INTRODUCTION
In the fields of social psychology and consumer behavior, marketing researchers have produced a considerable amount of theoretical work on the effect of interpersonal communication. Such interpersonal communication has become known as a process of word of mouth (WOM) communication, which now is regarded as one of the most important and effective communications channels (Keller, 2007). Firms such as Nestlé, Procter & Gamble, L’Oréal, Bosch, Microsoft, GlaxoSmithKline, and Johnson & Johnson, to name just a few, increasingly recognize that WOM is an extremely credible, persuasive, and highly effective tool of informal means of creating consumer engagement (Nielsen, 2009). Another example of the popularity of WOM is the appearance of consultancies specializing in this area (e.g., gaspedal.com and trmd [http://company.trnd.com/en]). Such companies build WOM campaigns as part of integrated marketing communication. Likewise, the official trade association for the WOM marketing industry (Word of Mouth Marketing Association, or WOMMA), founded in 2005, promotes and advances WOM by offering educational programs, ethical guidelines, a standardized language, as well as pursuing a research agenda and developing WOM metrics.

During the past decade, advances in electronic communications technology have led to considerable expansion in the number and types of informal communications channels. Electronic newsgroups, blogs, virtual communities, instant messaging, cell phones, and Personal Digital Assistants (PDAs), among other options, offer consumers instantaneous interactions with advertisers, fellow consumers, and other market players (Allsop, Bassett, and Hoskins, 2007; Hung and Li, 2007; Smith, Coyle, Lightfoot, and Scott, 2007).

This uptick in activity has helped make WOM a powerful communications channel that has an important influence in the formation of consumer opinions and in their purchase decisions. Moreover, this type of communication among consumers is particularly interesting for advertising practitioners, for two reasons:

• Research suggests that WOM can complement and extend the effects of advertising (Bayus, 1985; Hogan, Lemon, and Libal, 2004), and
• Research shows that companies can stimulate WOM through advertising (Graham and Havlena, 2007).

Although previously many advertisers traditionally have considered WOM as an alternative to...
advertising, WOM and advertising now are regarded as two important communications channels that interrelate and complement each other.

The main objective of the current article is to analyze how WOM communication increases (or decreases) the receiver’s brand-purchase probability.

WOM communication can be said to have two dimensions (Harrison-Walker, 2001):

• “WOM activity” includes such aspects as
  – how often WOM takes place,
  – the number of people with whom the WOM sender communicates, and
  – the quantity of information provided.
• “WOM valence” can be positive, negative, or neutral.

Although the content and strength of both dimensions of the WOM condition affect the probability of a consumer’s choosing a particular brand, few studies have analyzed the impact of both dimensions.

The majority of studies in the WOM literature have focused on the WOM activity dimension. And, in fact, there is little empirical evidence that helps explain how positive and negative WOM contributes to the shift in the probability of choosing a brand (Assael, 2004; East, Hammond, and Lomax, 2008).

Moreover, these studies primarily have focused on positive WOM and its influence on which product is purchased. It also is necessary to examine negative WOM, which discourages purchase (Bruyn and Lilien, 2008). To that end, this research analyzes the WOM valence dimension and the impact of positive and negative WOM on the shift in the receiver’s purchase probability.

Finally, this study also examines the variables that explain—directly or indirectly—the shift in the WOM receivers’ purchase probability. For this purpose, the authors have grouped the variables into

• interpersonal factors (how actively WOM is sought, strength of tie between sender and receiver, and sender’s experience and strength of expression), and
• non-interpersonal factors (receiver’s loyalty, experience, and perceived risk).

In the current study, the authors’ research has

• embraced the perspective of the WOM receiver,
• compared the impacts of positive and negative WOM, and
• determined the direct and indirect effects of the different interpersonal and non-interpersonal factors on the shift in the purchase probability of the receiver of positive (or negative) WOM.

The balance of this research

• presents the authors’ conceptual definition of WOM and the lines of research examining how WOM works,
• describes a conceptual model, and
• presents the authors’ proposed hypotheses.

Explanations of research design, methodology, and results follow. The work concludes with a discussion of the main findings of the analysis and then offers managerial implications.

LITERATURE REVIEW

The literature defines WOM as “all informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers” (Westbrook, 1987, p. 261). Additionally, WOM can be any oral and personal communication, positive or negative, about a brand, product, service, or organization, in which the receiver of the message perceives the sender to have a non-commercial intention (Arndt, 1967).

These definitions are consistent with other WOM studies (Gruen, Osmonbekov, Czaple, 2006; Harrison-Walker, 2001; Wagenheim, 2005; Wagenheim and Bayon, 2007), and share two characteristics:

• The receiver of the message must perceive the sender to be unconnected with any commercial organization. In other words, for it to be credible, a WOM recommendation must spring from a natural dialogue between the two people, and it should be the product of the sender’s knowledge and the receiver’s need to know.
• WOM can be either positive or negative. Positive WOM encourages purchase, whereas negative WOM discourages purchase.

The WOM literature has three lines of research.

• The first focuses on the perspective of the WOM sender and analyzes the reasons why people make positive (or negative) recommendations on the basis of their experiences with a product. These studies conclude that a number of forces (non-interpersonal factors) exist and give rise to recommendations. These forces include
  – satisfaction or dissatisfaction (Anderson, 1998; Bowman and Narayandas, 2001; Brown, Barry, Dacin, and Gunst, 2005; Heitmann, Lehmann, and Hermann, 2007; Maxham and Netemeyer, 2002), loyalty (Gounaris and Stathakopoulos, 2004);
  – commitment to the firm (Brown et al., 2005; Dick and Basu, 1994; Henning-Thurau, Gwinter, Walsh,
and Gremler, 2002; Lacey, Suh, and Morgan, 2007);
- trust (Ranaweera and Prabhu, 2003; Sichtmann, 2007);
- service quality (Harrison-Walker, 2001);
- length of relationship with the firm (Wangenheim and Bayon, 2004a 2004b); and
- perceived value (Matos and Vargas, 2008).

• The second line of research aims to understand WOM receivers’ information search behaviors or, more specifically, under what circumstances (non-interpersonal factors) consumers resort to WOM rather than other information sources before making their purchase decisions.

Researchers have found that consumers are more likely to seek other people’s opinions before purchasing when they have less experience and a stronger involvement in the purchase of the product category (Gilly, Graham, Wolfinbarger, and Yale, 1998) or when they perceive greater risk in the decision making (Bansal and Voyer, 2000).

• The third line of research also adopts the perspective of the WOM receiver and examines why some personal information sources (positive and negative WOM) exert a stronger influence. Researchers have identified forces (interpersonal factors) that influence the receiver’s behavior, such as
- the WOM sender’s experience and strength of expression (Bansal and Voyer, 2000; Gilly et al., 1998);
- the strength of the personal tie between WOM sender and receiver (Frenzen and Nakamoto, 1993);
- the demographic similarity (Brown and Reingen, 1987); and
- the perceptual affinity (Gilly et al., 1998).

CONCEPTUAL MODEL AND HYPOTHESES
In line with the aforementioned literature on WOM, the authors have developed a conceptual framework (See Figure 1) that

- adopts the perspective of the WOM receiver;
- describes the relations between the type of WOM (positive or negative) and the shift in the brand-purchase probability;
- analyzes which type of WOM has the most impact on the shift in the brand-purchase probability; and
- investigates the effect—direct or indirect—on the shift in the WOM receiver’s brand-purchase probability of different interpersonal (how actively WOM is sought, strength of tie between sender and receiver, and sender’s experience and strength of expression) and non-interpersonal factors (receiver’s loyalty, experience and perceived risk).1

IMPACT OF POSITIVE AND NEGATIVE WOM ON SHIFT IN RECEIVER’S PURCHASE PROBABILITY
In general, positive (or negative) WOM is assumed to make the receiver more positive (or negative) about the object of advice (East et al., 2008).

Some studies, however, have observed the opposite response among receivers (Fitzsimons and Lehmann, 2004): people sometimes react against negative comments and became even more committed to the brand. Such contrary responses can occur when

- people are directed to do things that they do not want to do,
- the WOM receiver disagrees with the values of the advisor, or
- when prior commitment to a brand may prevent consumers from fully accepting useful negative information about that brand.

Assuming that contrary responses are not common, then conceivably positive WOM has a positive impact—and negative WOM a negative impact—on the brand’s purchase.

The authors thus offer their first hypothesis:

H1: Positive (negative) WOM has a positive (negative) impact on the shift in the receiver’s purchase probability.

It is also interesting to analyze which type of WOM (positive or negative) has the most impact. The literature offers little evidence on this question.

Some studies have found that negative WOM has more impact than positive WOM. For example, one field study found that negative WOM has twice as much impact on judgment or attitudes as positive WOM (Arndt, 1967). The author of that report studied only one brand, however, and systematic research should be based on all the brands in a category and should include a range of categories. This author also used a new brand about which
There could be few established beliefs. Nevertheless, a later study confirmed the previous results and observes that negative WOM is more influential than positive WOM (Assael, 2004).

There is some theoretical justification for the idea that negative information usually has more impact on judgment than positive information. Indeed, one study found that negative information usually was rarer than positive information because the latter can often be presumed (Fiske, 1980). In such instances, the relative rarity of negative information surprises consumers and, consequently, they pay more attention to it.

This is the so-called negativity effect, which has been observed in other studies (Chevalier and Mayzlin, 2006) and can be expressed in terms of the gap between the position implied by the WOM message and the receiver’s position.

This gap has diagnostic value: information that restates what the receiver believes may increase certainty but is unlikely to change other aspects of a receiver’s judgment (e.g., purchase probability). In many markets, the greater amount of positive information about the different brands ensures that the position of most WOM receivers is positive, so negative information will have more impact.

In any case, the impact of positive (or negative) WOM may differ when the brands are familiar. For example, one study analyzed the response of consumers receiving positive and negative information about brands and compared the results when the consumers are familiar or unfamiliar with the brand (Ahluwalia, 2002). According to this research, when the brand is unfamiliar, the negative information is perceived to have more diagnosticity, but when the brand is familiar, no significant differences exist in the impacts of positive (or negative) information. That study argued that brand familiarity attenuates the perception of the greater diagnostic value of negative information and suggested that, under these circumstances, positive information may be perceived to be more diagnostic than negative information.

Such studies as those referenced here typically measure how advice changes judgment and/or attitude. In research on the purchase of brands, it is more relevant to measure the change in the purchase probability brought about by WOM type. From this perspective, using both role-play experiments and surveys further measured WOM’s impact on choice as a shift in the stated purchase probability, from pre-WOM purchase probability to post-WOM purchase probability (East et al., 2008). These authors contended that, if the pre-WOM purchase probability is below 0.5, there is more room for change in response to positive WOM than in response to negative WOM.

For example, if the pre-WOM purchase probability is 0.3, positive WOM can have a maximum effect of 0.7 (up to unity), whereas negative WOM can have a maximum effect of only 0.3 (down to 0). That study also sought to obtain a mean pre-WOM purchase probability of 0.4, so the authors argued that positive WOM usually had more effect than negative WOM.

In short, room for change in the brand-purchase probability is limited by the pre-WOM purchase probability, which could favor the impact of either positive (or negative) WOM, depending on the mean pre-WOM purchase probability.

Thus, conceivably:
H2: Positive WOM has more impact than negative WOM on the shift in the receiver’s brand-purchase probability when the pre-WOM purchase probability is low.

INTERPERSONAL FACTORS ASSOCIATED WITH IMPACT OF POSITIVE AND NEGATIVE WOM ON SHIFT IN RECEIVER’S PURCHASE PROBABILITY

Figure 2 summarizes the characteristics of the interpersonal factors (how actively WOM is sought; strength of tie between sender and receiver; sender’s experience and strength of expression), the relation between them, and their impact on the shift in the receiver’s purchase probability.

HOW MARKETERS ACTIVELY SEEK WOM

The active search for information through WOM is defined as “the process of seeking and paying attention to personal communications.”

Associated with the process of active search for information through WOM is the selective exposure to the messages deriving from WOM communication, which, in turn, implies that the consumer has a greater predisposition toward the WOM message (Arndt, 1967).

Thus, a message that is sought actively will have a greater impact on the shift in the WOM receiver’s purchase probability than one that is received passively and is moreover unsought and unrequested.

The authors’ third hypothesis follows:

H3: The more intense the WOM (positive or negative) receiver’s active search for information, the greater the shift in the receiver’s purchase probability.

TIE STRENGTH

Sources of WOM recommendation can be classified according to the similarity of the parties and the proximity or closeness of the relationship between the WOM receiver who must make the decision and the WOM sender (Duhan, Johnson, Wilcox, and Harell, 1997): in other words, in function of their tie strength. The tie strength of a relationship is considered to be high when the sender knows the receiver personally. Moreover, the tie strength contains the following interpersonal dimensions (Frenzen and Davis, 1990):

- closeness,
- intimacy,
- support, and
- association.

Tie strength, therefore, reflects the relation and the type of tie existing between two people.

A later work suggested that a high tie strength will have a stronger influence on the receiver’s behavior than a weak tie strength (Frenzen and Nakamoto, 1993). When the tie is strong, the WOM sender and receiver will be more familiar with each other, and the receiver will attribute greater credibility to the sender. Moreover, the receiver will be more likely to initiate an active search for information.

In light of the preceding, the fourth hypothesis is as follows:

H4: The stronger the tie between the sender and the receiver, the more actively the receiver will seek information through the two types of WOM (positive or negative).

SENDER’S EXPERIENCE AND STRENGTH OF EXPRESSION

The WOM sender’s experience conceivably will affect the way the WOM is perceived.

Specifically, the receiver will seek information more actively from a sender seen as expert: in other words, someone who has a high level of knowledge, competence,
education, and experience in the product category (Netemeyer and Bearden, 1992).

By contrast, if the receiver perceives the sender’s knowledge, competence, education, and experience in the product category is low, the receiver is likely to be less predisposed to seek or request information from the sender to form an intention or make a purchase decision.

The fifth hypothesis of the current study is as follows:

H5: The greater the receiver’s perception of the sender’s experience, the more actively the receiver will seek information through the two types of WOM (positive or negative).

Conversely, the WOM sender’s strength of expression can be defined as the WOM receiver’s perception of the extent to which the sender uses convincing arguments in their positive (or negative) WOM.

Conceivably, the WOM sender’s strength of expression will directly affect the impacts of the positive and negative WOM communication on the shift in the receiver’s future purchase probability (East et al., 2008).

This leads to the following hypothesis:

H6: The greater the WOM sender’s strength of expression, the greater the shift in the purchase probability of the consumer who has received positive (or negative) WOM.

**Figure 3 Non-Interpersonal Factors: Impact on Shift in Receiver’s Purchase Probability**

with an interpersonal factor (how actively WOM is sought), and their impact on the shift in the receiver’s purchase probability.

**Receiver’s Loyalty**
The loyalty of the receiver of the positive (or negative) WOM communication about a brand can conceivably help explain the shift in their future purchase probability.

Loyal receivers have a stronger motivation for processing new positive information (positive WOM) about the brand they habitually purchase to reduce their cognitive dissonance (Wangenheim, 2005) and reinforce their future purchase behavior.

Furthermore, loyal receivers will have a strong resistance to being persuaded by negative information (negative WOM) about the brand they purchase habitually and will try to convince themselves that their previous decisions were right and that the negative recommendation is the result of the WOM senders’ one-off market experience (Matos and Vargas, 2008; Sweeney, Soutar, and Mazzarol, 2008).

Thus, the conceptual framework proposes

H7: The greater the WOM receiver’s prior brand loyalty, the weaker the impact of positive and negative WOM about the brand on the shift in the receiver’s purchase probability.

**Receiver’s Experience**
Various studies have suggested that a negative relation exists between the consumer’s experience and the active search for external information before making a purchase decision (Bansal and Voyer, 2000; Mishra, Umesh, and Stern, 1993). This is because the expert receiver already possesses sufficient knowledge about the product category and has no need to consult with other people before making a decision.
By contrast, WOM receivers with little experience or knowledge about the product category are likely to lack confidence about their ability to make an appropriate, satisfying decision. Thus, they will feel the need to consult with other consumers.

Hypothesis 8 of this work follows:

H8: The greater the WOM receiver’s experience, the less actively they will seek information through the two types of WOM (positive or negative).

Receiver’s Perceived Risk
A perceived risk is defined as a “subjective expectation of losses” (Dholakia, 1997, p. 161). The perceived risk variable is tied to each product category, so the purchase of different product categories is associated with different levels of perceived risk. Perceived risk also is an individual characteristic, as different people can perceive different levels of risk when purchasing the same product.

A relation conceivably exists between WOM receivers’ experience in the product category and their perceived risk in its purchase. Consumers who are less experienced in a particular product category probably will perceive more risk in that purchase and, from the information economics perspective, they will gain more from the information that the WOM sender provides (Gilly et al., 1998). The penultimate hypothesis of this work follows:

H9: The more experienced the receiver of the two types of WOM (positive or negative), the lower the perceived risk associated with the purchase of the product/service.

In an effort to reduce the risk associated with a purchase decision, consumers seek information about the product. WOM is one of the most effective sources of information for reducing the risk associated with the purchase of a particular product (Guo, 2001).

People who perceive more risk in a purchase situation tend to seek information through WOM more actively than those who perceive a lower risk (Arndt, 1967). WOM, in fact, may be the most important information source for reducing risk (Bansal and Voyer, 2000). It also has the strongest impact on the receiver of the communication, mainly because it permits clarification of any doubts and offers the chance of leaving feedback (Murray and Schlacter, 1990).

The final hypothesis of the current study:

H10: The greater the receiver’s perceived risk in relation to the purchase of the product, the more actively they will seek information through the two types of WOM (positive or negative).

METHODOLOGY
Sample and Data Collection
To test the 10 hypotheses, the authors chose two consumer durables product markets: mobile phones and laptop computers; and two services: mobile-phone companies and travel agencies.

These products and services were chosen because

- consumers need to make evaluations and comparisons when purchasing them (high involvement),
- their use and consumption is very widespread, and
- consumers are likely to perceive risk in the purchase decision.

The nature of the choices helped ensure that the authors could gather a sample of subjects that had received positive (or negative) WOM communications from people unconnected to the different market players.

The study participants were recruited randomly in various shopping centers in northern Spain. To ensure familiarity, the consumers interviewed had to own and use a mobile telephone or laptop computer or use the services of a mobile-phone company or travel agency. They also had to have received, in the past 3 months, positive (or negative) WOM for different brands of the aforementioned products or services.

After this random sampling system, the authors obtained information from a sample of 1,100 individuals. They excluded 65 questionnaires due to incomplete data, which resulted in a net sample size of 1,035.

Each subject was asked about only one product or service. The sample, therefore, consisted of 1,035 different individuals. Furthermore, the sample consisted of actual consumers of the products or services analyzed, not of students.

The distribution of the subjects by products/services was as follows (Table 1):

- 258 subjects owned and used a mobile phone,
- 253 owned and used a laptop,
The 268 used the services of a mobile-phone company, and
256 used a travel agency.

The distribution by gender was 47.7 percent male and 52.3 percent female. A total of 45.4 percent of the respondents were between ages 18 and 34 years, 40.5 percent between 35 and 54 years, and 14.1 percent older than 54 years. Finally, 52.6 percent of the respondents had received positive WOM, whereas 47.4 percent had received negative WOM.

The authors collected the information they required using structured questionnaires presented in the course of personal interviews. The first part of the questionnaire asked the respondents (WOM receivers) about their experience with the category, their current brand, their tendency to ask for advice before making the purchase, and their perception of the risk in the purchase.

The second part of the questionnaire focused on the WOM received by the individuals. The interviewees were asked whether they had received many or only a few positive (or negative) WOM communications about a particular product or service in recent months.

If they had received a number of WOM communications, they were asked to consider the single communication they felt had had the most impact on their decision.

The questionnaire then asked survey participants about the following:

- the brand that was the subject of the positive (or negative) recommendation;
- a number of points relating to the WOM sender:
  - strength of relationship with them,
  - experience in the product/service category, and
  - credibility of arguments used; and
- the probability of choosing the brand before and after the positive (or negative) recommendation.

The questionnaire concluded with questions about the age and gender of the respondents.

**Variable Measures**

Using construct definitions and pre-existing measures available from the literature, the authors generated a set of items for each construct. They also consulted five practitioners and academic experts. Any problematic items were either deleted or appropriately modified.

The authors presented the resulting items to 20 consumers of the products and services analyzed in this research in face-to-face meetings to ensure that the questions were worded with appropriate consistency. They then revised several items on the basis of the feedback. Finally, to measure each of the constructs of interest, they adopted single-item and multi-item scales (Appendix).

The authors used three single-item measures to capture information about brand-purchase probability before receiving the WOM recommendation (receiver’s loyalty), brand-purchase probability after receiving the WOM recommendation, and sender’s strength of expression.

A single-item measure is sufficient if the construct is such that in the mind of “raters” (e.g., respondents in a survey), the object or attribute of the construct is “concrete,” meaning that it consists of one object or attribute that is easily and uniformly imagined (Bergkvist and Rossiter 2007, 2009).

In the current study, the object (brand) or the attribute (how convincing/credible were the explanations of the person who sent the WOM) is concrete, so the authors used single-item measures to capture information about brand-purchase probability (a 10-point scale) and sender’s strength of expression (7-point scale).

The shift in the receiver’s brand-purchase probability was calculated as the difference between the probability of choosing the brand after and before the recommendation.

The authors also use multi-item measures to capture information about five constructs linked to interpersonal and non-interpersonal factors of the WOM communication:

**TABLE 1**

Sample Characteristics

<table>
<thead>
<tr>
<th>Product – Service</th>
<th>Mobile phone</th>
<th>Laptop</th>
<th>Mobile-phone services</th>
<th>Travel agency services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJECTS</td>
<td>258</td>
<td>253</td>
<td>268</td>
<td>256</td>
<td>1,035</td>
</tr>
<tr>
<td>Male (%)</td>
<td>46.8</td>
<td>53.8</td>
<td>44.6</td>
<td>46.2</td>
<td>47.7</td>
</tr>
<tr>
<td>Female (%)</td>
<td>53.2</td>
<td>46.2</td>
<td>55.4</td>
<td>53.8</td>
<td>52.3</td>
</tr>
<tr>
<td>Between 18 and 34 (%)</td>
<td>49.4</td>
<td>47.8</td>
<td>44.5</td>
<td>40.1</td>
<td>45.4</td>
</tr>
<tr>
<td>Between 35 and 54 (%)</td>
<td>38.3</td>
<td>43.5</td>
<td>42.2</td>
<td>38.6</td>
<td>40.5</td>
</tr>
<tr>
<td>Over 54</td>
<td>12.3</td>
<td>8.7</td>
<td>13.3</td>
<td>21.3</td>
<td>14.1</td>
</tr>
<tr>
<td>Positive WOM (%)</td>
<td>52.4</td>
<td>54.2</td>
<td>50.8</td>
<td>53.1</td>
<td>52.6</td>
</tr>
<tr>
<td>Negative WOM (%)</td>
<td>47.6</td>
<td>45.8</td>
<td>49.2</td>
<td>46.9</td>
<td>47.4</td>
</tr>
</tbody>
</table>
• how actively WOM is sought,
• tie strength,
• sender’s experience,
• receiver’s experience, and
• receiver’s perceived risk.

To evaluate each of these measures, the authors used 7-point scales. The principal theoretical argument for using a multi-item measure of a construct is that a multi-item measure captures more information and is more likely to tap all facets of the construct of interest (Bergkvist and Ros- siter, 2007, 2009). Another argument for multiple items is that it increases reliability by allowing the calculation of the coefficient alpha, which indicates the “internal consistency” of all the items that represent the presumed underlying construct.

This “reliability” argument, however, needs to be qualified. The coefficient alpha never should be used without first establishing the unidimensionality of the scales; this can be investigated by factor analysis. Thus, the authors ran five exploratory factor analyses for the constructs linked to interpersonal and non-interpersonal factors of the WOM communication. These tests confirmed the unidimensionality of each of the five scales, which means the coefficient alpha can be used.

The resulting coefficient alphas were high, indicating “internal consistency” and supporting the use of multi-item measures to capture information about the constructs linked to interpersonal and non-interpersonal factors of the WOM communication (See Appendix).

Another problem that the authors considered was common-method bias, which occurs when the correlation between two or more constructs is high. The results obtained allowed the authors to identify five factors corresponding to interpersonal and non-interpersonal constructs of the WOM communication. The factor loadings were high in each of the five dimensions identified, and the factors together explained 85 percent of the variance (KMO = 0.897).

As a result, the common-method bias was not a problem for the current analysis, so multi-item measures could be used in subsequent analyses to obtain information about the constructs linked to interpersonal and non-interpersonal factors of the WOM communication.

**Data Analysis: The Measurement Model**

The data analysis employed a two-step procedure. The measurement model was estimated for the entire sample (positive and negative WOM receivers) prior to the analysis of the structural model. All variables of interest were conceptualized as reflective first-order constructs. A measurement model including how actively WOM is sought, tie strength, sender’s experience, receiver’s experience and perceived risk was subjected to confirmatory factor analysis using structural equation modeling (with EQS).

As a result, a 22-item, five-factor covariance structure measurement model was estimated to assess the fit, reliability, and validity of the measurement scales of the model constructs. In addition, the average variance extracted (AVE), the composite reliability coefficient (CR), and the standardized lambda parameters also were examined. Together, these tests provide evidence of reliability and validity. See Appendix for a summary of the scales’ psychometric properties, which were obtained from the measurement model.3

**RESULTS**

**Descriptive Analysis: Impact of WOM Communications on Purchase Probability**

Descriptive analysis (using SPSS) was employed to test the hypothesized relations H1 and H2 in the four product/service categories. Table 2 (col. 1) shows the categories. Columns 2 and 3 are the purchase probabilities prior to positive and negative WOM, respectively, and columns 4 and 5 are the mean shifts in the purchase probability produced by positive and negative WOM, respectively.

According to these results, positive WOM has a positive impact, and negative WOM has a negative impact on the shift in the receiver’s brand-purchase probability. H1 is supported.

Furthermore, when the mean impacts of positive and negative WOM are measured as the shift in purchase probability, positive WOM produces a mean shift of 1.8542, and negative WOM produces a mean shift

3 The measurement model fits the data well. Regarding reliability, each construct has a composite reliability and AVE greater than the recommended threshold values of 0.5 and 0.6, respectively. In addition, for all constructs, the Cronbach alpha coefficient exceeds 0.9. Convergent validity is supported as all lambda parameters are significant and greater than 0.5. Discriminant validity is supported, as the confidence intervals of the correlations between all the variables do not include 1.0 and the squared correlations do not exceed the AVE. Finally, the fit statistics indicate a good model fit (Root Mean Square Error of Approximation = 0.065; Bentler-Bonett Non-Normed Fit Index = 0.955; General Fit Index = 0.966; robust Comparative Fit Index = 0.961).
of -1.6261, which means positive WOM is 14 percent more influential than negative WOM. When absolute numbers are tested, positive WOM has significantly more impact than negative WOM in the means data and across categories of products \((p < 0.001\) one-tailed exact tests).

Thus, analyzing the shifts in purchase probability, H2 is supported. Overall, positive WOM has more impact that negative WOM.

The authors also used descriptive analysis (with SPSS) to test the hypothesized relation H7 in the four product/service categories. The results do show that the greater the WOM receiver’s previous loyalty, the weaker the impact of both positive and negative WOM communications on the shift in the brand-purchase probability. Table 3 and Figure 4 present the relation between previous brand loyalty and shift in the brand purchase probability in a more accessible form. For both positive and negative WOM, a relatively straight section on each plot is evident, which then deflects toward the x-axis. These deflections can be attributed to the effect of brand commitment and show how this factor constrains the impact.

Thus, this work provides support for H7: the receiver’s loyalty reduces the impact of positive and negative WOM on the brand-purchase probability.

### Causal Analysis: Structural Model Evaluation

The authors used structural-equation modeling (with EQS) to test the remaining hypotheses in the two subsamples: consumers who had received positive WOM or negative WOM (Table 4).

Most of the proposed relations are supported in both subsamples: consumers who had received positive (or negative) WOM. Thus, the more intense the receiver’s active search for information and sender’s strength of expression, the greater the shift in the brand-purchase probability (See Table 4).

Thus, H3 and H6 are supported.

The results also confirm the influence of sender’s experience, receiver’s experience, and receiver’s perceived risk on how actively WOM is sought, and H5, H8, and H10 are supported.

The results also show that H9 is supported in both subsamples: the greater the experience of the receiver of the positive (or negative) WOM communication, the lower the risk perceived in the purchase of the product/service.

### TABLE 2

<table>
<thead>
<tr>
<th>Product/Service Category</th>
<th>Purchase probability</th>
<th>Shift in purchase probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prior to positive WOM</td>
<td>Prior to negative WOM</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>4.4336</td>
<td>4.5245</td>
</tr>
<tr>
<td>Laptop</td>
<td>4.4389</td>
<td>4.6631</td>
</tr>
<tr>
<td>Mobile-phone services</td>
<td>3.6892</td>
<td>3.7330</td>
</tr>
<tr>
<td>Travel agency</td>
<td>4.6347</td>
<td>4.9896</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4.2984</td>
<td>4.4721</td>
</tr>
</tbody>
</table>

*Descriptive analysis: impact of receivers’ loyalty on purchase probability*
The results, however, only partially support the influence of the strength of the tie between sender and receiver on how actively WOM is sought. The parameters obtained are significant for the subsample of consumers who received positive WOM but non-significant for the subsample of consumers who received negative WOM.

H4 is supported for positive WOM but not for negative WOM.

**DISCUSSION AND CONCLUSIONS**

WOM long has been recognized as a powerful force affecting consumers’ attitude and choice. The results of the current study enhance current understanding of how WOM influences the receiver’s choice.

This article, unlike previous studies, represents an attempt to explicitly test the differential impact of positive and negative WOM on the mean shift in the brand-purchase probability.

Furthermore, this work differs from most earlier studies on WOM in that the authors investigated various brands in a range of categories of products (mobile phones and laptops) and services (mobile-phone companies and travel agencies). From this perspective, this study makes various contributions to the literature on WOM communications in marketing.

Specifically:

**Figure 4** Mean Shift in Purchase Probability after Positive and Negative WOM

The graph illustrates the mean shift in purchase probability after positive and negative WOM. The x-axis represents purchase probability prior to WOM (receiver’s loyalty), and the y-axis shows the mean shift in purchase probability. The black line represents positive WOM, and the gray line represents negative WOM. The graph shows that the mean shift in purchase probability is higher for positive WOM compared to negative WOM, especially when the purchase probability prior to WOM is high.
The empirical analysis shows that positive (negative) WOM has a positive (negative) impact on the shift in the receiver's brand-purchase probability. The results also show that positive WOM has a stronger impact on brand-purchase probability than negative WOM.

An explanation for positive WOM’s stronger effect in this study is that the prior purchase probability tends to be below 5 on a 10-point scale. In particular, the prior purchase probability is 4.2984 for the positive WOM subsample and 4.4721 for the negative WOM subsample. This situation leaves more room for change in response to positive WOM than in response to negative WOM.

Thus, the results suggest that negative WOM is less diagnostic than positive WOM. There is a “positivity effect” (using Fiske’s gap explanation), with positive WOM having more impact than negative WOM.

The results also show that the same interpersonal factors govern the impact of both positive and negative WOM on the shift in the receiver’s brand-purchase probability. The authors can conclude that the sender’s strength of expression has the greatest influence for both positive and negative WOM, followed by how actively WOM is sought.

The findings of this study suggest that when the sender’s strength of expression is high and when WOM (positive or negative) is actively sought, WOM will have a significant influence (positive or negative) on the shift in the receiver’s brand-purchase probability.

Thus, marketing strategies designed to promote interpersonal communication will reach more senders/receivers and be more efficient if they are directed at senders with strength of expression and receivers who are motivated to seek information through WOM.

Firms also should pay particular attention to the potential influence of negative WOM, as these communications reduce the purchase probability. Consequently, companies should also adopt decisions about marketing strategies directed at senders and receivers with the objective of minimizing the sending of negative WOM and/or the effects of exposure to negative communications of people motivated to seek advice actively.

Nevertheless, the effect of both interpersonal factors on the receiver’s decision is stronger when the WOM information is positive (positive WOM) than when it is negative (negative WOM).

### TABLE 4

<table>
<thead>
<tr>
<th>Hypothesised paths</th>
<th>Positive WOM subsample</th>
<th>Supported</th>
<th>Negative WOM subsample</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3: How actively WOM is sought → Shift in brand purchase probability</td>
<td>0.226**</td>
<td>YES</td>
<td>-0.065*</td>
<td>YES</td>
</tr>
<tr>
<td>H4: Tie strength → How actively WOM is sought</td>
<td>0.096**</td>
<td>YES</td>
<td>0.015</td>
<td>NO</td>
</tr>
<tr>
<td>H5: Sender’s experience → How actively WOM is sought</td>
<td>0.155**</td>
<td>YES</td>
<td>0.135**</td>
<td>YES</td>
</tr>
<tr>
<td>H6: Sender’s strength of expression → Shift in brand purchase probability</td>
<td>0.489**</td>
<td>YES</td>
<td>-0.440**</td>
<td>YES</td>
</tr>
<tr>
<td>H7: Receiver’s loyalty → Shift in brand purchase probability</td>
<td>-0.325**</td>
<td>YES</td>
<td>-0.426**</td>
<td>YES</td>
</tr>
<tr>
<td>H8: Receiver’s experience → How actively WOM is sought</td>
<td>-0.159**</td>
<td>YES</td>
<td>-0.126</td>
<td>YES</td>
</tr>
<tr>
<td>H9: Receiver’s experience → Receiver’s perceived risk</td>
<td>-0.218**</td>
<td>YES</td>
<td>-0.219**</td>
<td>YES</td>
</tr>
<tr>
<td>H10: Receiver’s perceived risk → How actively WOM is sought</td>
<td>0.646**</td>
<td>YES</td>
<td>0.659**</td>
<td>YES</td>
</tr>
<tr>
<td>Bentler-Bonett Non-normed Fit Index (BBNNFI)</td>
<td>0.910</td>
<td>0.915</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>0.919</td>
<td>0.923</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Fit Index (GFI)</td>
<td>0.924</td>
<td>0.928</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>0.075</td>
<td>0.080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satorra-Bentler Scaled Chi Square S-Bχ² (probability value)</td>
<td>1231.1561 (0.000)</td>
<td>1279.0923 (0.000)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Standardised parameters are shown (**p < 0.01)*
• The current findings support the hypothesis that level of receiver’s loyalty (a non-interpersonal factor) reduces the impact of both positive and negative WOM on the shift in the receiver’s purchase probability. Thus, the effect of WOM (positive or negative) is conditioned by the receiver’s previous loyalty.

As the receiver’s level of loyalty toward a brand increases, positive and negative WOM about that brand will have less impact on the shift in the future purchase probability. Looking at the plots in Figure 4, positive messages (positive WOM) clearly have more impact when the receiver’s pre-WOM loyalty is from 0 to 6, whereas negative messages (negative WOM) have more influence in the range 4 to 7 (See Figure 4).

Thus, the potential impact of WOM (positive or negative) can be estimated for any segment of consumers if the mean pro-WOM loyalty can be assessed using purchase records or management judgment, for example.

• Various factors directly influence how actively WOM is sought and indirectly affect the shift in the receiver’s purchase probability.

The current findings indicate that, when senders are perceived as knowledgeable, the receivers are motivated to actively seek information (positive or negative WOM) from them. Thus, a significant positive relation exists between the two constructs.

Likewise, when the tie between senders and receivers is strong, the receivers are motivated to actively seek positive WOM information (empirical evidence for negative WOM was not found).

Conversely, the receiver’s experience was also found to be a significant indicator of how actively WOM is sought. The more knowledgeable people are or the more experience they possess, the less intense will be the active search for information (positive or negative WOM).

Furthermore, the greater the receiver’s experience, the less risk they will perceive in the purchase; and the greater the perceived risk, the more active the search for WOM information (positive or negative WOM).

• For both positive and negative WOM, the receiver’s perceived risk has the strongest positive effect, followed by the receiver’s experience (negative effect), sender’s experience (positive) and, to a lesser extent, strength of tie between sender and receiver (positive influence only for positive WOM).

The practical implication of these empirical results is that companies should pay particular attention to the consumers who are most motivated to seek advice actively (less experienced consumers who perceive more risk in the purchase) to maximize their exposure to positive communications from senders perceived as knowledgeable and with whom they have strong ties and minimize their exposure to negative communications from senders perceived as experts.

Management Implications

WOM is one of today’s most powerful marketing tools. It is reported to be one of the fastest growing sectors in marketing and media services. Smart marketers have an opportunity to become a part of the consumer-driven WOM conversation through well-planned, well-researched, and well-executed WOM marketing programs—at which time, they will be well positioned to influence consumers’ purchase intentions.

For marketers, the findings of this study suggest that companies should develop marketing strategies to encourage positive WOM messages and increase their effectiveness. At the same time, companies should clearly also make efforts to avoid negative WOM.

Thus, academics and marketing directors should pay more attention to the management of WOM, as WOM can complement the firm’s policy of advertising communication and, hence, increase its efficacy. Likewise, not only are both types of communication complementary, which improves the firm’s performance, but traditional media and marketing communications have a significant role to play in influencing conversations. Firms can use advertising to spread messages in the media that stimulate consumers to speak favorably about their brands and say good things about their products.

This ideal situation, however, will happen only if the brand is credible, the firm’s products/services are reliable, and its marketing activities are believable. In such cases, customers are very likely to initiate more positive conversations about the brand than negative ones.

Given the need to obtain a positive WOM flow from senders to receivers, companies should aim to keep the senders satisfied by providing a good product or service, effectively practicing sender-centered relationship marketing. In this context, WOM programs should create experiences for consumers and convey information that encourages influential individuals or groups to talk freely, authoritatively, and credibly with others.

Enabling consumers to co-create brand meaning and tell stories is essential to WOM. Bain & Co. has reported there is no better force to drive sales growth than strong customer advocacy. Indeed, its research shows that the most recommended company in its category grows 2.5 times more than the category average. Likewise, Booz & Co., a leading consultancy has advised, “Make your consumer...
an advocate: shift marketing objectives from sending a message to facilitating conversations with and between consumers.”

Thus, companies should use marketing activities to incentivize satisfied consumers with a high degree of loyalty to act as senders of positive WOM messages, particularly to those people (receivers) with whom they maintain a strong tie. It is not just a question of encouraging an “endogenous WOM,” which is characterized by a conversation that occurs naturally among consumers as a function of the senders’ positive experiences with the product or service. Firms also should develop a proactive management of customer-to-customer communications. In other words, they create an “exogenous WOM” as a result of its actions (effecting meaningful positive WOM).

For this purpose, companies should use loyalty programs to incentivize satisfied customers to become effective disseminators of information. In fact, companies should put the satisfied customer at the center of a communications campaign and encourage them to offer potential consumers detailed positive information—convincingly argued—about the brand’s good points.

The satisfied senders’ experience and strength of expression can help them to be perceived as “opinion leaders.” It is in this context that a company needs to identify the most dynamic consumers in the recommendation activity, as they can help it attract new customers with a minimum economic investment. Moreover, the economic value that an active customer can generate via WOM is a good means of segmenting customers in function of their capacity to influence the rest—the goal of all marketers.

One other aspect of interest to practitioners in the strategic management of WOM: in what environment is WOM communication more commonly generated? Since 2006, advertising-agency/WOM consultants Keller Fay has compiled data since 2006 that consistently show that WOM conversations happen most often in offline environments. Clearly, practitioners cannot ignore the off-line conversations that take place between people, but they should also try to exploit to the maximum the opportunities opened up by the Internet (Fong and Burton, 2006) and encourage people to support WOM so the company can benefit from it as soon as possible.

Much of the importance of the Internet for WOM communication is grounded in the links between people in a social network. A recommendation is more valuable in groups that have stronger links. People with closer relationships—married couples or friends, for example—tend to interact more frequently than mere acquaintances.

Knowing this, companies might target “evangelical” customers—the most interconnected groups in the Internet—by analyzing social networks, cliques, or the groups that such contacts create and identify the most influential people in these groups.

Companies also should remember that the most socially connected individuals are more liable to offer recommendations and that physical proximity is not a significant variable. It is critical, therefore, that companies understand the social networks in which consumers operate (their links and how they operate in them) to extend positive WOM and minimize the effects of any negative WOM.

In short, the diffusion of opinion leaders’ messages in both traditional and modern communications media (e.g., social networks such as Facebook, Twitter, and LinkedIn) will help persuade positive WOM receivers to increase their brand-purchase probability.

In parallel, companies also should stimulate the desire in the receiver to obtain advice about the product or service. Firms can use market research to identify consumers (receivers) with a moderate purchase probability or loyalty, and distinguish segments with high (or low) experience in the product or service category.

The aim is for the receivers to seek information from satisfied customers so their future purchase probability increases. An advertising campaign could encourage both segments of consumers to seek information from other people: for example, to seek information from satisfied, loyal expert senders with whom they have a strong tie or who are considered an objective, third-party source. Receivers with experience in the product/service category and moderate brand loyalty could begin to doubt and eventually conclude that they do not possess as much experience as they initially had thought.

Another possibility to increase the effectiveness of a positive WOM message is to do market research to classify potential consumers (receivers with a moderate purchase probability and low experience) into segments according to the risk that they primarily associate with the purchase decision. The resulting groups could be addressed with differential communications and interpersonal influence strategies.

For example, potential customers high in functional risk could be encouraged to connect with satisfied, loyal expert senders about the superiority of a firm’s product/service. Customers with high social/psychological risk perception could be recommended to senders in their peer group with whom they maintain a strong tie and perceive as being similar to themselves.

Limitations and Future Lines of Research
This study has a number of important limitations, which can be seen as starting points for future research.
It would be advisable in future work to subject the receivers to actual positive and negative WOM situations and record their actual purchase decision.

- The work uses retrospective data in that the receivers must remember positive (or negative) WOM messages that have had an impact on their brand choice and indicate the probability of choosing the brand before and after the positive (or negative) recommendation.

- This study focuses on receivers who actively seek information: in other words, receivers who already are interested in the product or service category. This analysis is important, but it does not shed any light on why some WOM communications have no influence at all, whether positive or negative.

- The subsamples for the four categories analyzed have low or moderate mean pre-WOM purchase probabilities, which explains why negative WOM is less diagnostic than positive WOM. Future research should investigate situations where negative WOM has a stronger impact.

- The consumers in the current study were familiar with the brands considered for the categories analyzed, and the innovations that the companies had launched in the market represented incremental levels of novelty linked to product re-launches.

- The current work did not allow the authors to establish whether the receivers obtain the information from face-to-face relationships or through social networks. Given the importance of electronic WOM, it would be useful to study the dynamics of online WOM and product sales.

The aim would be to study e-WOM via consumer opinion platforms and investigate what motivates senders and receivers to articulate themselves on the Internet.

ACKNOWLEDGMENTS

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REFERENCES


## APPENDIX

Results of Measurement Model: Psychometric Properties of the Scales

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Standardised loading ($\lambda^*$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Receiver’s experience</strong> (AVE = 0.972; CR = 0.950; $\alpha = 0.955$). Similar items can be found in: Bansal and Voyer (2000)</td>
<td></td>
</tr>
<tr>
<td>I know this product/service category very well</td>
<td>0.880</td>
</tr>
<tr>
<td>I am competent and capable in things concerning this product/service category</td>
<td>0.910</td>
</tr>
<tr>
<td>I am very familiar with the current features of this product/service category</td>
<td>0.923</td>
</tr>
<tr>
<td>I am very experienced in the purchase of this product/service category</td>
<td>0.847</td>
</tr>
<tr>
<td>I think I have enough information about this product/service category</td>
<td>0.889</td>
</tr>
<tr>
<td><strong>2. How actively WOM is sought</strong> (AVE = 0.704; CR = 0.877; $\alpha = 0.906$). Similar items can be found in: Bansal and Voyer (2000)</td>
<td></td>
</tr>
<tr>
<td>Before buying I seek advice from people unconnected to the firm</td>
<td>0.850</td>
</tr>
<tr>
<td>Probability of accepting advice from other people (1 = very low; 7 = very high)</td>
<td>0.821</td>
</tr>
<tr>
<td>Explicit requirement of opinion of other people to take decisions (1 = very low; 7 = very high)</td>
<td>0.846</td>
</tr>
<tr>
<td><strong>3. Receiver’s perceived risk</strong> (AVE = 0.767; CR = 0.908; $\alpha = 0.901$). Similar items can be found in: Bansal and Voyer (2000) and Wangenheim and Bayon (2004b, 2007)</td>
<td></td>
</tr>
<tr>
<td>Thinking about buying this product worries me because of the possibility of taking a risk</td>
<td>0.817</td>
</tr>
<tr>
<td>I think it would be a mistake if I didn’t seek the opinions of other people unconnected to the firm to avoid risks</td>
<td>0.870</td>
</tr>
<tr>
<td>I feel that buying this product is risky and I can avoid these risks if I seek advice from other people unconnected to the firm</td>
<td>0.936</td>
</tr>
<tr>
<td><strong>4. Tie strength</strong> (AVE = 0.846; CR = 0.975; $\alpha = 0.975$). Similar items can be found in: Bansal and Voyer (2000) and Wangenheim and Bayon (2004b, 2007)</td>
<td></td>
</tr>
<tr>
<td>I speak to this person frequently</td>
<td>0.874</td>
</tr>
<tr>
<td>I have a trusting relationship with this person</td>
<td>0.926</td>
</tr>
<tr>
<td>This person understands me, shares my concerns, supports me</td>
<td>0.943</td>
</tr>
<tr>
<td>I have a strong personal relation with this person</td>
<td>0.952</td>
</tr>
<tr>
<td>I have interests and pastimes in common with this person</td>
<td>0.902</td>
</tr>
<tr>
<td>This person has social values and lifestyle like mine</td>
<td>0.914</td>
</tr>
<tr>
<td>I think that this person generally behaves very similarly to my way of seeing life</td>
<td>0.924</td>
</tr>
<tr>
<td><strong>5. Sender’s experience</strong> (AVE = 0.846; CR = 0.956; $\alpha = 0.950$). Similar items can be found in: Bansal and Voyer (2000) and Wangenheim and Bayon (2004b, 2007)</td>
<td></td>
</tr>
<tr>
<td>This person is very knowledgeable about this product/service category</td>
<td>0.924</td>
</tr>
<tr>
<td>This person is very competent in things concerning this product/service category</td>
<td>0.930</td>
</tr>
<tr>
<td>This person has previously bought this product/service category</td>
<td>0.914</td>
</tr>
<tr>
<td>This person is very experienced in this product/service category</td>
<td>0.910</td>
</tr>
</tbody>
</table>

**Other scales developed for this study**

**6. Sender’s strength of expression.** Similar items can be found in: East et al. (2007 and 2008)

How convincing/credible do you think were the explanations of the person who gave you this recommendation? (1 = not at all convincing/credible; 7 = very convincing/credible)

**7. Probability of choosing brand.** ** Similar items can be found in: East et al. (2007 and 2008)**

What was the probability that you would choose this brand before receiving the recommendation? (receiver’s loyalty) (0 = zero; 10 = very high)

What was the probability that you would choose this brand after receiving the recommendation? (0 = zero; 10 = very high)

---

*All standardised loadings are significant ($p < 0.01$). **The shift in the WOM receiver’s brand-purchase probability is calculated as the difference between the probability of choosing the brand after and before the recommendation.*