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RESEARCH ARTICLE

Assessment of Antecedents of Online Consumers' Information Search Behavior

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Abstract: Understanding consumers' online information search behavior is of major importance in e-commerce for making appropriate strategic, technological, and marketing decisions to increase customer satisfaction and to obtain competitive advantage in the era of digitalized economy. The purpose of this paper is to compare information search behavior of both online and offline consumers in order to understand the characteristics of online consumers and their information search behavior, and to explore prospects of the Internet as a medium to reach consumers. Assessment of the difference between these two consumer groups provides insights to change the paradigm of consumer behavior in terms of information search and choice making process. Findings suggest significant managerial implications for advanced marketing activities and firms' strategy in response to the emergence of online consumers who appear to have significantly different information search behavior compared to offline consumers.

Keywords: consumer behavior, market mavenism, perceived usefulness, perceived ease of use, consideration set

The Internet has brought significant changes in the way enterprises operate their businesses and the emergence of online business had a major impact on the conventional retail sector. While online shopping is still small scale in the retailing industry, online sales in the US are growing rapidly at an annual rate of 30% – 40% (Vogelstein, 2002). In the digital world, the Internet has become an important mode of communication for consumers who use it on a daily basis. There is increasing interest in understanding the effects of computer-mediated shopping environments on consumer behavior (Hoffman & Novak, 1996). Many researchers and enterprises consider the Internet as an important medium to evoke consumer's purchasing motivation, however, it is not clear how the Internet affect consumer behavior and more studies need to be done on this relationship.

Unlike traditional information sources, the Internet provides consumers with more interactive communications, which is its unique characteristic as a medium (Porter, 2001). The Internet can provide consumers the quantity and quality of individually customized information, with minimal effort and

cost, which facilitates better decision making and makes the decision-making process more efficient (Alba et al., 1997). Through the Internet, limitless amounts of product information and other reading materials can be summoned and saved, all in an instant, far beyond anything possible in the real world of brochures, manuals, and the memory and knowledgeability of salesclerks (Underhill, 1999). The growing dependency on the Internet to search information is due to the following benefits: low transaction costs, easier access to price and product information, convenient purchase of associated services, and the ability pool volume (Porter, 2001).

The extent of the effect of the Internet on consumer behavior, and the way the Internet change consumers search behavior regarding the process and information usage, is not completely understood. Information search is initial stage of consumer's purchase decision making process, thus it is imperative to have comprehensive understanding of this process to pursue successful e-commerce. The purpose of this paper is to compare information search behavior of both online and offline consumers in order to understand characteristics of online consumers and their information search behavior and to suggest guideline and paradigm for this research topic. In particular, quality and quantity of information search and the extent of effort consumers exert to obtain information on the Internet are explored in this study.

Conceptual Framework

Previous studies state that the Internet helps information integration and information processing, and reduce external and internal coordination costs, thus improve the quality and speed of information processing. Because online search costs are low, consumers have the incentive to search for more information compared to an offline search, resulting in reduced average price paid and the dispersion of prices for the purchased products (Bar-Ilan, 2000). The Internet has two distinctive characteristics as an information search vehicle—ubiquitousness and interactivity. Vast amount of information are available through the Internet and consumers can access these information through various mediums such as World Wide Web, email, chat rooms, list-servs, and the like. The Internet also has a capability of supporting and facilitating several forms of interaction, including one to one, one to many, many to one, and many to many interactions (i.e. social network). These two features enable consumers to obtain information on the Internet more proactively by exchanging information with others on the Internet. The Internet is being searched both when a consumer's objective is specific product and service information in anticipation of a purchase as well as when the objective is to obtain general information about a brand or product or service category (Shim, Eastlick, Lotz, & Warrington, 2001).

Several studies suggest that the Internet allows consumers to save time, efforts, and cost for information search, and to access limitless amount of various information. The Internet does not generate new information, but facilitates information exchange, and allows consumers to have access to enormous amount of information at their fingertips. The Internet has the potential to alter multiple dimensions of a consumer's information search process, including amount of total search, the number and types of sources consulted, and the distribution and weighting of information gathered from these sources (Bakos & Brynjolfsson, 1999). As the Internet creates a platform where people can access vast amounts of information at their fingertips, two competing view emerged about how this new phenomenon affects people's lives: (1) the Internet facilitate information search (Chen, Schwan, & Zhou, 2003); or (2) the Internet baffles search by overloading information (Nachmias & Gilad, 2002). Early evidence indicates that consumer search more information online (Ratchford, Lee, & Talukdar, 2003) and substitute online information sources for offline ones (Klein & Ford, 2003).

Shim et al. (2001) proposed an online pre-purchase intention model by empirically testing search goods. Their model hypothesized the following four constructs as major determinants for predicting internet purchase intentions: the Internet information search intention, attitude, subjective norms, and perceived behavior control. From this model they attempted to determine whether intent to search the

Internet for product information is a key element for predicting consumers' internet purchase intentions. Klein and Ford (2003) conducted an internet-based survey study with automobile shoppers to examine how consumers differ in their internet use for information search. Their findings suggest that consumers are substituting internet-based search for traditional search. Kulviwat, Guo, and Engchanil (2004) developed a conceptual framework to determine determinants of online information search. Their model included three different constructs such as perceived benefit, perceived cost, and ability to search and assess how these constructs affected consumers' motivation and online search behavior.

These studies attempted to approximate consumer information search behavior by examining specific aspects of consumer behavior or specific industry, specific product category (i.e. experience goods vs. search goods), yet they are limited to differentiate the difference between traditional consumer information search behavior versus online information search behavior. To determine how the Internet affects consumer information search behavior, empirical studies need to look in various perspectives. Particularly, there is a need for a study to assess the difference between traditional consumer information search behavior and online information search behavior.

Factors Affecting Online vs. Offline Consumer Information Search Behavior Demographic Characteristics of Online Consumers

Claxton, Fry, and Protis (1974) stated that the extent and length of information search are subject to individual difference. Consumers search for more information as their education level is higher (Schaninger & Sciglimpaglia, 1981), as their income is lower and as they are younger. Korgaonkar and Wolin (1999) showed that age, income, and education were the only demographic variables that correlated significantly with web usage. Li, Kuo, and Russell (1999) stated that the younger generation tends to spend more time on the Internet and have relatively more knowledge on the Internet. Burkey and Kuechler (2003) explored how demographic variables such as age, gender, education level, and income affect consumers' choice to purchase online products by examining statistical and demographic data. Joines, Scherer, and Scehufele (2003) also reported the effect of demographic factors on the extent and length of time consumers spend on searching online information. These studies suggest that demographic characteristics of online consumers may be different for online vs. offline consumers.

Information Search Cost

The choice of information search medium traditionally depends on the economic theory. In other words, consumers do cost-benefit analysis in determining their choice for information search medium. Srinivasan (1990) explained the characteristics of consumer information search behavior with the economic approach, which uses the cost-benefit framework to study information search. This paradigm rests on the assumption that consumers search for information until the marginal cost of obtaining a unit of information is equal to the marginal benefit of possessing a unit of information (Goldman & Johansson, 1978). Thus, information search will decrease as the costs of searching increase and will increase as the benefits of search increase. The search cost implies the amount of time required to obtain optimum information and economic cost occurred in processing the information data (Srinivasan & Ratchford, 1991). Strader and Shaw (1999) defined the search cost to include time, effort, and monetary cost required to obtain necessary information for the right price to purchase at the right price.

The Internet enables relatively lower information search cost, thus consumers gain access to a larger base of information for product and service compared to pre-Internet era. Lee (1998) explained the characteristics of online marketplace which contrast the offline marketplace with an example of Japanese car auction market. He argued that the dissemination of auction catalog on the Internet can enable car buyers to have easy access to the information and decrease asymmetry in the information available in the auction marketplace, thus reducing online information search cost. Bakos and Yannis (1997)

stated that online marketplace reduces the information search cost regarding seller's price and product information, thus buyers can easily find the product that satisfy their needs. Consumers generally prefer to reduce their mental and physical efforts to obtain their specific purpose and save the information search costs. The Internet and search engines reduce the information search costs, leading consumers to use the Internet more frequently.

Market Mavenism

It is generally accepted that word-of-mouth communication can have a substantial influence on product choice (Price & Feick, 1984). As such, marketers should have an active interest in building communication channels with interpersonal communicators such as market mavens to reach and influence a wider market (Ennew, Lockett, Holland, & Blackman, 2000; Clark, Goldsmith, & Goldsmith, 2008). In this respect, interest and attention to opinion leaders used to be substantially high. However, the attention has shifted toward market maven who has a solid overall market-related knowledge and willingness to disseminate information which is typically not product-specific. Feick and Price (1987) defined market mavens as individuals with general knowledge about products, stores, and other marketplace information. They both initiate discussions about marketplace information as well as respond to others' requests for such information. Feick and Price (1987) explained that market mavens are a type of reference person who has broader marketplace information than opinion leaders who has high level of product class-specific information. In an extension to Feick and Price's (1987) work, Walsh, Mitchell, Wiedmann, Fenzel, and Duvenhorst (2002) identified eMavens (i.e. market mavens on the Internet) and showed that eMavens differ from non-eMavens with regard to usage behavior and motives for using internet sites.

Market mavens express more information-seeking behavior than other consumers and share this information with others. This is a tendency which is often found in consumers who prefer to use the Internet. These consumers have high level of involvement both in terms of product itself and purchase of the product. Since market mavens are active information seekers, and the Internet tends to raise the quality and quantity of information without raising search costs, they have higher motivation to seek information online. Therefore, market mavenism is expected to relate more to frequent usage of online information (Bei, Chen, & Widdows, 2004). Like other consumers, mavens are members of social networks, which could increase one's sense of duty or obligation to the community (Muniz & O'Guinn, 2001). Some mavens may gain indirect benefits from sharing information with others because it helps to solidify their social position, and their sense of duty as a community component is likely to instigate their communication activities (Walsh et al., 2002).

Content of Information Search

There are many internet sites which enable comparison of numerous products effectively and efficiently. These websites lead online consumers to pay more attention to price and other physical product features than to brand. Degeratu, Rangaswamy, and Wu (2000) concluded that reliance on brand names in online information searches is conditional on the available attribute information, and rational consumers prefer to rely more on product features and less on brand information. The emergence of various search engines facilitates consumers' dependence on the Internet as a major source of information, and as consumer trusts this information source increase, their reliance on brand information decreases. The characteristics of internet information lead consumers to conduct more cognition-oriented information search, and less affect-oriented information search. Cognition-oriented information search focus on product features such as price, which are major drivers of online information search.

The Internet Variables

The Internet variables consist of two particular beliefs: "perceived usefulness" and "perceived ease of use." There are several studies reporting the effects of

these two internet variables on user's attitude (Larcker & Lessig, 1980; Saade & Bahli, 2005). Perceived usefulness is defined as prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context, while perceived ease of use refer to the degree to which the prospective user expects the target system to be free of effort (Davis, Bagozzi, & Warshaw 1989). Perceived usefulness can be viewed as the user's recognition of the effect of the information system on the performance of the organization, interpersonal relationship, and fulfillment of the objectives (Hamilton & Chervany, 1981; Porter & Donthu, 2006). Hunt and Sanders (1989) viewed the perceived usefulness as the capability of the information system, while Welsch (1986) viewed effective usage, overall satisfaction level, and user acceptability as the reference for the effectiveness of the information system.

Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance his or her job performance (Davis et al., 1989). Perceived usefulness tends to be a strong determinant for consumers' intention to use the Internet, while perceived ease of use tends to be a weaker determinant for consumer's intention to use the Internet for long term. In the context of online consumer behavior, Chen et al. (2003), found that perceived usefulness affects attitude toward online shopping. In recent studies, a distinct relationship between perceived usefulness and the purchase intention has been verified (Lederer, Maupin, Sena, & Zhuang, 2000). Previous studies suggest that perceived ease of use is a critical determinant for consumer's online search and shopping behaviors (Athiyaman, 2002).

Consideration Set

Consideration set is conceptualized as the set of alternatives that a consumer considers seriously for purchase (Hauser & Wernerfelt, 1990). The effect of consideration set on consumer behavior, which was initially defined as "evoked set" by Howard and Sheth (1969), has been continuously explored by many researchers (Mitra & Lynch, 1995). Consumers undergo step-wise process in making decision for their choice of products by forming smaller consideration set on each step (Kardes, Kalyanaram, Chandrashekaran, & Dornoff, 1993), the content of a consideration set has significant effect on the choice of a product or a brand (Hauser, 1987).

Consideration set affects how consumers manage their information in the process of their purchase decision-making. Consumers selectively sort countless information without allocating their efforts and resources efficiently despite their limitation. Thus, much information evolves and systematically stored in consumers' minds according to their specific conditions through a potentially daunting amount of information. Howard and Sheth (1969) explained this phenomenon as consumers' logical and optimizing behavior in facing a vast amount of information and numerous alternatives. Thus, consumers attempt to minimize their recognized efforts in searching for a product, thus forming a consideration set and depending more on the Internet (Alba et al., 1997), as it can function as a substitute for their memory.

Consideration sets are generally treated as those alternatives a consumer seriously consider when making a purchase decision (Roberts & Lattin, 1991). The Internet technology has significant impact on the nature and composition of a consideration set. The Internet will produce larger and more heterogeneous consideration sets for consumers involved in general information searches because of the capability of search engines and intelligent agents to efficiently and effectively capture a vast amount of potentially relevant information. The Internet will produce smaller and more homogenous consideration sets for consumers utilizing it for pre-purchase information searches because of the capability of recommendation agents to filter and personalize a vast amount of information (Peterson & Merino, 2003).

Table 1 summarizes previous studies of online consumer shopping behavior models and identified antecedents in these models. Based on this literature review, we selected six antecedents which may influence information search behavior of both online and offline consumers in different ways. Table 2 shows the selected six antecedents and hypotheses which propose the relationship between the antecedents and online vs. offline consumers.

Table 1 *Summary of Previous Studies on Online Consumer Shopping Models*

Research	Online Consumer Search Behavior Models
Shim et al. (2001)	Relationship between the Internet information search intention, attitude, subjective norms, perceived behavior control
Kulviwat et al. (2004)	The effects of perceived benefit, perceived cost, and ability to search
Korgaonkar and Wolin (1999)	The effects of demographic variables: age, income, education
Li, et al. (1999)	Age impacts the amount of time spending on the Internet, the knowledge level of the Internet.
Burkey and Kuechler (2003)	The effects of demographic variables: age, gender, education level, income
Joines et al. (2003)	The impacts of demographic variables on the amount of time spending on the Internet
Lee (1998)	The effect of characteristics of online market on consumers' information search cost
Feick and Price (1987), Walsh et al. (2002)	eMavens as a major construct for consumer online search behavior
Degeratu et al. (2000)	The impacts of the Internet information characteristics on online consumers' search behavior.
Chen et al. (2003), Athiyaman (2002), Lederer et al. (2000)	Perceived usefulness of the Internet as a determinant for online search, shopping behavior
Alba et al. (1997), Robert and Lattin (1991), Peterson and Merino (2003)	The effects of consideration set online consumers, purchase decision, and shopping behavior.

Table 2 *Hypotheses Testing of Antecedents' Impact on Online and Offline Consumers*

Hypothesis 1	Demographic characteristics of online and offline consumers are significantly different.
Hypothesis 1-1	Online information searching consumers are likely to be younger than offline consumers.
Hypothesis 1-2	Online information searching consumers are likely to earn higher income than offline consumers.
Hypothesis 1-3	Online information searching consumers are likely to have higher education level than offline consumers
Hypothesis 2	Online information searching consumers are likely to spend less search costs compared to offline consumers for information search.
Hypothesis 3	Online consumers are likely to share information with other consumers than offline consumers.
Hypothesis 4	Online consumers are likely to consider more product-related information, and less brand information compared to offline consumers.
Hypothesis 5	There may be difference between online consumer and offline consumer regarding the Internet variables

Table 2 continued...

Hypothesis 5-1	Online consumer has higher recognition for perceived usefulness of the Internet compared to offline consumer.
Hypothesis 5-2	Online consumer has higher recognition for perceived ease of use of the Internet compared to offline consumer.
Hypothesis 6	Online consumers are likely to have larger consideration set compared to offline consumers.

Methods

Sampling and Data Collection

The sample included 500 consumers and university students who own personal computer in Seoul, the capital city of Korea. This study attempted to assess consumers' choice of medium for information search, and younger group of consumers are more likely to use the Internet for information search. Therefore, university students, including undergraduate and graduate students were included in the target sample as well as other general public. Personal computer owners were selected as they have high access potential to the Internet. Data were collected via a survey study, which was distributed to 500 target respondents. Of the 500 respondents, 476 clean sample data was finally used in the data analysis. Characteristics of respondents showed a wide variety of age groups with most in the 20-24 (25.5%) and the 45-50 (22%) age groups. Subjects were highly educated and predominantly employed in white collar and professional occupations. The respondents consisted of equal gender proportion (50- to 50 % of male and female respondents).

Survey Design and Measures

To determine the difference between online and offline consumer information search behavior, we included a step in the survey which intended to segment online vs. offline consumers. The source of information which consumers are using for their shopping decisions was selected as criteria to differentiate online vs. offline consumers. In other words, respondents who use the Internet as main information sources are considered as online consumer segment. The respondents who choose other offline media (i.e. retail shop, newspaper, TV advertisement, radio, magazine, and others) as main information source are considered to be offline consumer segment. In the survey, respondents were asked to answer the source of information for making a recent purchase decision, and this information has been used to classify online vs. offline consumer segments in this study.

Survey questionnaire included six sections for eliciting information on six selected constructs (Table 3): Demographic Variables, Information Search Cost, Market Mavenism, Information Search Content, the Internet Variables, and Consideration Set. For the first construct—Demographic Variables—age, educational level, and income level are selected as items. For second construct—Information Search Cost—Putsis and Srinivasan's (1994) method was employed in this study to determine the amount of time used to search information and the number of online stores visited to make a purchase.

Table 3 *Exploratory Analysis: Reliability Test Results*

Constructs	Variable	F1	F2	F3	F4	F5	Cronbach's α
Perceived Usefulness	Efficiency	**0.818**	0.145	0.117	0.001	0.171	0.933
	Quality of Information	**0.782**	0.213	0.091	0.002	0.020	
	Facilitating Function	**0.779**	0.159	0.119	0.020	0.275	
	Search Capacity	**0.745**	0.136	0.118	0.007	0.287	
Market Mavenism	Product Information Dissemination	0.161	**0.856**	0.131	0.136	0.079	0.943
	New Product information Dissemination	0.230	**0.845**	0.141	0.141	0.110	
	Capturing information	0.248	**0.836**	0.122	0.116	0.122	
	New Product Introduction	0.182	**0.825**	0.183	0.121	0.097	
	Interest in information sharing	0.228	**0.820**	0.170	0.097	0.122	
	Appropriateness of the Internet for Information Sharing	0.267	**0.766**	0.068	0.186	0.116	
Produce Information	Intrinsic attributes	0.080	0.095	**0.838**	0.083	0.020	0.845
	After Service	0.032	0.028	**0.755**	0.072	0.004	
	Expected Functionality	0.220	0.148	**0.741**	0.198	0.209	
	Raw Material Quality	0.087	0.197	**0.738**	0.060	0.012	
	Price	0.170	0.076	**0.671**	0.188	0.011	
	Product Design	0.274	0.279	**0.570**	0.124	0.223	
Brand Information	Brand Awareness	-0.048	-0.189	-0.016	**-0.845**	-0.095	0.848
	Brand Reputation	-0.135	-0.247	-0.130	**-0.823**	-0.145	
	Extent of Advertisement	-0.179	-0.133	-0.131	**-0.796**	-0.162	
Perceived Ease of Internet Use	Ability to use the Internet	0.538	0.246	0.103	0.129	**0.669**	0.865
	Ability to find interested information	0.562	0.260	0.100	0.085	**0.665**	
	Effort to use the Internet	0.091	0.080	0.068	0.319	**0.650**	
	Internet Learning ability	0.547	0.267	0.096	0.089	**0.645**	

Regarding the third construct—Market Mavenism—Feick and Price's (1989) method was applied. Feick and Price (1989) suggested that opinion leader tends to have detailed information regarding a particular product, while market maven tends to have a vast amount of information on various products that disseminates this information to other consumers intentionally. Online consumers are likely to be market maven as they tend to obtain online information on numerous products. We included eight questions to ask respondent to specify whether they obtain information on a particular product or general products to elicit their tendency to be market maven (Table 2). The likelihood that respondent would use the Internet to search for a particular product was assessed on a 5-point semantic differential scale (1= highly unlikely; 5=highly likely).

For the fourth construct—Search Information Content—two types of information measures (Product Information and Brand Information) are included. For product information, six questions were developed, while brand information included three questions (Hutter, Hautz, Dennhardt, & Fuller, 2013). The importance of these two measures were assessed on a 5-point semantic differential scale (1=very important; 5= not important).

For the fifth construct—The Internet Variable—Davis et al. (1989) method was adopted, which

include two measures—Perceived Usefulness and Perceived Ease of Use—measuring the extent of the perceived importance of the Internet and the perceived easiness of the Internet in information search. In our study, four questions were asked to assess the perceived usefulness and four questions for the perceived ease of use (Table 2), with a 5-point semantic differential scale (1= highly unlikely; 5=highly likely). The sixth construct is Consideration Set, which is conceptualized as the set of alternatives that a consumer considers seriously for purchase. In this study, Consideration Set was measured with the number of products considered in consumers' purchase decision process.

Results

Measure Assessment

Scale reliabilities. A total seven items were estimated to assess the characteristic difference between online and offline respondent groups. Perceived usefulness construct entailed four items; Market mavenism construct included six items; Product information construct had six items; Brand information construct had three items; Perceived ease of use construct had four items. Cronbach alpha reliability of these constructs was above 0.80, indicating an adequate level for behavioral research (Table 3).

Further analysis of the items and construct structure. To gain greater insight for the nature of the selected items and their relationship to relevant constructs, a factor analysis was conducted. Table 3 shows a varimax rotated principal components factor analysis of 23 items and five constructs. A five-factor was obtained, with 23 items factoring into five distinct dimensions, suggesting the existence of online information search related dimensions. Each of the revealed dimensions had distinctly factoring items with factor load above 0.6.

Hypotheses Test

To test the hypothesized relationships, we examined the estimated coefficients and signs and their associated t-values (Table 4). Hypotheses 1.1 and 1.2 proposed a significant negative relationship between the online consumers and age and income of the consumers, respectively. This indicates the likelihood of younger consumer and consumers with lower income to search online information. Hypothesis 1.3 showed a positive relationship between the online consumers and the education level, implying the likelihood of online consumers to have higher education level. Previous studies suggest that online shoppers are relatively younger and have higher income and education (Korgaonkar & Wolin, 1999). Our study showed contrasting result, as consumers with lower income were more likely to search online information. This may suggest that consumers with lower income may search online information actively in order to find cheaper products. Thus, economic incentives and motives may be important drivers for online information search and shopping.

The amount of time spent on information search and the number of online stores visited were hypothesized to be significant indicators of the likelihood of online shopping (Hypothesis 2). This hypothesis was confirmed as indicated by the significant t-value of -8.271 ($p<0.01$). Online consumers were found to spend less time for information search and visit more online stores. Online consumers may be able to visit more online sites compared to offline consumers, and this may be due to significantly lower search costs associated with online shopping.

Regarding Market Mavenism, online consumers were found to show higher Market Mavenism with the significant t-value of 16.60, supporting Hypothesis 3. Online consumers may show more positive attitude toward information collection and dissemination to other consumers compared to offline consumers. This may imply that online consumers tend to be not only interested in obtaining information for their personal usage, but also in sharing and exchanging information with other consumers.

Table 4 *Estimation Results: Antecedent affecting The Difference Between Online vs. Offline Consumer Information Search Behavior*

Constructs	Independent variables	Target group	Std. Coef.	t-value
Demographic Variables	Age	Online consumers	1.750	-13.196***
		Offline consumers	2.202	
	Education level	Online consumers	.801	5.265***
		Offline consumers	1.409	
	Income level	Online consumers	1.882	-3.255***
		Offline consumers	1.539	
Information Search Costs	Search time amount	Online consumers	0.958	-8.271***
		Offline consumers	1.434	
	No. of Visit to Online shop.	Online consumers	1.421	1.180
		Offline consumers	1.397	
Market Mavenism	Market Mavenism	Online consumers	0.793	16.600***
		Offline consumers	0.871	
Search Information Content	Product Information	Online consumers	0.540	11.411***
		Offline consumers	0.968	
	Brand Information	Online consumers	1.074	-14.265***
		Offline consumers	0.836	
The Internet Variables	Perceived Usefulness	Online consumers	0.534	13.434***
		Offline consumers	0.942	
	Perceived Ease of Internet Use	Online consumers	0.650	13.956***
		Offline consumers	1.115	
Consideration Set	Consideration set	Online consumers	1.115	10.107***
		Offline consumers	0.981	

*** $p<0.01$ ** $p<0.05$, *$p<0.1$

The type and content of information for online and offline were hypothesized to be different and the result supported this hypothesis with significant t-values (Table 4). T-values of 11.41 and -14.27 for product features and brand information, respectively showed that online consumers may pay more attention to product features and less attention to brand information (Hypothesis 4). Perceived Usefulness and Perceived Ease of Use were found to be significant determinants for online information search and shopping (Hypothesis 5.1 and 5.2). T-values of these constructs (13.43 and 14.0, respectively) were estimated to show significant positive coefficients. Hypothesis 6 proposed a positive relationship between the size of consideration set and online information search, which was confirmed with a t-value of 10.11.

Online versus Offline Consumer Information Search Behavior

We expected a difference between online and offline consumers' information search behavior based on eight selected antecedents (Table 5). These antecedents were estimated with Wilks' Lambda difference tests of parameters across the two-groups (i.e. online and offline respondents) (Table 5). The test results showed that seven parameters were found to explain the difference between the two groups, such

as Perceived Usefulness, Market Mavenism, Brand Information, Perceived Ease of Use, Amount of Search Time, and Consideration Set. Wilk's Lambda value showed that Market Mavenism was found to be the most significant antecedent differentiating the two groups of respondents.

Understanding consumers' online information search behavior is of major importance in e-commerce for making appropriate strategic, technological, and marketing decisions to increase customer satisfaction and to obtain competitive advantage in the era of digitalized economy. Accordingly, the Internet as a tool for commercial activities has ushered in a stream of research on potential impacts of the Internet on marketing and business management. Our study aims to derive significant managerial implications for advanced marketing activities and firms' strategy in response to the emergence of online consumers who appear to have significantly different information search behavior compared to offline consumers. We compared the difference between online and offline consumers in terms of six major antecedents, affecting information search and choice behavior of these two groups of consumers. Our study particularly addresses the characteristics and the nature of online consumers' information search behavior.

First, online consumers were found to be younger, more educated, and have lower income relative to offline consumers. Online consumers were also found to be more likely to be market mavens who were interested in disseminating and exchanging information with other consumers. The results suggest that younger consumers with lower income may tend to be driven by economic motives, searching online information for price shopping. The lower information search costs associated with the Internet may provide strong incentives to these consumers to actively search online information.

Two, online consumers consider the Internet as an efficient and convenient medium for information search. The Internet has the capability of inexpensively searching, collecting, and organizing immense information and of storing this into virtual locations which provide limitless access at any time. Online consumers believe that they can make rational purchase decision by utilizing this information source, and would like to reassure themselves for their choice after the purchase. Marketers may need to ensure that their strategies entail both information dissemination and continuous online promotion in order to ensure online consumers about their choice even after their purchase decisions.

Table 5 *Wilks' Lambda Difference Test on Online vs. Offline Consumers Information Search Behavior*

Constructs	Independent Variables	Wilks' Lambda	F	df1	df2
The Internet Variables	Perceived Usefulness	.729	174.839***	1	471
	Perceived Ease of Use	.698	203.660***	1	471
Market Mavenism	Market Mavenism	**.646**	**258.546***	1	471
Information Search Content	Product Information	.788	126.532***	1	471
	Brand Information	.711	191.510***	1	471
Information Search Costs	Amount of Search time	.888	59.526***	1	471
	No. of visit to Online shop.	.995	2.577	1	471
Consideration Set	Consideration Set	.835	93.344***	1	471

*** $p<0.01$ ** $p<0.05$, * $p<0.1$

Three, online information search reduce the search costs, and involves more product related information search than brand information search. Findings reveal that emerging online consumers, who are younger, more educated and have lower income level, tend to take up substantial amounts of online information which are more cognition-oriented than affect-oriented. Fourth, six antecedents were identified to influence the difference between online versus offline consumer groups, including market mavenism, perceived ease of use, brand information, perceived usefulness, product-related information, and consideration set. Market Mavenism was found to have the highest differentiating effect on the two consumer groups' difference as online consumers were found to be more likely to be market mavens than offline consumers.

Conclusion

Assessment of the difference between these two consumer groups provides insights to the change in the paradigm of consumer behavior regarding information search and choice making process. These information help marketers to evaluate emerging online consumers with multifaceted viewpoints. Our findings suggested important marketing and managerial implications.

Online consumers are found to be primarily younger population as they are likely to be more technology-oriented and used to the Internet. However, this may change with time as the general population gradually adopts the Internet as their information search and shopping alternatives. Marketers and e-tailers may need to develop more differentiated marketing activities for specific target segments as the online consumer market expands beyond specific age groups. In particular, online consumers tend to be more price sensitive compared to offline consumers which lead them to search for vast amounts of price information on the Internet. Thus, marketers may need to design tailored price and promotion strategies which meet these needs of specific online consumer segments.

Cognition-oriented nature of online consumers implies that they do not merely seek well-known brand products, but vigorously seek product-related information. Hence, it is important to accentuate functional and physical benefits of a product. Online information search also tends to involve a larger consideration set due to cost-effectiveness and a powerful capacity for efficiently and effectively searching and disseminating information. By comparing various websites with an aid of search engine, online consumers systematically screen and reduce irrelevant information from voluminous online information sites. Thus, the Internet allows consumers to have cognition-oriented data and information management instead of affect-oriented information and data management. This leads them to search for more product related information than brand information. This provides an opportunity for late-movers in the market with low level of brand awareness to have a chance to attract consumers who pay more attention to product related information. On the other hand, marketers who need to defend their market position could provide more specific and differentiated product-related information to raise perceived value and importance of their products in the minds of consumers.

Our findings also suggest that online consumers are market mavens who fervently disseminate and share their obtained information from the Internet. This implies that online consumers may prefer to proactively disseminate and share the obtained information from the Internet with others than to passively accept available information. Market mavens undertake overall market information and publicize information that could be used as reference for purchasing decisions, and this tendency lead them to have strong word of mouth effect on the market. Marketers need to recognize the importance of management of online information as market mavens may have negative word of mouth effect if the relevant online information was not managed properly. On the other hand, creation of positive word of mouth effect through market mavens may be an effective strategy to capture online consumers. From the marketing perspective, market mavens can be an effective marketing means to communicate products

given their effective word of mouth effect to other consumers. Marketers may need to target not only the early adopters but also other general consumer groups who may be affected by market maven's word of mouth effect by strategically communicating online with market mavens.

The propositions derived in this article can have significant managerial implications, especially in matters pertaining to major determinants differentiating online consumers from offline consumers. Nonetheless, this study could be further improved by considering the following issues. First, the assessment in this study used cross-sectional data to determine the difference between online and offline consumer information search behavior. By using a longitudinal data, temporal effect of the difference between these two consumer groups and the evolution of fast-changing nature of online consumers' characteristics may be more acutely evaluated.

Second, six antecedents were chosen to examine the difference between online versus offline consumer groups, including market mavenism, perceived ease of use, brand information, perceived usefulness, product-related information, and consideration set based on the previous studies. However, these selected variables may need to be further expanded to estimate more comprehensive temperaments of online consumers. Recently, social network service (SNS) emerged as a significant construct affecting consumers' online shopping behaviors. The study may include this increasingly important construct in the current study to address rapidly changing Internet marketplace. Lastly, the sample data in the study included specific groups of consumers in order to include consumers who were likely to own personal computer and to use the Internet for information search. Wide-ranging sample data may improve the generality of future study.

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