Newsgroup participants as opinion leaders and seekers in online and offline communication environments

Alex S.L. Tsang\textsuperscript{a,*}, Nan Zhou\textsuperscript{b,1}

\textsuperscript{a}Department of Marketing, School of Business, Hong Kong Baptist University, Renfrew Road, Kowloon Tong, Hong Kong
\textsuperscript{b}Department of Marketing, City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, Hong Kong

Received 1 October 2003; received in revised form 1 December 2003; accepted 1 May 2004

Abstract

Online newsgroups are still largely uncharted waters for marketers. Our goal for this study is to assess the marketing communication value of Internet newsgroups. Our basic proposition is that people exercise opinion leading and, likewise, opinion seeking differently in newsgroups and in offline communication environments. We find that newsgroup participants who are offline opinion leaders rely about as much on offline sources as they do on newsgroups for seeking consumption-related opinions. We also find that, when seeking opinions, newsgroup participants are much more active in newsgroups than in offline channels. Furthermore, we reaffirm previous findings that psychographic variables are more useful than are demographics in describing the characteristics of newsgroup participants. In addition, we analyze a selection of messages posted by newsgroup participants—this is served as a behavioral verification of the commonly used self-reported survey measures of opinion leadership and opinion seeking. Based on these findings, we make recommendations to help marketers identify and influence opinion leaders in newsgroups and to turn them into “positive product information brokers”.

© 2004 Elsevier Inc. All rights reserved.

Keywords: Newsgroup; Opinion seeking; Opinion leading

1. Introduction

Opinion leaders play an important role in marketing communication. They provide informal, consumption-related advice or information to other consumers (Flynn et al., 1996; Kotler, 2000). Since they do not represent commercial interests, their opinions are considered more credible and influential than those that come from commercial sources (Rogers, 1995). Marketers are interested in identifying and influencing opinion leaders and hope to “recruit” them as positive spokespeople of products.

Internet newsgroups are a relatively new channel that opinion leaders use in influencing other consumers. They are like public bulletin boards in a “virtual community”, where people post messages to one another and where others can read and respond at any time (Baym, 1995). Many newsgroups are consumption related in that participants give and seek opinions about products and services.

Therefore, it is becoming increasingly important for marketers to know how communication in newsgroups, which are computer-mediated online environments, may differ from communication in traditional offline environments. If they differ, marketers need to develop new strategies to identify and influence opinion-leading newsgroup participants, who would, in turn, influence opinion seekers and other consumers at large.

Our research seeks to identify differences and similarities between opinion-leading (and, likewise, opinion-
seeking) behaviors in newsgroup and offline environments. Specifically, this study addresses the following questions: (1) Do newsgroup participants display the same levels of opinion leading (and seeking) in newsgroup and offline communication environments? (2) How important are psychographic and demographic characteristics in explaining newsgroup participants’ opinion-leading and -seeking levels? and (3) Are newsgroup participants’ actual opinion leading and opinion seeking behaviors consistent with their self-reported opinion-leading and -seeking levels? We attempt to answer these questions by (a) surveying participants and (b) coding posted messages in consumption-related newsgroups.

1.1. Opinion leading and seeking in newsgroup and offline environments

Studies of opinion leadership root in the work of Lazarsfeld et al. (1944). They suggest that some people have a higher level of involvement in a consumption area than other people do and are therefore more eager to express their opinions to others. Because opinion leaders do not represent commercial sources, their views are given more credibility by consumers than advertising does (Rogers and Cartano, 1962; Rogers, 1995). Those who are influenced by consumers than advertising does (Rogers and Cartano, 1962; Rogers, 1995). Those who are influenced use opinion seeking as a risk-reduction practice in making decisions (Engel et al., 1993).

While one may view opinion leading and seeking as opposite concepts, it is more apt to view them as two separate but related constructs (Flynn et al., 1996). In fact, a person can be an opinion leader in one communication setting and an opinion seeker in another. Lazarsfeld et al. (1944) suggest a two-step communication process in which opinion leaders first learn news of particular products from mass media or commercial sources and then pass their opinions to others. In our research, we focus on two different settings, namely, offline and newsgroup communication environments.

Newsgroups generate person-to-person interactions that make them resemble interpersonal communication (Rafaeli and Sudweeks, 1997), yet, they also resemble a far-reaching printed mass medium—a medium that is open to the public. Since the online and offline environments are different, it is possible that an opinion leader in an offline environment may be an opinion seeker in newsgroups. We propose that two characteristics, asynchronous temporal structure and text-based system infrastructure, differentiate newsgroups from offline communication and make it possible for newsgroup participants to exhibit their opinion-leading and -seeking behaviors differently in the two environments.

1.2. Asynchronous temporal structure

The first characteristic of newsgroups is that they operate under an asynchronous temporal structure in which message posters and readers need not be simultaneously present; messages posted by participants are not as perishable as verbal conversations (Baym, 1995). Ongoing discussions are stored for a period of time, typically from several days to several months. A popular newsgroup may store over 10,000 messages, which are separated by topic headings. Headers of the same topic are linked in a tree structure called a “thread”. While discussions on a specific topic may continue for several months, all messages have a date and time stamp and can be arranged chronologically. The asynchronous structure of newsgroups makes them databases of product-related intelligence that is superior to verbal communications in offline environments for obtaining opinions. Due to the abundance of information and the frequent introduction of new insights (Sachs, 1995), even participants who demonstrate a high opinion-leading level in an offline environment may, from time to time, come to newsgroups to seek product information and consumption advice more often than they would do in offline environments. This leads us to hypothesize that:

**H1a.** Participants with a high offline opinion-leading level engage in a higher level of opinion seeking in newsgroups than in offline communication environments.

1.3. Text-based system infrastructure

The second characteristic of newsgroups is their text-based system infrastructure—all messages are written as text (Baym, 1995). Nonverbal cues such as tones, pace, facial expressions, and body gestures are filtered out. Although some researchers argue that this cue-filtered-out effect reduces communication effectiveness (Kiesler et al., 1984), text-based communications provide participants anonymity (Parks and Floyd, 1996). This, together with the absence of any central monitoring authority, allows “shy” participants to feel more comfortable interacting with other people online than they do in face-to-face communication environments (Parks and Floyd, 1996; Rafaeli and Sudweeks, 1997). Thus, it is possible that consumers, who are largely opinion followers and hesitant to ask for product information and consumption advice in their offline community, may feel less hesitant in posting opinion-seeking questions. This leads us to hypothesize that:

**H1b.** Participants with a low offline opinion-seeking level engage in a higher level of opinion seeking in newsgroups than in offline communication environments.

1.4. Personal characteristics of newsgroup participants

The psychographic and demographic characteristics of opinion leaders have been described in offline environ-
ments. Our interest is in identifying the psychological characteristics of online opinion leaders.

Psychographically, opinion leaders tend to be more innovative than nonleaders in offline environments (Gatignon and Robertson, 1985; Myers and Robertson, 1972). Domain-specific innovativeness refers to the tendency to learn about and adopt a new product within a specific product category to generate “leading” opinions (Goldsmith and Hofacker, 1991). Although not a necessity, it is a commonly found characteristic of opinion leaders (Weimann, 1994).

Offline opinion leaders also show a higher level of personal involvement with the product (Richins and Root-Schaffer, 1988). Thus, they frequently talk about product-related issues (Feick and Price, 1987) and are highly motivated to accumulate product knowledge (Myers and Robertson, 1972). They may also show a higher level of newsgroup readership involvement (Sivadas et al., 1998), in that their involvement in a product leads to their predisposition to read just about anything and everything on a particular product in a newsgroup.

Furthermore, they are in a “public individualization” state in offline environments; that is, they conform to an existing social value system and yet are still able to be different. Thus, they feel that they stand out in a community (Maslach et al., 1985). As a whole, they believe that they possess greater knowledge and interest than others do in the community. They are more willing to voice their opinions in group situations and to evaluate other people’s opinions to influence nonleaders.

For our research, we are interested in knowing if these psychographic variables are significant in explaining newsgroup participants’ opinion-leading and -seeking levels. Therefore, we hypothesize that:

**H2a.**

(i) Domain-specific innovativeness is significant in explaining newsgroup participants’ opinion leading and seeking levels.

(ii) Personal product involvement is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

(iii) Newsgroup readership involvement is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

(iv) Public individualization is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

Demographically, offline opinion leaders, who are often willing to risk their money to try and to comment on not-yet widely diffused products, tend to be younger, better educated, and enjoy a better employment status (Myers and Robertson, 1972; Piirto, 1992). Furthermore, opinion leaders of computer products tend to be male (Morahan-Martin, 1998). Analogously, for online environments, we hypothesize that:

**H2b.**

(i) Age is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

(ii) Gender is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

(iii) Educational level is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

(iv) Employment status is significant in explaining newsgroup participants’ opinion-leading and -seeking levels.

1.5. Newsgroup postings as data

In offline environments, self-reported scales are commonly used in measuring opinion-leading and -seeking levels. They were first introduced by Rogers and Cartano (1962) and were refined by King and Summers (1970) and Childers (1986). Flynn et al. (1996) further enriched the scale by introducing a single inventory that measures opinion leading and seeking.

In online environments, we have the opportunity to actually observe participants’ opinion exchange behavior. The asynchronic temporal structure and the text-based system infrastructure of newsgroups provide us with actual posting by participants. Like any manifest behavior, writing a message in a newsgroup is “purposive and expressive of deeper values” (Marshall and Rossman, 1989). Therefore, the posted message can be used as a behavioral verification of self-reported measurements. The posted messages can be analyzed in respect of (1) the number of messages posted by a participant and (2) the content of the message.

First, opinion leaders and seekers may be differentiated by the number of messages posted. Opinion leaders must express their opinions to be influential. They may post messages more frequently than followers do. Roper (2000) reported that influential Internet users tend to send e-mail to twice as many people as noninfluential users do. Rafaeli and Sudweeks (1997) found that frequent newsgroup posters write significantly more reactive messages in reply to issues raised by other people’s messages. Therefore, we propose that:

**H3a.** The number of messages posted by a newsgroup participant is positively correlated with the participant’s self-reported opinion-leading levels.

**H3b.** The number of replies posted by a newsgroup participant is positively correlated with the participant’s self-reported opinion-leading levels.

Second, leaders and followers can be differentiated by the levels of their activities in a social network (Piirto, 1992). Leaders must express “authoritative” opinions to be influen-
tial (Chan and Misra, 1990). Thus, the higher a participant’s opinion-leading level, the more the messages posted by the participant would be related to “authoritative” and “influential” opinions. These include factual product information and subjective, personal usage experiences and/or consumption advice (Kotler, 2000). Thus, we propose that:

H3c. The number of opinion-giving messages posted by a newsgroup participant is positively correlated with the participant’s self-reported opinion-leading levels.

Finally, opinion seeking suggests a tendency to search for both factual information and product recommendations from other people (Flynn et al., 1996). This suggests that the higher a participant’s opinion-seeking level, the more the messages posted by the participant would be related to requesting product information or consumption advice. Therefore, we proposed that:

H3d. The number of opinion-seeking messages posted by a newsgroup participant is positively correlated with the participant’s self-reported opinion-seeking levels.

2. Methodologies

2.1. Newsgroup selection

We studied newsgroup participants on one of Hong Kong’s popular news servers—news.newsgroup.com.hk. Only newsgroups on product- or consumption-related activities were studied (non-consumption-related newsgroups included casual chat, political discussion, religious discussion, newsgroup administration, etc.). As a result, a total of 38 newsgroups with different product categories or consumption activities was included.

2.2. On-line survey

Invitations to participate in our online survey were posted through the newsgroup administrators of the 38 newsgroups on 9 June 2003. Respondents were directed by hyperlinks to a Web page that contained the questionnaire. One week later, nonrespondents were reinvited by individual e-mail. The cut-off date of the survey was 1 month after the invitation.

For H1a,b, we adapted batteries of established instruments (Flynn et al., 1996) to measure respondents’ self-reported opinion-leading and -seeking levels in both newsgroup and offline environments. For H2a, scales that measure psychographic characteristics including domain-specific innovativeness (Goldsmith and Hofacker, 1991), personal product involvement (Mittal, 1995), and respondents’ public individualization (Chan and Misra, 1990) were used. Following the notion of Sivadas et al. (1998), we used two attitudinal questions to measure newsgroup readership involvement: “I want to read all the posts in the newsgroup” and “I only read newsgroup posts with topics that attract me”. All measurements were standardized to seven-point scales (1=strongly disagree; 7=strongly agree).

The respondents’ major demographic attributes, which included age, gender, educational level, and employment status, were also collected.

2.3. Message coding

We then unobtrusively collected all of the messages posted by the respondents in the sampled newsgroups that were available on the server and that were dated between 16 April and 24 July 2003. For those who provided their aliases in their online questionnaires, the messages in the newsgroups with corresponding aliases were coded and matched with the returned questionnaires. The following information was recorded from each message:

(1) Average weekly number of messages posted (for H3a).
(2) Average weekly number of replies posted (for H3b).
(3) Average weekly number of postings that provided consumption related opinions (for H3c).
(4) Average weekly number of postings that asked for consumption related opinions (for H3d).

2.4. Sample characteristics

In all, a total of 223 newsgroup participants from 33 of the 38 newsgroups sent in valid responses to our questionnaire. During the time period of our study, 4674 people posted messages in these newsgroups. The newsgroups (and the distribution of the responses) were aquarium (2), “BB Senshi” Toy (7), beauty (9), B&W photography (2), book (4), comic (13), crystal (28), design (2), digital camera (3), digital video production (5), dog (7), dragon fish (1), fashion (2), fishing (2), food (16), “gloomy” toy (8), Harry Potter (9), hiking (6), illustration drawing (3), jewelry (1), Lego (14), Lord of the Rings (3), mobile phone (8), model kits (20), pet (9), photography (3), restaurant (3), smoking (3), telecommunication (3), toy (4), travel (10), wargame (6), and watch (7).

Among the respondents, 127 (57.0%) were male and 96 (43.0%) were female; their ages ranged from 15 to 54, with a mean of 24.96; 106 (48.0%) had a secondary or lower education, while 115 (52.0%) had a university or higher education, both 2 missing responses); 67 (30.3%) were students, 132 (59.7%) were working, 21 (9.5%) were unemployed, and 1 (0.5%) was retired (2 missing responses); each respondent accessed the newsgroup 5.64 days per week on average, 86 (40.6%) spent 30 min or less per week, and 42 (19.8%) spent 2 h or more reading and writing messages (11 missing responses).

2.5. Data analysis

One-tailed t test was used to compare the respondents’ opinion-seeking levels in newsgroup and offline environ-
ments (for H1a,b). Multiple regression analysis was used to test the importance of psychographics and demographics in explaining opinion leadership and seeking levels (for H2a,b). Correlation analysis was employed to verify the consistency of behavioral measures with self-reported opinion-leading/seeking levels (for H3a–d).

3. Findings

Descriptive statistics and reliabilities of the variables are reported in Table 1. The alphas ranged between .69 and .91.

3.1. Opinion-seeking levels in newsgroup and offline environments

H1a states that participants with a high offline opinion-leading level show a higher level of opinion seeking in newsgroups than in an offline environment. We tested this by dividing the respondents into two groups according to their offline opinion leading levels (low and high). Then, for the “high” group, we compared their online and offline opinion-seeking behavior. As Table 2 shows, participants with higher offline opinion-leading levels did not display significant differences in their opinion-seeking levels in the two environments. H1a is not supported.

Next, to test H1b, we divided the respondents into two groups according to their offline opinion-seeking levels. We found that participants with a low level of offline opinion-seeking engaged in a higher level of opinion seeking in newsgroups than in an offline environment (3.8 vs. 3.1, \(P \leq .01\)). Thus, H1b is supported.

3.2. Characteristics of newsgroup participants as opinion leaders and seekers

H2a,b states that psychographic and demographic characteristics are significant in explaining newsgroup partic-

<table>
<thead>
<tr>
<th>Scale</th>
<th>Opinion-leading and -seeking levels (Flynn et al., 1996)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Offline opinion leading level</td>
</tr>
<tr>
<td>2</td>
<td>Newsgroup opinion leading level</td>
</tr>
<tr>
<td>3</td>
<td>Offline opinion seeking level</td>
</tr>
<tr>
<td>4</td>
<td>Newsgroup opinion seeking level</td>
</tr>
</tbody>
</table>

Psychographic variables

<table>
<thead>
<tr>
<th>5</th>
<th>Domain-specific innovativeness (Goldsmith and Hofacker, 1991)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Personal product involvement (Mittal, 1995)</td>
</tr>
<tr>
<td>7</td>
<td>Newsgroup readership involvement (Chan and Misra, 1990)</td>
</tr>
<tr>
<td>8</td>
<td>Public individualization</td>
</tr>
</tbody>
</table>

Table 1: Online survey scales* and reliabilities

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>S.D.</th>
<th>(\alpha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.2</td>
<td>1.06</td>
<td>.76</td>
</tr>
<tr>
<td>2</td>
<td>3.9</td>
<td>0.98</td>
<td>.69</td>
</tr>
<tr>
<td>3</td>
<td>4.0</td>
<td>1.32</td>
<td>.86</td>
</tr>
<tr>
<td>4</td>
<td>4.2</td>
<td>1.35</td>
<td>.84</td>
</tr>
<tr>
<td>5</td>
<td>3.7</td>
<td>1.12</td>
<td>.72</td>
</tr>
<tr>
<td>6</td>
<td>5.7</td>
<td>1.19</td>
<td>.90</td>
</tr>
<tr>
<td>7</td>
<td>4.2</td>
<td>1.73</td>
<td>.73</td>
</tr>
<tr>
<td>8</td>
<td>4.4</td>
<td>1.19</td>
<td>.91</td>
</tr>
</tbody>
</table>

*All scales are seven-point scales (1=lowest; 7=highest).

ipants’ opinion-leading and -seeking levels. To test this, we ran four separate regressions, one for each of the offline and newsgroup opinion-leading and -seeking levels as dependent variables, with psychographic and demographic variables as independent variables (see Table 3).

We found that all four psychographic variables are significant in explaining newsgroup participants’ opinion-leading and -seeking levels in both newsgroup and offline environments. Specifically, domain-specific innovativeness is positively related to opinion leading but negatively related to opinion seeking in both environments; personal product involvement is positively related to leading and seeking in both environments; newsgroup readership involvement is positively related to opinion leading and seeking in newsgroup, but negatively related to opinion leading and seeking in offline environments; and public individualization is positively related to all situations, except opinion seeking in newsgroups. As a whole, H2a, which suggests that psychographic variables are significant in explaining newsgroup participants’ opinion-leading and -seeking levels, is supported.

Our tests of demographic variables provided less consistent results. Only employment status and gender are significant in explaining some of the dependent variables (see Table 3). H2b, which suggests that demographic variables are significant in explaining newsgroup participants’ leading and seeking levels, is not supported.

3.3. Newsgroup participants’ opinion-leading and -seeking behavior

H3a–d proposes that newsgroup participants’ opinion-leading and -seeking behaviors are consistent with their self-reported opinion-leading and -seeking levels. As shown in Table 4, the respondents’ average number of weekly postings (\(r = .16, P < .05\)), replies (\(r = .16, P < .05\)), and opinion-giving messages (\(r = .15, P < .05\)) are all positively correlated with their newsgroup opinion-leading levels. Thus, H3a, H3b, and H3c are supported.

Our results do not support H3d, which proposes that the number of opinion-seeking messages posted by a news-
group participant is positively correlated with the participant’s self-reported opinion-seeking levels.

4. Discussion

To the best of our knowledge, this is the first piece of research reporting that (1) when seeking consumption-related opinions, offline opinion leaders rely about as much on offline sources as they do on newsgroup environments; and (2) newsgroup participants, who rely less on offline environments when seeking opinions, tend to rely more on newsgroups when doing so.

While a generalization of these findings is not possible due to the relatively small sample size used in the study, the insight of the findings is still considered useful for marketers. First, opinion leaders—who are interested in searching and getting product information or advice from as many sources as possible to develop the broadest knowledge base possible so that they may, in turn, consequently reach and influence other consumers (Rogers, 1995)—are using newsgroups as a source. This suggests that newsgroups can serve as a valuable new and easily accessible channel for marketers to use in reaching and influencing opinion leaders. In addition, if consumers who show a low level of offline opinion seeking find it more comfortable and relaxing to seek opinions in newsgroups, newsgroups can be a good place for marketers to reach and influence them as well.

However, marketers should be cautious in initiating contact with consumers via newsgroups. Many users view newsgroups as “meccas for noncommercial conversations”; thus, commercial messages are viewed as spamming and are a major, arbitrary, unwelcome intrusion. To avoid resentment, marketers may first seek permission from online opinion-leading participants to contact them to provide “insider” product information and “exclusive” promotional items. Afterwards, marketers may consider forging a long-term relationship with them by activities such as inviting them to be members of consumer panels or beta testers of new products. If handled properly, these strategies can turn opinion-leading newsgroup participants into “positive information brokers”.

We found that psychographics are significant in describing newsgroup participants’ opinion-leadingseeking levels,
while demographics do not show consistent significance. Sivadas et al. (1998) also reported that demographics are not effective in segmenting newsgroup users. These findings can be useful for marketers who are interested in identifying opinion leaders in newsgroups. Marketers can consider using surveys similar to the one used in our study to identify opinion leaders by including such factors as domain-specific innovativeness, personal product involvement, newsgroup readership involvement, and public individualization in their survey instruments. Because they attract opinion leaders' attention, marketers can also emphasize these factors when they formulate communication messages targeted at them.

Newsgroups are one of the few places where consumer “online conversations” are recorded and can be observed and accessed publicly. Analysis of these conversations can help marketers gain insight into the true behavior of newsgroup participants as opinion leaders or seekers, an insight that may be difficult to gain elsewhere. By coding the messages posted by our respondents, we found that participants’ newsgroup opinion-leading behaviors are consistent with their self-reported opinion-leading and -seeking levels. Self-reporting attitudinal measurements are, to a large extent, efficient and effective in revealing how respondents perceived their own opinion-leading and -seeking propensities. However, they may sometimes be biased by the respondents’ self-image (Rogers, 1995); therefore, marketers can use message coding of newsgroups as a method of triangulation to complement the information collected from self-reported methods for a more comprehensive understanding of their newsgroup users.

4.1. Limitations and recommendations for future research

One limitation of our study is that we did not separate factual information from subjective comments in the messages we coded. They were both treated as “opinions”. This was because a newsgroup participant may provide/request both product information and comments in the same posting and thus complicate the coding process. Future research may use the sentence as the unit of analysis. We would also like to point out that we did not measure “lurking”, i.e., the behavior of visiting a newsgroup not for posting opinions or questions but simply for reading opinions. Thus, opinion seeking has been somewhat underestimated in our behavior counts.

Newsgroups are a complicated social ecology where participants influence and are influenced by one another. As pointed out previously, newsgroups are both an interpersonal and a printed mass communication media. This challenges the traditional thinking of a two-step-flow marketing communication process, in which marketers reach and influence opinion leaders first, who subsequently reach and influence target customers. Future research can address the following questions: If marketers can reach opinion leaders and seekers simultaneously in newsgroups, how will the role and importance of opinion leader change, and can the same message be used to reach and influence them effectively?

To answer research questions like these, multiple data collection methods, in addition to or other than the ones used in our study, can be used to triangulate the results. These include ethnographic studies and in-depth interviews. Researchers can also ask respondents to identify people who have the most influence on their consumption decisions in newsgroups. For a more comprehensive portrayal of consumers’ opinion leadership and seeking propensities and behavior, a pencil-and-paper survey can also be conducted in offline environments, asking respondents to report their opinion-leading and -seeking tendencies in both communication settings.

5. Conclusion

Newsgroups are still largely uncharted waters for marketers. Our basic proposition for the study was that people exercise opinion leading and seeking differently in newsgroup and in offline communication environments. We found that opinion leaders are also opinion seekers—offline opinion leaders have comparable reliance on offline and newsgroup environments in seeking consumption-related opinions. We also found that newsgroup participants who rely less on offline environments when seeking opinions tend to rely more on newsgroups. In addition, we reaffirmed previous findings that psychographic variables are more useful than are demographics in describing the characteristics of newsgroup participants. Furthermore, we analyzed messages posted by newsgroup participants, which serve as a behavioral verification of the commonly used self-reported opinion leadership and seeking measurement methods. We recommend marketers to use newsgroups for identifying and influencing opinion leaders. Product information may be disseminated to opinion leaders online, but making contacts with them in offline environments are also important. Most of all, we recommend that, for a better identification of opinion leaders, marketers should spend more effort in an in-depth assessment of the psychographics of and the messages posted by newsgroup participants.

Acknowledgements

Both authors contributed equally to this work. Financial assistance of a Small Research Grant by City University of Hong Kong is acknowledged.

References
