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# WOM or eWOM or Something Else: How Does the Web Affect Our Dependence on Shopping Information Sources?

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## ABSTRACT

How does the Web affect our dependence on different shopping information sources? We compared the perceived importance of four decision sources (self-evaluation, traditional word-of-mouth or WOM, electronic WOM or eWOM, and expert opinion) under three circumstances (one cannot use the Web, one can only use the Web, one can use both) for 6 different types of products (2 search, 2 experience, and 2 credence goods). The data collected from 549 consumers show that the importance of eWOM to consumer purchase decision-making is rather limited to credence goods despite the popularity of eWOM. In addition, Web access increases consumers' confidence in self-evaluation over WOM for search goods. In contrast, the exclusive reliance on the Web does not increase the confidence in self-evaluation for experience and credence goods. Implications and future research agendas are discussed.

## Keywords

Consumer purchase decision making, information seeking behavior, electronic word of mouth (eWOM), covariation principle

## INTRODUCTION

When facing a purchase decision, in addition to their own evaluation, consumers often depend on the experiences of and recommendations from others. Before the emergence of the Web, consumers obtained such information from friends and acquaintances via word-of-mouth (WOM).

The Web provides a new channel for consumers to get input from others on products of interest. This electronic word-of-mouth (eWOM) is becoming popular for many purchase decisions. According to a recent survey by Deloitte's Consumer Products group, "almost two-thirds (62 percent) of consumers read consumer-written product reviews on the Internet. Of these, more than eight in 10 (82 percent) say their purchase decisions have been directly influenced by the reviews" (Anonymous, 2007).

While WOM is the oldest method of diffusing information, the influence of its online version is catching up (Plummer, 2007). A recent study from Keller Fay Group and OMD (KellerFay, 2008) reports that we have 3.5 billion online and offline WOM conversations daily in the U.S. The traditional WOM accounts for 92%. However, the use of eWOM is more popular among younger consumers than their older counterparts.

Yet, eWOM has limitations. The reliability of these eWOM posts from other consumers cannot easily be ascertained, because most of the time we do not know who wrote those posts. Also, posts are made on a voluntary basis. This self-selected filtering mechanism favors those with strong opinions, which are either for or against the product. In addition, the quality of analysis and writing on products vary considerably from post to post. Consumers thus have greater difficulty in evaluating eWOM posts than WOM.

While consumers can use a variety of information sources, there are considerable variations in the quality of the shopping information. So, how do consumers use these different information sources when making purchase decisions? Are these sources equally important? Or, does their importance vary across product categories? By exploring these questions, we will be in a better position to understand the momentum of change the Web is bringing to consumer behavior and its impact on future product advertising.

In this paper, we use the SEC framework (Darby & Karni, 1973; Nelson, 1970), which provides a classification schema for all products into search, experience, and credence categories. By applying the covariation principle (Kelley, 1967, 1973), we explore the variances in the importance of four decision sources – self-evaluation, WOM, eWOM, and expert opinion. We examine the Web impact on consensus, distinctiveness and consistency of information quality of those information sources for the three product categories. We also explore how the Web changes them across different categories.

The remainder of the paper is as follows. We review previous studies, followed by hypotheses. The research methods are described. Then results and implications are discussed. Finally, we address limitations, future research and conclusions.

## PREVIOUS STUDIES

In this section, we first introduce the SEC framework. Then, we review studies on consumer shopping that analyze the patterns of dependence on various information sources used to make purchase decisions.

*Definition and characteristics of SEC goods* The SEC framework has been widely adopted in the advertising industry and used in consumer behavior research (Ekelund, Mixon, & Ressler, 1995). The classification of product categories in the SEC framework hinges on whether a consumer can evaluate the quality of a product before and after the purchase. Certain types of goods such as hardware and sporting goods are easily inspected and assessed on their price and quality before purchase. Thus those goods are “search goods” (Nelson, 1970). In contrast, the quality of cars and other more complex products cannot be readily determined prior to purchase. Consumers learn how reliable the car actually is only after using it for a while. These kinds of goods are “experience goods” (Nelson, 1970). In addition to search and experience goods, there exists a third type whose quality is hard to determine even after the purchase and long-term use (Darby & Karni, 1973). For example, it is difficult to see the effectiveness of vitamins to our health even after a long term use. Also, we cannot evaluate the quality of an insurance policy until we need to use it. Darby and Karni (1973) called such goods “credence goods.” Thus, we can classify all goods and services in our daily life into one of these three categories. The SEC framework has significant implications for marketing, since goods in different SEC categories require different marketing strategies.

*Consumer decision-making process* The normative approach to analyzing consumer decision making posits that this process is rational. A typical decision-making process involves four steps: the search for choices, the narrowing of choices, the evaluation of remaining choices, and the identification of the final choice (Bettman, Luce, & Payne, 1998). Meanwhile, it was also found that consumers adapt and change their decision-making strategies depending on different contexts and the availability of decision information (Bettman, Johnson, & Payne, 1991). Therefore, both the decision strategy and decision outcome are influenced by the information sources of the choices considered. These choice sources include those that the consumer found and analyzed, those that the consumer obtained via WOM or eWOM, and those offered by experts.

*Self-evaluation* In many circumstances, consumers make shopping decisions by depending solely on their own investigations and analyses, which include collecting and synthesizing product features and functions information; drawing from past experiences; or comparing similar products. In this research, we regard such actions as “self-evaluation.” That is, consumers depend on their own evaluation with or without other sources to make a purchase decision rather than depending solely on the opinion from other sources.

*WOM and eWOM* Consumers often make purchase decisions solely on the advice given via WOM or eWOM. WOM is defined as “face-to-face (or person-to-person) verbal communication (e.g., exchanges of comments, thoughts, or ideas) between two or more consumers” in non-commercial contexts (Kiecker & Cowles, 2001). Product reviews and testimonies from family members, relatives, and friends are all considered WOM. Consumers know and trust the source of the WOM. In contrast, eWOM are product reviews and testimonies from the Web, most probably online forms and user communities. For example, eWOM for movie products are obtained from “online reviews, discussion boards, chat rooms, blogs, wikis, and others” (Duan, Gu, & Whinston, 2008). Compared with WOM, eWOM “takes place in an anonymous asynchronous online environment” (Davis & Khazanchi, 2008) and “typically from unknown individuals and in a text-based format” (Park & Lee, 2009). Thus, it usually does not carry the same level of promptness and trustworthiness as WOM. However, eWOM provides wider product coverage and more diversified opinions when compared with WOM.

*Impact of WOM and eWOM on purchase decisions* Many studies note the strong influence of WOM on consumer purchasing, and some regard WOM as “among the most important” sources for consumer purchase decisions (Brown, Barry,

Dacin, & Gunst, 2005). Since a WOM communication vanishes as soon as it is uttered (Stern, 1994) whereas eWOM remains available on the Web, we wonder if eWOM is more influential than WOM. A recent review article summarized 24 studies on the impact of WOM and eWOM on purchase decision making from 1983 to 2000 (Davis & Khazanchi, 2008). They conclude that the increase in volume and number of eWOM postings alone has no significant effect on sales volume. Rather, what contributes to increased sales volume comes from the interaction of product category, volume and visual cues of postings. So consumers do not just look for eWOM on a single product, they triangulate the consistency, distinctiveness, and consensus of eWOM on the product as well as purchase trends, which is reflected in the volume of sales. This kind of “aggregate” evaluation resembles the relation between WOM and social learning (Ellison & Fudenberg, 1995).

*The influence of expert opinion* In addition to WOM and eWOM, consumers often depend on opinions of known experts or recommendations from well-known public figures when purchasing complex, durable, expensive, and/or critical goods such as financial products, house, car, and healthcare services. Nevertheless, there are few studies that assessed the relative impact of expert opinion with WOM or eWOM. A telephone survey on bank selections shows that younger, innovative men sought more expert opinion (File & Prince, 1992). This same survey also indicates both WOM and expert opinion are important. Another study looks at PC and software purchases (Shoham & Ruvio, 2008). It finds that the “opinion leader” consumer type seeks information from a variety of sources including magazines that publish expert opinion on products. In contrast, the “information seeker” consumer type seeks more information from a variety of sources, but relies more on inputs from those “opinion leaders.” This suggests “opinion leaders” play the role of product experts who influence consumer purchase decisions in both traditional and Web environments.

In sum, our understanding of the dependence on the source of purchase information is still limited. The emergence of eWOM adds both challenges and opportunities for this stream of research. How does the Web change these dependence patterns, especially the perception of the importance among self-evaluation, WOM, eWOM, and expert opinion?

## HYPOTHESES

While previous studies indicate the strong impact of WOM and eWOM, few explore their relative importance in consumers’ purchase decisions when combined with self-evaluation and expert opinions. Specifically, what is the relative importance of self-evaluation, WOM, eWOM, and expert opinion for purchase decisions on search, experience, and credence goods? We formulate four hypotheses to address this question.

### Covariation Principle

Rumor and eWOM share several characteristics in consumer decision making. Both come from unconfirmed sources and contain information that is difficult to validate. The shared attributes of eWOM and rumor concerned marketers and sellers. Rumor is defined as “an unverified proposition for belief that bears topical relevance for persons actively involved in its dissemination” (Rosnow & Kimmel, 2000). In the traditional market, marketers are often concerned about whether their efforts are successful in neutralizing the negative influence from rumors on products via WOM (Pendleton, 1998; Tybout, Calder, & Sternthal, 1981).

One insight that guides marketers’ actions is *attribution theory*, which states, “people have a tendency to utilize available information [that is] likely to prove useful in making a judgment about the cause of a behavior or an event and to ignore information that does not appear useful in ascertaining the causality” (Kimmel, 2003).

Attribution theory’s covariation principle (Kelley, 1967, 1973) posits that the validity of a statement is established through an interaction of the *consensus*, *distinctiveness*, and *consistency* of the information from its source. The consistency validity demands the recommendations from the same information source should be the same all the time. The distinctiveness validity checks if the recommendations are different from others in the same context. The consensus validity examines if there is an agreement for recommendations from different sources.

Consumers are intuitively using the covariation principle when they try to reconcile conflicting product information and then make a purchase decision regardless of the decision source.

For self evaluation, consumers are following their own search tempo on product information. Any lack of consensus and consistency is resolved by the consumer. They do not need to reconcile opposing recommendations as those from WOM, eWOM, or expert opinions. The access to the Web increases the convenience of obtaining simple product information, especially for search goods.

<i>Covariation Aspects</i>	<i>self evaluation</i>	<i>WOM</i>	<i>eWOM</i>	<i>expert opinion</i>
Consensus	Easy	Difficult	Difficult	Difficult
Distinctiveness	Easy	Easy	Difficult	Moderate
Consistency	Easy	Easy	Difficult	Moderate
<i>Web Impacts</i>	Web allows wider inclusion of decision information sources.	Web allows access to WOM via email or other personal communication tools	Web enables access to eWOM and allows triangulation of different eWOM information.	Web allows more access to expert opinion.

**Table 1. Web Impact on Four Purchase Decision Sources with the Covariation Principle**

For WOM, a consumer's relatives and friends can have different perspectives on a product. If so, a consumer has a challenge in reaching consensus for all inputs. Distinctiveness is easily verified because of the connection between the consumer and WOM source. Consistency is also easily clarified and verified.

For eWOM, the challenge of all three aspects is often very difficult because the consumer faces different and, sometimes, opposing recommendations (Davis et al. 2008). In addition, a consumer has difficulty in obtaining the context and motivation of eWOM contributors, which is a challenge for verifying distinctiveness. Since eWOM contributors are anonymous, consumers have difficulty in tracking consistency.

For expert opinion, consumers have the same challenge to reconcile opposing recommendations and reach consensus. However, compared with eWOM, since experts are not anonymous, the consistency and distinctiveness of their recommendations can be tracked and verified.

The access to the Web has an impact on these four information dependence sources as Table 1 shows. As the analysis above indicates, self-evaluation is the most inclusive.

Next, we analyze the impact of these information sources on each SEC product category.

#### **Information dependence patterns for SEC goods**

Depending on the SEC category, consumers choose different information dependence patterns to make purchase decisions for a product (Table 2).

<i>SEC Categories</i>	<i>self evaluation</i>	<i>WOM</i>	<i>eWOM</i>	<i>expert opinion</i>
search goods	Easy with more powerful search tools	Easy but may need verification	Moderate for verification only and Difficult if triangulation is needed	Easy but may need verification
experience goods	Difficult by independent evaluation without prior experience	Easy with trust and sharing of experience	Moderate to Difficult if triangulation is needed	Moderate to difficult depending on level of trust
credence goods	Difficult by independent evaluation without prior experience	Easy with trust and sharing of experience	Moderate to Difficult if triangulation is needed	Moderate to Difficult depending on level of trust

**Table 2: Purchase Decision Patterns and their interaction with SEC Goods**

As we can see from Table 2, for search goods, the Web provides consumers a new resource to obtain all type of product related information. Such information includes not only eWOM about the product but also the functions and features of this product. Thus, consumers are in a more advantageous position to collect product information and make self-evaluation if they have access to the Web. If they rely on WOM instead, they still can go through the verification process, which requires more effort when compared with self-evaluation. Thus, we have the following hypothesis:

**H1:** Between self-evaluation and WOM, having Web access favors self-evaluation over WOM for search goods.

For experience and credence goods, using the Web to obtain information on other consumers' experience on products is very convenient. Yet, consumers cannot always be certain in assessing the value of Web information contributions; then, consumers must depend on WOM or expert opinions where consumers know the quality of the information given. As we see

above, the traditional impact of WOM is strong. Between self evaluation and WOM, when consumers exclusively rely on the Web in obtaining information for self-evaluation, consumers have difficulty in obtaining relevant information for experience and credence goods even though there are vast amounts of information on the Web. So the advantages of Web access do not give enough support for self-evaluation domination over WOM. Thus we have the following hypothesis:

**H2:** Between self-evaluation and WOM, exclusive reliance on the Web does not favor self-evaluation over WOM for experience and search goods.

As we can see from Table 1, a big challenge for eWOM is that, unlike WOM, the credibility of its information source is hard to determine (Cho & Huh, 2008). Some eWOM are very misleading. For example, CNN reports that more than half of the retail websites selling healthcare products like herbs are making “false claims” (CNN, 2003). A recent media survey done by Keller Fay Group and OMG (KellerFay, 2008) indicates that traditional WOM is more credible than eWOM. The survey also reports that more negative or mixed comments are found in eWOM than WOM. The low credibility can then lead to less confidence in utilization. The study from Keller Fay Group and OMG found that, for making purchasing decisions, eWOM is used only 7 % of the time whereas WOM is 92 %.

Those consumers who depend on eWOM when making their purchase decision still have to take into consideration several factors ranging from valence or orientation (positive vs. negative), website reputation (established vs. newly established), to product types (search vs. experience goods) to decide which eWOM is useful (Park & Lee, 2009).

Research found that negative eWOM has more influence on purchase decision making than positive eWOM (Huang & Chen, 2006). We expect such influence is stronger on experience goods than on search goods because the latter can be inspected prior to purchase. We also expect credence goods share the same influence as experience goods.

In addition to eWOM, consumers also rely on expert opinion in making purchase decisions. According to Reinstein and Snyder (2005), it is common “to see books, concerts, movies, plays, restaurants, television shows, and other products of the entertainment industry reviewed by professional critics. Many other experience goods are also critically reviewed, whether in publications devoted to the whole range of consumer products (such as *Consumer Reports*) or to more narrow product classes (such as *PC Magazine*)”.

According to Table 2, consumers may have difficulty to reach triangulation with eWOM for a search product though it is relatively easier for expert opinion because the latter is not as diversified as eWOM. Thus, we have following hypothesis:

**H3:** Between eWOM and expert opinion, consumers favor expert opinion over eWOM for search goods.

As in eWOM, the impact of expert reviews was empirically found for experience goods, such as movies (Eliashberg & Shugan, 1997; Reinstein & Snyder, 2005) and automobiles (Hollenbacher & Yerger, 2001; Yerger, 1996). Since expert opinion also plays an important role when consumers have difficulty in making self-evaluation, we expect both eWOM and expert opinion will be preferred for deciding to purchase experience and credence goods. So we have hypothesis 4:

**H4:** Between eWOM and expert opinion, the importance of expert opinion and eWOM is not significantly different for experience and credence goods.

## METHOD

We used online survey questionnaires to collect data. This study had 549 consumers participate. We used t-tests and regressions to assess the hypotheses.

*Participants* Survey volunteers were sought through several popular online forums and classified ads sites such as craigslist and dealsea.com. We used an Amazon.com gift card to offer a modest incentive. For craigslist, since it is region-based, we posted the same ad in the six most populous US cities and under three categories in each city: book, electronics, and auto. For general online shopping forums like dealsea.com, we posted in the “hot deal” section of the forum. Altogether, we had 549 participants with a valid entry (e.g., no double entries, incomplete data entries) for the study. The gender breakdown is: male (52.5%), and female (47.5%).

*Products* We selected 2 products from each of the SEC categories.

- search goods: PCs (Girard, Korgaonkar, & Silverblatt, 2003; Girard, Silverblatt, & Korgaonkar, 2002; Hoskins, McFadyen, & Finn, 2004), and bestselling books (Chiu, Hsieh, & Kao, 2005; Ekelund, et al., 1995; Girard, et al., 2002)
- experience goods: cell phones (Girard, et al., 2002) and cars (Iacobucci, 1992; Nelson, 1970)

- credence goods: vitamins (Girard, et al., 2002) and auto insurance (Chiu, et al., 2005; von Ungern-Sternberg, 2004)

These products are also among the most common products that most consumers purchase regardless of the age, gender, ethnicity, and even income level of the consumer. The SEC framework is useful because it is based on when a consumer can evaluate a product’s quality in relation to its purchase (Darby & Karni, 1973; Nelson, 1970).

**Web Impacts** Short-term Web impact is assessed by using the three treatments or versions of survey questionnaires. The first one asks consumers to purchase goods without the use of any Web (“No Web,” with 196 participants). The second one asks them to purchase goods only by using information from the Web, but not from any other sources (“Web Only,” with 163 participants). The last one asks consumers to make purchases using information from any source they want to use (“No Restriction,” with 190 participants). Long-term Web impact is assessed by the extent of cumulative web shopping experience in general using 7-point Likert scale (“no experience at all” to “expert web shopper”). We also measure the extent to which consumers regard themselves as a web search expert using a 7-point Likert scale (“expert” to “novice”).

**Purchase Decision Sources** Self-evaluation is “making own decision using only information available from” available sources. WOM is a recommendation from someone you know personally. In contrast, eWOM is a recommendation from someone that you do not know personally via the Web. Expert opinion is a purchase decision source when consumers buy a product based on a recommendation from well-known experts.

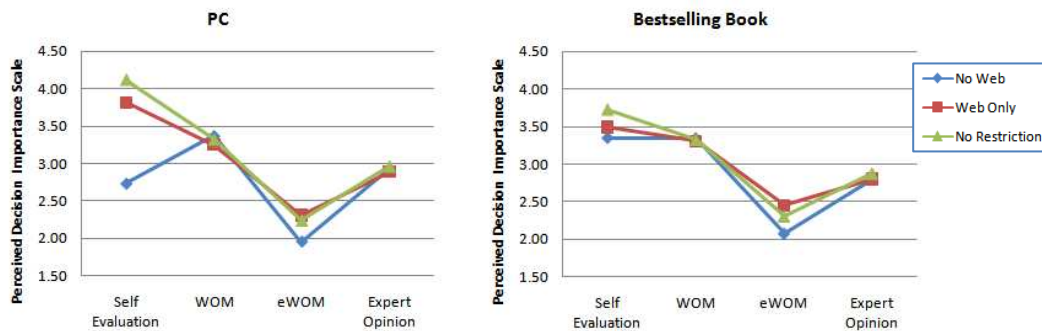
**Purchase Decision Source Confidence** This is the dependent variable for the study. These dependent variables for the 6 products selected are evaluated using a 7-point Likert scale (“least important” to “most important”) on the degree of confidence that consumers have for the above 4 decision sources.

**Assessment of Hypotheses** H1 through H4 are assessed using regressions. The dependent variables are (1) the difference of relative perceived importance between self-evaluation and WOM for H1 and H2, and (2) the difference of relative perceived importance between eWOM and expert opinion for H3 and H4. We use age, gender, and Web shopping experience as control variables for the regressions. The three treatments to assess short-term web impact are coded into two dummy variables: The variable “No Web” contrasts between “No Web” and “No Restriction” treatments whereas the variable “Web Only” is the relation between “Web Only” and “No Restriction” treatments.

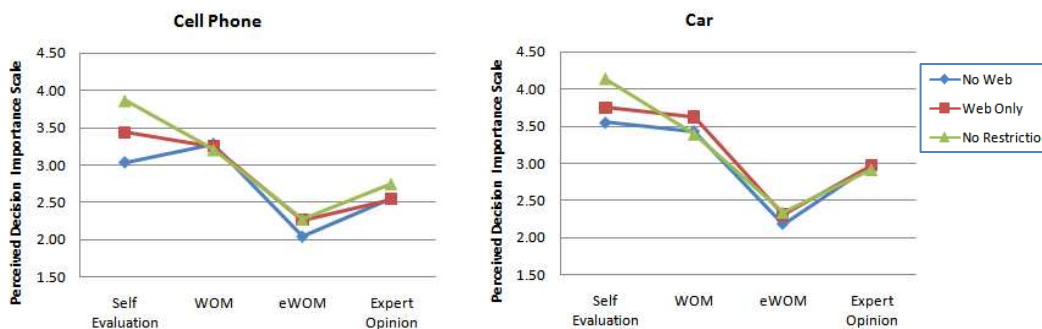
**RESULTS**

The visual representation of the results is shown in Figure 1.

*Search Goods*



*Experience Goods*



Credence Goods

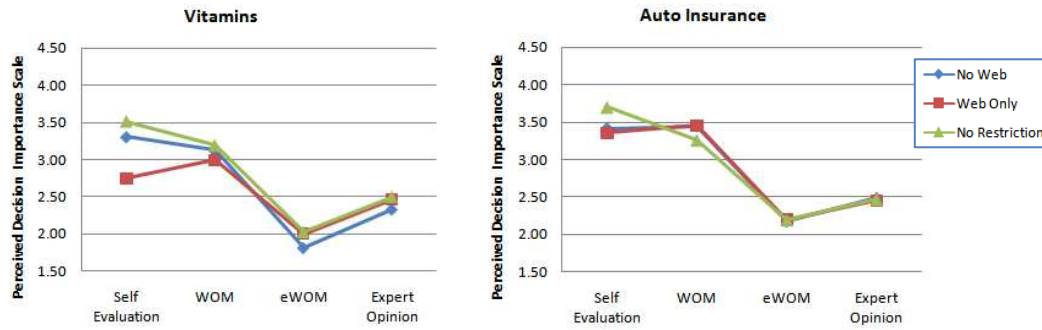


Figure 1. Comparison of Perceived Importance Scales Across Decision Sources and SEC Goods

The summary of the regressions for H1 and H2 is shown in Table 3. The impact of “No Web” (a dummy variable for the treatment “No Web with “No Restriction” as the reference) was negative on PC ( $\beta = -.365$ ) and bestselling book ( $\beta = -.154$ ) whereas “Web Only” (a dummy variable for the treatment “Web Only” with “No Restriction” as the reference) did not affect the difference between own decision and WOM. In other words, the relative importance between self-evaluation and WOM is wider without the Web than with the Web. This supports H1. The exclusive reliance of the Web gave negative influence on self-evaluation over WOM for both experience and credence goods. The  $\beta$  values of “Web Only” for cell phone, car vitamins and auto insurance were  $-.142, -.168, -.133$  and  $-.133$ . They support H2.

Independent Variable	Age	Gender*	Web Shopping Experience	No Web	Web Only
PC	+	-	+++	---	
Bestselling book	+++	++	+	---	
Cell phone		--		---	---
Car	+++	-		---	---
Vitamins	+++				--
Auto insurance	+++			--	--

Dependent variable: the difference between self-evaluation and WOM importance on each good  
 +: positive significant  $\beta$  (self-evaluation > WOM)      -: negative significant  $\beta$  (self-evaluation < WOM)  
 +/-:  $p < .05$ , ++/- -:  $p < .01$ , +++/- - -:  $p < .005$   
 \*: + for gender means significantly towards female. - for gender means significantly towards male.

Table 3. Summary of Regressions on Comparison Between Self-evaluation Making and WOM

Table 4 shows the regression results for H3 and H4. For this set of data, many independent variables were not significant. Thus, we used stepwise regressions to minimize the number of non-significant regressions.

Independent Variable	Age	Gender*	Web Shopping Experience	No Web	Web Only
PC	---			N/A	
Bestselling book	--			N/A	-
Cell phone	---	-		N/A	
Car	---	-		N/A	
Vitamins	regression not significant				
Auto insurance	regression not significant				

Dependent variable: the difference between eWOM and expert opinion on each good  
 +: positive significant  $\beta$  (eWOM > expert opinion)      -: negative significant  $\beta$  (eWOM < expert opinion)  
 +/-:  $p < .05$ , ++/- -:  $p < .01$ , +++/- - -:  $p < .005$   
 \*: + for gender means significantly towards female. - for gender means significantly towards male.

Table 4. Summary of Regressions on Comparison Between eWOM and expert opinion

The perceived importance of expert opinion exceeded that of eWOM except for vitamins and auto insurance (credence goods). This supports H3. Since the regressions for vitamins and auto insurance were not significant, we used t-test to compare the difference between eWOM and expert opinion for these two goods. The results were not significant. Therefore, H4 was valid only for credence goods. Both cell phone and car had expert opinion higher than eWOM. In addition, we see a



few interesting findings. First, exclusive reliance on the Web lowered the importance of expert opinion and heightened that of eWOM for bestselling book. Second, the importance of expert opinion over eWOM increased by the age of consumer for search and credence goods. Third, the importance of expert opinion over eWOM was more significant for men than women when it comes to experience goods.

**IMPLICATIONS**

This study is one of the first studies to compare perceived importance of four commonly used decision sources for purchasing goods. Table 6 summarizes the overall results and implications. There are several important findings. For search goods, the Web makes self-evaluation surpass WOM. For experience and credence goods, WOM remains a powerful decision source. Self-evaluation and WOM are equally important. For search goods, the importance of eWOM is lower than that of expert opinion. When it comes to eWOM and expert opinion, eWOM is equally important for credence goods but not so for experience goods.

	self-evaluation	WOM	eWOM	expert opinion
search goods	self-evaluation > WOM via Web access (H1)			expert opinion > eWOM via Web access (H3)
experience goods		self-evaluation ~ WOM using only Web (H2)		expert opinion > eWOM via Web access
credence goods		self-evaluation ~ WOM using only Web (H2)	eWOM ~ expert opinion using only Web (H4)	
overall implication	becomes powerful by incorporating all available decision sources for search goods	remain powerful for experience and credence goods	can be influential for credence goods, but not so much for search and experience goods	eWOM less important for search and experience goods

**Table 6. Overall Summary of Results and Implications**

We read a few interesting implications from Table 3 that summarizes the Web impact on the perceived importance of self decision making. The more web shopping experience consumers have, the more confidence they place on their own decision making. This applies regardless of search, experience, and credence goods types. When deciding on purchasing credence and experience goods, older consumers rely more on self decision than WOM. The only exception is the cell phone. This may be due to the fact that cell phone models change annually and involve a service contract that changes accordingly. Gender is a factor for some goods. Males appear to gain more from the Web for PC, cell phone, and car purchase than females do. On the other hand, females enjoy more Web benefits for bestselling book when it comes to self decision over WOM. Web shopping experience is important only for search goods, but not for experience and credence goods. This implies how important WOM is for experience and credence goods. Finally, for experience and some credence goods, consumers need both traditional and Web information sources to depend on self decision over WOM.

Between eWOM and expert opinion, Table 4 indicates that the age of consumers impacts the balance of their influence. The older the consumer, the more expert opinion counts over eWOM. The younger the consumer, the relative importance of eWOM increases over expert opinion. This implies that older consumers tend to use eWOM less whereas younger ones are more open to eWOM at least for search and experience goods. Finally, there was some gender difference on eWOM and expert opinion for experience goods. Women are more receptive of eWOM than men for cell phone and car purchase. Men, on the other hand, rely more on expert opinion than eWOM for these experience goods.

Overall implications of this research are twofold. First, the Web enables the triangulation of information. The importance of eWOM, in this regard, is still relatively low for search and experience goods but not for credence goods. Second, exclusive reliance on either online and offline media seems to diminish the importance of self decision for experience and some credence goods. However, exclusive reliance on the Web does not seem to reduce the importance of self decision for search goods.

**FUTURE STUDIES AND LIMITATIONS**

The results of this study are based on survey questionnaires that asked respondents their preferences on hypothetical purchase situations rather than actual purchases. A lengthy survey questionnaire tends to lower the response rate. For this reason, this study examines a limited number of products.

We see several directions for follow-up studies. We need to look into the relations between product attributes and the priorities of purchase decision sources. How do the price level and the complexity of product attributes affect consumer

preferences for decision sources? Future research should also examine the levels of consistency, distinctiveness, and consensus of eWOM with respect to (1) SEC good types and (2) consumer purchase decisions.

## CONCLUSION

We depend on various information inputs before making a shopping decision. In the traditional environment, WOM and expert reviews are critical in most product categories, especially experience and credence goods. The emergence of the Web introduces a new information input channel, eWOM. It is popular among Web users and is considered an important information source for both online and offline purchase decisions.

Yet, a controlled survey experiment with 549 consumers found that eWOM plays the least influential role among the four major shopping decision sources for search and experience goods. Their purchase relies on more objective information than a consumer's purchase of credence goods. In addition, consumers are confident about their own evaluation over WOM for search goods when they also access to the Web. Nevertheless, WOM remains very influential for experience and credence goods. In purchasing credence goods, eWOM is as important as expert opinion. Still, expert opinion wins over eWOM for search and experience goods.

We use attribution theory and triangulation imperative to explain this phenomenon. This research provides important indications for the general field of web science research, especially Internet marketing and web-based decision-making.

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