be aware that this reinforcement may turn into a displacement effect, in that those who are dissatisfied with the PC's constraints in time and space may be willing to switch to the mobile Internet for their emergent needs. This scenario may

become realistic, especially after the recent introduction of iPhone 3 G in 22 countries—as of July 11, but in more than 70 countries by December 2008. In the iPhone, a variety of applications, including travel, news, business, health, sports, and games, work not only over cellular networks, but also via Wi Fi, which "automatically switches between them to ensure the fastest possible download speeds" (Apple, 2008). This type of more user friendly interface makes it more likely that users will change from the fixed PC to the wireless device.

Last, our research also provides a practical suggestion for firms to implement gendered travel marketing via mobile devices. Women's stronger predisposition to seek extensive networking and exchange WOM based information makes the mobile Internet the most appropriate tool for disseminating travel information. Furthermore, the findings of our study suggest that females may be more sensitive than males to cross media campaigns. Given that females are the primary readers of weekly and monthly magazines in Japan, firms should utilize print media to guide readers to mobile based information search.

References

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.

Apple. (2008). Apple introduces the new iPhone 3G, product info for media: iPhone. http://www.apple.com/pr/library/2008/06/09iphone.html. Accessed 08.02.08.

Bagozzi, R. P., & Yi, Y. (1988). On evaluation of structural equations models. *Journal of the Academy of Marketing Science, 16*(1), 74–94.

Baron-Cohen, S. (2004). *The essential difference: The truth about the male and female brain*. New York, NY: Basic Books.

Baron-Cohen, S., Knickmeyer, R. C., & Belmonte, M. K. (2005). Sex differences in the brain: implications for explaining autism. *Science, 310*, 819–823.

Bishop, K. M., & Wahlsten, D. (1997). Sex differences in the human corpus callosum: myth or reality? *Neuroscience and Biobehavioral Reviews, 31*(5), 581–601.

Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.

Chang, C. C. (2007). The relative effectiveness of comparative and noncomparative advertising: evidence for gender differences in information-processing strategies. *Journal of Advertising, 36*(1), 21–35.

Checking up TV-advertised products with mobile. (July 13, 2008). *Nikkei Marketing Journal* 11, (in Japanese).

Craig, C., & Douglas, S. P. (2005). *International marketing research*. Chichester, UK: John Wiley & Sons.

D2 Communications. (June 16, 2006). Mobile research: 60.9% of i-mode users have shopped online via i-mode and 82.5% plan to do so in the future. *Mail Magazine, 26*. Available from. http://www.d2c.co.jp/eng_mailmagazine026.

D2 Communications. (August 21, 2007). Mobile research: 58.4% use mobile coupons and discounts more than once per month, and users access mobile coupons via leaflets and direct mail (63.3%), free papers (55%), and the mobile Internet (47.3%). *Mail Magazine, 27*. http://www.d2c.co.jp/eng_mailmagazine027.

Dabholkar, P. A. (June 1994). Incorporating choice into an attitudinal framework: analyzing models of mental comparison processes. *Journal of Consumer Research, 21*, 100–118.

Dabholkar, P. A., & Bagozzi, R. P. (2002). An attitudinal model of technology-based service: moderating effects of consumer traits and situational factors. *Journal of the Academy of Marketing Science, 30*(3), 184–201.

Dimmick, J., Chen, Y., & Li, Z. (2004). Competition between the Internet and traditional news media: the gratification-opportunities niche dimension. *Journal of Media Economics, 17*(1), 19–33.

Dimmick, J., Kline, S., & Stafford, L. (2000). The gratification niches of personal e-mail and the telephone: competition, displacement, and complementarity. *Communication Research, 27*(2), 227–250.

Dimmick, J., & Rothenbuhler, E. W. (1984). The theory of the niche: quantifying competition among media industries. *Journal of Communication, 34*(1), 103–119.

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.

Edens, K. M., & McCormick, C. B. (2000). How do adolescents process advertisements? The influence of ad characteristics, processing objective, and gender. *Contemporary Educational Psychology, 25*, 450–463.

Fall, L. T., & Knutson, B. J. (2001). Personal values and media usefulness of mature travelers. *Journal of Hospitality & Leisure Marketing, 8*(3/4), 97–112.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research, 57*, 768–775.

Giedd, J. N., Vaituzis, A. C., Hamburger, S. D., Lange, N., Rajapakse, J. C., Kaysen, D., et al. (1996). Quantitative MRI of the temporal lobe, amygdala, and hippocampus in normal human development: ages 4–18 years. *The Journal of Comparative Neurology, 366*(2), 223–230.

Griffy-Brown, C., & Oakland, N. (2007). Women entrepreneurship, Graziadio Business Report. *Journal of Relevant Business Research and Analysis, 10*(1). Available from. http://gbr.pepperdine.edu/071/japan.html.

Habuchi, I., Dobashi, S., Tsuji, I., & Iwata, K. (2005). Ordinary usage of new media: Internet usage via mobile phone in Japan. *International Journal of Japanese Sociology, 14*, 94–108.

Hair, J. F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Hawkins, D. I., Best, R. J., & Coney, K. A. (2001). *Consumer behavior: Building marketing strategy*. New York: McGraw-Hill.

Hess, T. J., Fuller, M. A., & Mathew, J. (2006). Involvement and decision-making performance with a decision aid: the influence of social multimedia, gender, and playfulness. *Journal of Management Information Systems, 22*(3), 15–54.

Hupfer, M. E., & Detlor, B. (2006). Gender and web information seeking: a self-concept orientation model. *Journal of the American Society for Information Science and Technology, 57*(8), 1105–1115.

Japan Airlines. (2005). JAL's expands 'Touch & Go' boarding throughout Japan. Press Release. http://press.jal.co.jp/en/release/200504/000468.html. Accessed April 26.

Japan Productivity Center for Socio-Economic Development. (2007). *The white paper of the leisure: Changing leisure demand and new tourism*. Tokyo: Japan Productivity Center for Socio-Economic Development. (in Japanese).

Japan Tourism Association. (2007). *The 25th Japanese tourism trend research*. Tokyo: Japan Tourism Association. (in Japanese).

Jonas, W. B. (Ed.). (2005). *Mosby's dictionary of complementary & alternative medicine*. St. Louis, MO: Elsevier Mosby.

Keppel, G. (1991). *Design and analysis: A researcher's handbook*. Englewood Cliffs, NJ: Prentice-Hall.

Kim, D. Y., Lehto, X. Y., & Morrison, A. M. (2007). Gender differences in online travel information search: implications for marketing communications on the Internet. *Tourism Management, 28*(2), 423–433.

Kim, K. H. (2004). Effective mobile marketing strategies: cases in South Korea. In P. Rose (Ed.), *Proceedings of the 2004 conference of the American academy of advertising*, 247.

Leong, E. K. F., Huang, X., & Stanners, P. (1998). Comparing the effectiveness of the web site with traditional media. *Journal of Advertising Research, 38*(5), 44–51.

Levin, F. M. (1997). Neuroscience: the amygdala, hippocampus, and psychoanalysis. *Psychoanalytic Quarterly, 66*, 555–560.

Lin, C. A. (1999). Online-service adoption likelihood. *Journal of Advertising Research, 39*(2), 79–89.

Li, Y., & Bryan-Low, C. (August 26, 2006). Coming soon to mobile screens: more ads than ever. *The Wall Street Journal, B1*.

Longe, J.L. (Ed.), (2006). *The Gale Encyclopedia of Medicine*. 3rd ed. Farmington Hills, MI: Gale Cengage.

Luo, M., Feng, R., & Cai, L. A. (2004). Information search behavior and tourist characteristics: the Internet vis-à-vis other information. *Journal of Travel and Tourism Marketing, 17*(2/3), 15–26.

Meyers-Levy, J. (1988). Influence of sex roles on judgement. *Journal of Consumer Research, 14*(4), 522–530.

Meyers-Levy, J. (1989). Gender differences in information processing: a selective interpretation. In P. Cafferata, & A. Tybout (Eds.), *Cognitive and affective responses to advertising* (pp. 219–260). Lexington, MA: Lexington Books.

Meyers-Levy, J., & Maheswaran, D. (June 1991). Exploring differences in males' and females' processing strategies. *Journal of Consumer Research, 18*, 63–70.

Meyers-Levy, J., & Sternthal, B. (1991). Gender differences in the use of message cues and judgement. *Journal of Marketing Research, 28*(1), 84–96.

Ministry of Economy, Trade and Industry. (2003). *Survey on actual condition and market size of electronic commerce for 2002*. Tokyo: Government of Japan. (in Japanese).

Ministry of Economy, Trade and Industry. (2008). *Survey on actual condition and market size of electronic commerce for 2007*. Tokyo: Government of Japan. (in Japanese).

Ministry of Internal Affairs and Communication. (2007). *White paper: Information and communications in Japan*. nformation & Communication Statistics Database – Year 2005. Tokyo: Government of Japan (in Japanese). I.

Rakuten dropped the revenue in the first quarter by 43% due to financial business slackness in spite of booming electronic commerce. (May 18, 2007). *Nikkei Financial Daily* 4, (in Japanese).

Word of mouth on the Internet is key: 2 of 5 in 30s are satisfied. (February 21, 2008). *Nikkei Newspaper* 33, (in Japanese).

Okazaki, S. (2004). How do Japanese consumers perceive wireless ads? A multivariate analysis. *International Journal of Advertising, 23*(4), 429–454.

Okazaki, S. (2007). Exploring gender effects in a mobile advertising context: on the evaluation of trust, attitudes, and recall. *Sex Roles, 57*(11/12), 897–908.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*(4), 460–469.

Olsen, S. O. (2002). Comparative evaluation and the relationship between quality, satisfaction, and repurchase loyalty. *Journal of the Academy of Marketing Science, 30*(3), 240–249.

Pan, B., & Fesenmaier, D. R. (2006). Online information search: vacation planning process. *Annals of Tourism Research, 33*(3), 809–832.

Phillip, M. V., & Suri, R. (2004). Impact of gender differences on the evaluation of promotional emails. *Journal of Advertising Research, 44*(4), 360–368.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903.

Preston, I. L. (1982). The association model of the advertising communication process. *Journal of Advertising, 11*(2), 3–15.

Putrevu, S. (2001). Exploring the origins and information processing differences between men and women: implications for advertisers. *Academy of Marketing Science Review, 10*. Available from. http://www.amsreview.org/articles/putrevu10-2001.pdf.

Rodgers, S., & Harris, M. A. (2003). Gender and e-commerce: an exploratory study. *Journal of Advertising Research, 43*, 322–329.

Stempel, G. H., III, Hargrove, T., & Bernt, J. P. (2000). Relation of growth of use of the Internet to changes in media use from 1995 to 1999. *Journalism and Mass Communication Quarterly, 77*(1), 71–79.

Tolbert, K. (February 10, 2000). Japan's new material girls: 'parasite singles' put off marriage for good life. *The Washington Post* A01.

Tsao, J. C., & Sibley, S. D. (2004). Displacement and reinforcement effects of the Internet and other media as sources of advertising information. *Journal of Advertising Research, 44*(1), 126–142.

Video Research (2008). Keitai 2008 edition (mobile phone usage report). Tokyo: Video Research.

Vogt, C. A., & Fesenmaier, D. R. (1998). Expanding the functional information search model. *Annals of Tourism Research, 25*(3), 551–578.

Weiser, E. B. (2000). Gender differences in Internet use patterns and Internet application preferences: a two-sample comparison. *CyberPsychology & Behavior, 3*(2), 167–178.

Wolin, L. D., & Korgaonkar, P. (2003). Web advertising: gender differences in beliefs, attitudes and behavior. *Internet Research: Electronic Networking Applications and Policy, 13*, 375–385.

Wu, S. I., Wei, P. L., & Chen, J. H. (2008). Influential factors and relational structure of Internet banner advertising in the tourism industry. *Tourism Management, 29*, 221–236.

Yi, Y. (1990). A critical review of consumer satisfaction. In V. A. Zeithaml (Ed.), *Review of marketing* (pp. 68–123). Chicago, IL: American Marketing Association.