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## **The Power of Reach and Frequency In the Age of Digital Advertising: Offline and Online Media Demand Different Metrics**

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### **INTRODUCTION**

In recent years, the Internet has become a mainstream medium for advertisers. The number of media outlets and advertising formats has expanded rapidly and aggressively and continues to expand; patterns of media consumption have constantly changed; and syndicated research firms have come to provide marketers with more—and more sophisticated—data (Turk and Katz, 1992; Edelman, 2007; Plummer, 2007; Kelley and Jugenheimer, 2008).

Each of the changes poses serious challenges for media planners. And, with the massive increase in the amount (and type) of data available, it would be logical that the ways media practitioners handle media-planning tasks should have changed in the past decade as well.

Unfortunately, very little is known about current practices in—and perceptions of—the state of media planning. Recent media-planning literature simply does not address such questions such as how planners evaluate alternative media schedules or how they have reacted to recent major changes in the planning profession.

The most recent in-depth survey of media directors to provide a picture of how media planning tasks are handled is more than 15 years old (Leckenby and Kim, 1994). Since that study, there has been only a handful of research on the practices of media planners; what has appeared has largely focused on a specific medium, such as the Internet (Shen, 2002) or newspapers (Reid, King, and Morrison, 1996). And, most often, that work has investigated the opinions of advertisers, rather than agency-

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side media specialists (King, Reid, and Macias, 2004). Such analysis points to the need for a comprehensive assessment of media-planning practice.

This study addresses the gap in understanding perceptions of current practices in media planning. Specifically, it updates and extends the Leckenby and Kim (1994) paper, “How Media Directors View Reach/Frequency Estimation: Now and a Decade Ago,” in the *Journal of Advertising Research*. To that end, the authors have surveyed senior media directors regarding various issues related to the factors used in evaluating alternative media schedules and the usage and perceptions of reach-and-frequency estimation models for both off- and online media.

## BACKGROUND

As media options expand and marketing-related data continue to proliferate, planners require new tools to make recommendations and to conduct cost–benefit analyses that justify these choices.

Traditionally, some of the planners’ key tools have been models that estimate reach-and-frequency distributions (Leckenby and Kishi, 1982; Leckenby and Boyd, 1984; Leckenby and Kim, 1994). Indeed, surveys of ad practitioners on both the client and agency sides in the 1980s and 1990s showed that reach and frequency were two of the most significant factors/criteria considered when selecting media (King and Reid, 1997; Kreshel, Lancaster, and Toomey, 1985; Leckenby and Kim, 1994; Leckenby and Kishi, 1982; Nowak, Cameron, and Krugman, 1993). The importance of reach-and-frequency distribution estimates is heightened by increased usage of the concept of “effective reach and frequency” among both practitioners and academicians (Kreshel et al., 1985; Turk and Katz, 1992).

Effective reach and effective frequency analyses represent two perspectives on the same issue. Effective frequency asks how many exposures are needed for an ad to become “effective”; effective reach addresses the number of people who are exposed at that level (Cannon and Riordan, 1994).

Over time, effective frequency planning (EFP) has represented the process through which media planners put effective reach and frequency into practice. It has become an integral—even dominant—part of media-planning culture and procedures and, in fact, was the dominant media-planning paradigm (Kreshel et al., 1985; Leckenby and Kim, 1994; Cannon, 2001). EFP has been criticized, however, for at least two reasons:

- Its crude rules of thumb—seemingly arbitrary standards such as considering 3+ exposures as effective
- Its naïve theory that advertising must be subject to a threshold effect, reflected in an S-shaped advertising response curve (Stankey, 1989), when practice, response curves tend to be concave, characterized by continually diminishing returns (Schultz and Block, 1986).

These major shortcomings of EFP are addressed in the recent media planning frameworks, such as Cannon and Riordan’s 1994 “Optimal Frequency Planning” (OFP) and the concept of “Frequency Value Planning” (FVP; Cannon, 2001; Cannon, Leckenby, and Abernethy, 2002). The central idea of OFP and FVP is to weight every level of exposure in the frequency distribution with the probability that each level of advertising exposure will have impact on consumers, as demonstrated by the advertising response curve.

There are currently numerous proprietary and nonproprietary models by which planners may estimate reach-and-frequency distributions for different media. Firms such as Telmar and Interactive Media Solutions (IMS) provide computer programs to

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implement these models and analyze the large-scale media databases developed by Nielsen, Simmons, Mediamark, and others (Leckenby and Kishi, 1982).

Among academicians, considerable work has been conducted on the development of reach-and-frequency estimation models for different media (Leckenby and Kishi, 1984; Leckenby and Rice, 1985; Rust and Leone, 1984; Danaher, 1991; Kim, 1994), with past studies revealing that the majority of the leading advertising agencies in the United States were using at least one computerized model to estimate reach-and-frequency distributions (Leckenby and Kishi, 1982; Leckenby and Boyd, 1984; Leckenby and Kim, 1994).

These studies also showed that most media directors believed at least some improvements in reach-and-frequency estimation models were required. Little is known, however, regarding whether (and to what extent) the use and perceptions of reach-and-frequency distribution have changed among media planners with the advent of the Internet as a significant advertising medium. Digital marketing had not gained sufficient momentum or attention to be included in the published research from the 1980s and 1990s. More-recent work primarily has focused on the effectiveness/efficiency of the online reach-and-frequency data itself and not industry practices.

With changes in the media environment and data availability since the mid-1990s, the application and perceptions of models for reach-and-frequency distribution estimates may have changed. In line with this thinking, the present study is intended to replicate and expand upon the series of studies by Leckenby and colleagues (1982, 1984, 1994) and to assess media directors' perception of models for estimating reach-and-frequency distributions for both offline media and online media.

It also will be useful to determine whether there have been changes in the factors used to evaluate alternative media schedules.

## RESEARCH QUESTIONS

The current study addresses the gap in understanding media directors' perception of models for estimating reach-and-frequency distributions and the criteria used to evaluate alternative media plans by the following:

- Utilizing the Leckenby and Kishi (1982) and Leckenby and Kim (1994) studies as guiding frameworks
- Assessing practitioner viewpoints among a sample of large-agency, senior-level media directors.

Understanding practitioner opinions is important in that it provides an indication of the concerns and practices of the industry and potential future directions for academic research. Specifically, the following research questions will be examined:

- Which factors do media directors use when evaluating alternative media schedules?
- How much importance do media directors place on particular factors when evaluating alternative media schedules?
- Which reach-and-frequency estimation models do media directors commonly use when developing reach-and-frequency distribution estimates?
- How accurate do media directors consider the reach-and-frequency distribution models used by their agencies to be?
- How satisfied are media directors with the reach-and-frequency estimation models used by their agencies?
- How much improvement do media directors perceive the reach-and-frequency distribution models used by their agencies to be in need of?

## METHODOLOGY

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## *Sample*

The current study relied on a Web-based survey. As there is no single comprehensive directory of media directors/planners in the United States, a sampling frame of e-mail addresses was constructed from the “Advertising Red Books” online database ([www.redbooks.com](http://www.redbooks.com)).

The respondents of interest were U.S.-based media directors who worked in advertising agencies with annual billings of \$1 million or more. E-mail contacts for the sample were found using the Red Books database to search for such titles as “media director,” “media account director,” and “group account media director” When multiple persons were listed for a particular agency, only one e-mail address was selected (note that not all agencies included the names and/or e-mail contacts for their media directors). After filtering for agencies with less than \$1 million in annual billings and those that provided the names and e-mail addresses of their media directors, a final list of 584 potential respondents from a sample of agencies ranging in U.S. billings from \$1 million to \$1.9 billion was created. Mean number of employees at the agencies is 58.2, with a range from 2 to 1,471.

## **Measures**

The questionnaire was developed based mostly on existing studies of traditional media (Leckenby and Kishi, 1982; Leckenby and Kim, 1994) and on more recent work that had considered Internet-specific items (Shen, 2002). In addition to respondents’ personal characteristics and information about their agencies, the questionnaire consisted of four main parts:

- Several questions were posed to determine the criteria used in evaluating both online and offline media. “Online” media in the survey referred to Internet-based advertising forms; “offline” media designated TV, radio, magazine, newspaper, and outdoor forms.
- Several items assessed the importance of those criteria in overall media evaluation, followed by several items to ascertain the types of people who most commonly request reach-and-frequency distribution data.
- Several items were included to determine the specific reach-and-frequency estimation models used by the respondents’ agencies.
- A series of items dealt with the issue of model performance from the standpoints of estimation accuracy and perceived need for model improvement.

An industry expert with more than 10 years of experience in advertising-agency media planning evaluated the initial version of the questionnaire. Based on her feedback, the questionnaire was revised and finalized, and the survey Web site was developed.

## **Procedure**

Personalized e-mail invitations to participate in the survey were sent to those in the list of 584 potential respondents. A note briefly explained the nature of the study and its importance, a clickable link to access the questionnaire, and a second link to opt out of participation. Invitations were sent individually—not as part of a mass e-mail—and each invitation was personalized with the first name of each potential participant to increase response rates (Heerwegh, 2005). An e-mail reminder followed every 2 weeks for 6 weeks after the initial invitation using a similar combination of personalization and individual messages.

Upon clicking on the link to participate in the study, participants were taken to a page that served as the consent form. Clicking

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on “Next” at the bottom of the page indicated their consent to participate. The questions for the study were spread across a series of Web pages for ease of presentation, with respondents clicking on “Next” at the bottom of each page to progress through the study.

## RESULTS

### *Profile of Respondents*

A total of 104 media directors completed the survey, resulting in a response rate of 17.8 percent. The response rates of two similar previous studies were 33.3 percent (Leckenby and Kim, 1994) and 45.4 percent (Leckenby and Kishi, 1982).

The lower response rate in the current study may be a result of conducting an online survey, whereas the previous two surveys were delivered by mail. It has been the general tendency for response rates of online studies to be somewhat lower than comparable mail surveys (Couper, Blair, and Triplett, 1997). For example, a summary of the response rates of a host of Web-based surveys in 1999 showed that the majority were in the 15- to 29-percent range.

Despite such typically low response rates, empirical comparisons indicate that online surveys do provide more complete information than conventional mail-in surveys, so the quality of the data is not sacrificed (Bachmann, Elfrink, and Vazzana, 1996; Mehta and Sivadas, 1995; Schaefer and Dillman, 1998). In addition, an indication that media directors’ interest in this study had increased substantially from the previous survey was evidenced by 96 percent of the respondents requesting the results of the study, compared to 69.8 percent in the 1994 study (Leckenby and Kim, 1994).

Of the media directors who responded to the survey, more than 87 percent worked for full-service advertising agencies; the balance worked for media-planning/buying agencies. Although the response rate was relatively small, it appears that respondents represented a diverse sample of agencies, with a range of U.S. billings from \$1 million to \$1.5 billion. Approximately half the agencies managed more than \$100 million in billings. Approximately 30 percent of the respondents were from agencies that had less than \$50 million in billings, and 10 percent of the respondents were from agencies billing more than \$500 million per year.

On average, the agencies that employed the media directors had been in operation for 25 years. Mean number of employees at those agencies was 68.5, with a range from 7 to 650. Compared to the sampling frame of all agencies in the sample, medium and large agencies were more likely to respond to the survey. Most of the participants were senior VP/media director, VP/media director, or media director (67.4 percent; See Table 1). Furthermore, the respondents had an average of 20 years’ experience in media planning. The median age of respondents was 46 years (with a range from 25 to 62), and the sample was composed of approximately 31 percent male and 67 percent female respondents. More than 83 percent had college degrees, and 10.1 percent had a masters’ degree or higher.

**TABLE 1****Titles of Survey Participants**

| <b>Title</b>                       | <b>'08<br/>(percent)</b> | <b>'94<br/>(percent)<sup>a</sup></b> |
|------------------------------------|--------------------------|--------------------------------------|
| Senior VP/Media Director           | 16 (15.4)                | 11 (17.5)                            |
| VP/Media Director                  | 20 (19.3)                | 12 (19.0)                            |
| Media Director                     | 34 (32.7)                | 26 (41.2)                            |
| Media Planner/<br>Manager          | 9 (8.7)                  | 3 (4.8)                              |
| VP/Director Media<br>Research      | —                        | 2 (3.2)                              |
| Manager/Director<br>Media Research | 6 (5.7)                  | 3 (4.8)                              |
| Media/Marketing<br>Director        | —                        | 3 (4.8)                              |
| Other titles                       | 13 (12.5)                | 3 (4.8)                              |
| Non-response                       | 6 (5.7)                  | —                                    |
| Total                              | 104 (100.0)              | 63 (100.0)                           |

*Note: <sup>a</sup>Findings from Leckenby and Kim (1994)*

**Evaluating Media Options**

Respondents were provided with a predetermined list of factors that might be used to evaluate media options as part of campaign development. (They also were offered a formal option to add additional factors.) Each respondent was requested to check as many factors as their agency uses in evaluating offline and online media. As shown in Table 2, a total of 11 and 19 factors were used for offline and online media, respectively; see Table 2; Leckenby and Kishi, 1982, Leckenby and Kim 1994; Shen, 2002).

**TABLE 2****Factors Used in Evaluation of Online and Offline Media**

| <b>Factors</b>               | <b>Offline</b>           |                                      |                      | <b>Online</b>            |                      |
|------------------------------|--------------------------|--------------------------------------|----------------------|--------------------------|----------------------|
|                              | <b>'08<br/>(percent)</b> | <b>'94<br/>(percent)<sup>a</sup></b> | <b>Z<sup>b</sup></b> | <b>'08<br/>(percent)</b> | <b>Z<sup>c</sup></b> |
| Reach                        | 74 (92.5)                | 51 (81.0)                            | 2.07*                | 31 (42.5)                | 6.66**               |
| CPM to target market         | 74 (92.5)                | 49 (77.8)                            | 2.52*                | 67 (90.5)                | 0.44                 |
| Qualitative factors          | 73 (94.8)                | 49 (77.8)                            | 2.99**               | 67 (91.8)                | 0.74                 |
| Total schedule cost          | 74 (93.7)                | 49 (77.8)                            | 2.76**               | 66 (89.2)                | 0.99                 |
| Frequency distribution       | 58 (74.4)                | 47 (74.6)                            | 0.03                 | 31 (42.5)                | 3.98**               |
| GRPs                         | 63 (80.8)                | 46 (73.0)                            | 1.09                 | 16 (21.9)                | 7.24**               |
| Average frequency            | 65 (85.5)                | 46 (73.0)                            | 1.83                 | 32 (43.8)                | 5.43**               |
| Effective reach              | 67 (84.8)                | 43 (68.3)                            | 2.35*                | 35 (47.3)                | 4.92**               |
| Continuity                   | 54 (70.1)                | 41 (65.1)                            | 2.02                 | 48 (65.8)                | 0.57                 |
| Quintile analysis            | 32 (41.6)                | 37 (58.7)                            | 2.02                 | 20 (27.4)                | 1.82                 |
| Media type budget allocation | 51 (64.6)                | 32 (50.8)                            | 1.65                 | 49 (66.2)                | 0.22                 |
| Online purchase rate         | —                        | —                                    |                      | 47 (63.5)                |                      |
| Click-through rate           | —                        | —                                    |                      | 73 (97.3)                |                      |
| Unique visitors              | —                        | —                                    |                      | 70 (94.6)                |                      |
| Visitor duration             | —                        | —                                    |                      | 59 (80.0)                |                      |
| Hits                         | —                        | —                                    |                      | 46 (62.2)                |                      |
| Page-views                   | —                        | —                                    |                      | 69 (92.0)                |                      |
| Ad impressions               | —                        | —                                    |                      | 72 (96.0)                |                      |
| Cost per action/outcome      | —                        | —                                    |                      | 63 (87.5)                |                      |

Note: <sup>a</sup>Findings from Leckenby and Kim (1994), \* $p < 0.05$ ; \*\* $p < 0.01$ .

<sup>b</sup>Comparison with Leckenby and Kim (1994) of proportions of factors used for offline media evaluation.

<sup>c</sup>Comparison with proportions of factors used for online media evaluation.

For the factors used to evaluate offline media, the proportion of agencies using each criterion has increased significantly, compared to Leckenby and Kim's 1994 analysis:

- "Reach" increased by 11.5 percent ( $z = 2.07$ ,  $p < 0.05$ )
- "Cost per thousand (CPM) to target market" increased by 14.7 percent ( $z = 2.52$ ,  $p < 0.05$ )
- "Qualitative factors" increased by 17 percent ( $z = 2.99$ ,  $p < 0.01$ )
- "Total schedule cost" increased by 15.9 percent ( $z = 2.75$ ,  $p < 0.01$ )
- "Effective reach" increased by 16.5 percent ( $z = 2.35$ ,  $p < 0.05$ ).

Consistent with the 1994 findings of Leckenby and Kim, the factors most often mentioned as being used in media evaluation were as follows:

- "Reach (92.5 percent)
- "CPM to target market" (92.5 percent)
- "Qualitative factors" (94.8 percent)

- “Total schedule cost” (93.7 percent).

Notably, the proportion of respondents mentioning “effective reach” has significantly increased by 16.5 percent from the 1994 study.

Three factors often mentioned as being used for offline media also were found to be used by a majority of the agencies for online media:

- “CPM to target market” (90.5 percent)
- “Qualitative factors” (91.8 percent)
- “Total schedule cost” (89.2 percent).

Despite those consistencies, however, the proportion of some of the most popular online-media factors were not as popular for online media:

- “Reach” decreased by 50 percent ( $z = 6.66, p < 0.01$ )
- “Frequency distribution” decreased by 31.9 percent ( $z = 3.98, p < 0.01$ )
- “GRPs” decreased by 58.9 percent ( $z = 7.24, p < 0.01$ )
- “Average frequency” decreased by 41.7 percent ( $z = 5.43, p < 0.01$ )
- “Effective reach” decreased by 37.5 percent ( $z = 4.92, p < 0.01$ ).

For the factors specifically listed with regards to online media, “click-through rate” (97.3 percent), “unique visitors” (94.6 percent), “page views” (92.0 percent), and “ad impressions” (96.0 percent) were mentioned most often.

Using a five-point scale anchored by “very important (5)” and “not at all important (1),” respondents further were asked to indicate the degree of importance they attributed to each factor they checked previously (See Table 3).

**TABLE 3**  
The Importance of Factors Used in Media Evaluation

|                      | Offline Media    |                      |      |               |     |     |      | Online Media         |      |      |               |     |      |  |
|----------------------|------------------|----------------------|------|---------------|-----|-----|------|----------------------|------|------|---------------|-----|------|--|
|                      | Very Important   |                      |      | Not Important |     |     |      | Very Important       |      |      | Not Important |     |      |  |
|                      | Yr.              | (5)                  | (4)  | (3)           | (2) | (1) | M    | (5)                  | (4)  | (3)  | (2)           | (1) | M    |  |
| Reach                | '08              | 53.3                 | 36.6 | 6.6           | 3.3 | 0.0 | 4.40 | 30.0                 | 23.3 | 26.7 | 20.0          | 0.0 | 3.63 |  |
|                      | '94 <sup>a</sup> | 47.6                 | 28.6 | 4.8           | 0.0 | 0.0 | 4.50 | —                    | —    | —    | —             | —   | —    |  |
|                      |                  | $t(128) = -1.07$     |      |               |     |     |      | $t(156) = 4.95^{**}$ |      |      |               |     |      |  |
| CPM to target market | '08              | 50.0                 | 43.6 | 1.3           | 0.0 | 1.3 | 4.48 | 54.2                 | 34.7 | 1.4  | 2.8           | 0.0 | 4.51 |  |
|                      | '94 <sup>a</sup> | 31.8                 | 38.1 | 9.5           | 1.6 | 0.0 | 4.20 | —                    | —    | —    | —             | —   | —    |  |
|                      |                  | $t(124) = 2.05^{*}$  |      |               |     |     |      | $t(140) = -0.26$     |      |      |               |     |      |  |
| Qualitative factors  | '08              | 64.5                 | 31.6 | 0.0           | 0.0 | 0.0 | 4.67 | 75.0                 | 16.7 | 2.8  | 0.0           | 0.0 | 4.76 |  |
|                      | '94 <sup>a</sup> | 30.2                 | 33.3 | 14.3          | 0.0 | 1.6 | 4.10 | —                    | —    | —    | —             | —   | —    |  |
|                      |                  | $t(121) = 3.99^{**}$ |      |               |     |     |      | $t(139) = -1.15$     |      |      |               |     |      |  |
| Total schedule cost  | '08              | 61.5                 | 28.2 | 3.8           | 2.6 | 0.0 | 4.55 | 58.9                 | 26.0 | 6.8  | 0.0           | 1.4 | 4.51 |  |
|                      | '94 <sup>a</sup> | 46.0                 | 12.7 | 17.5          | 1.6 | 0.0 | 4.30 | —                    | —    | —    | —             | —   | —    |  |
|                      |                  | $t(122) = 1.52$      |      |               |     |     |      | $t(141) = 0.26$      |      |      |               |     |      |  |

|                              |                  | $t(144) = 1.05$      |      |      |      |     |      | $t(141) = 0.20$     |      |      |     |     |      |
|------------------------------|------------------|----------------------|------|------|------|-----|------|---------------------|------|------|-----|-----|------|
| Frequency distribution       | '08              | 23.4                 | 45.5 | 3.9  | 5.2  | 2.6 | 4.02 | 13.0                | 35.2 | 5.8  | 1.4 | 2.9 | 3.92 |
|                              | '94 <sup>a</sup> | 34.9                 | 25.4 | 14.3 | 3.2  | 0.0 | 4.20 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(108) = -0.95$     |      |      |      |     |      | $t(101) = 0.47$     |      |      |     |     |      |
| GRPs                         | '08              | 46.8                 | 31.2 | 5.2  | 5.2  | 0.0 | 4.35 | 7.2                 | 15.9 | 10.1 | 5.8 | 2.9 | 3.45 |
|                              | '94 <sup>a</sup> | 38.1                 | 19.1 | 12.7 | 4.8  | 3.2 | 4.10 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(115) = 1.49$      |      |      |      |     |      | $t(95) = 3.82^{**}$ |      |      |     |     |      |
| Average frequency            | '08              | 38.2                 | 42.1 | 3.9  | 2.6  | 2.6 | 4.45 | 17.4                | 31.9 | 7.2  | 2.9 | 1.4 | 4.00 |
|                              | '94 <sup>a</sup> | 28.6                 | 19.1 | 22.1 | 4.8  | 0.0 | 4.00 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(109) = 3.48^{**}$ |      |      |      |     |      | $t(108) = 1.33$     |      |      |     |     |      |
| Effective reach              | '08              | 60.3                 | 23.1 | 2.9  | 2.6  | 2.6 | 4.50 | 27.5                | 23.2 | 5.8  | 1.4 | 1.4 | 4.24 |
|                              | '94 <sup>a</sup> | 41.3                 | 19.1 | 6.4  | 1.6  | 0.0 | 4.50 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(112) = 0.17$      |      |      |      |     |      | $t(110) = 1.40$     |      |      |     |     |      |
| Continuity                   | '08              | 24.0                 | 40.0 | 9.3  | 4.0  | 1.3 | 4.03 | 18.6                | 41.4 | 14.3 | 0.0 | 0.0 | 4.06 |
|                              | '94 <sup>a</sup> | 19.1                 | 25.3 | 22.2 | 1.6  | 1.6 | 3.80 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(101) = 1.06$      |      |      |      |     |      | $t(109) = -0.16$    |      |      |     |     |      |
| Quintile analysis            | '08              | 6.9                  | 34.7 | 6.9  | 1.4  | 4.2 | 3.72 | 8.7                 | 21.7 | 7.2  | 1.4 | 2.9 | 3.76 |
|                              | '94 <sup>a</sup> | 11.1                 | 23.8 | 12.7 | 12.7 | 6.4 | 3.31 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(79) = 1.63$       |      |      |      |     |      | $t(66) = -0.16$     |      |      |     |     |      |
| Media type budget allocation | '08              | 20.0                 | 34.7 | 10.7 | 8.0  | 2.7 | 3.81 | 19.7                | 36.6 | 12.7 | 7.0 | 1.4 | 3.85 |
|                              | '94 <sup>a</sup> | 17.5                 | 7.9  | 9.5  | 14.3 | 3.2 | 3.40 | —                   | —    | —    | —   | —   | —    |
|                              |                  | $t(88) = 1.48$       |      |      |      |     |      | $t(110) = -0.25$    |      |      |     |     |      |
| Online purchase rate         | '08              | —                    | —    | —    | —    | —   | —    | 40.8                | 22.5 | 5.6  | 2.5 | 1.4 | 4.35 |
| Click-throughs               | '08              | —                    | —    | —    | —    | —   | —    | 71.2                | 24.7 | 4.1  | 0.0 | 0.0 | 4.67 |
| Unique visitors              | '08              | —                    | —    | —    | —    | —   | —    | 65.3                | 29.2 | 1.4  | 0.0 | 0.0 | 4.67 |
| Visitor duration             | '08              | —                    | —    | —    | —    | —   | —    | 31.0                | 47.9 | 5.6  | 1.4 | 1.4 | 4.20 |
| Hit                          | '08              | —                    | —    | —    | —    | —   | —    | 21.4                | 42.9 | 8.6  | 0.0 | 1.4 | 4.12 |
| Page-views                   | '08              | —                    | —    | —    | —    | —   | —    | 36.6                | 50.7 | 4.2  | 5.6 | 0.0 | 4.21 |
| Ad impressions               | '08              | —                    | —    | —    | —    | —   | —    | 71.8                | 25.4 | 1.4  | 0.0 | 0.0 | 4.71 |
| Cost per action              | '08              | —                    | —    | —    | —    | —   | —    | 73.2                | 18.3 | 1.4  | 0.0 | 0.0 | 4.77 |

Note: <sup>a</sup>Findings from Leckenby and Kim (1994), \* $p < 0.05$ ; \*\* $p < 0.01$

The most notable finding is that “CPM to target market,” “qualitative factors,” and “average frequency” received the significantly higher mean importance scores of 4.48, 4.67, and 4.45 apiece, respectively—increases from the 1994 study of 4.20 ( $t = 2.05$ ,  $p < 0.05$ ), 4.10 ( $t = 3.99$ ,  $p < 0.01$ ), and 4.00 ( $t = 3.48$ ,  $p < 0.01$ ).

The perceived importance rating of “total schedule cost” rose to 4.55, from 4.30 in 1994—a possible indication of the

increasing client-side demand on accountability. For online media, “cost per action/outcome” (4.77), “qualitative factors” (4.76), “ad impressions” (4.71), “click-through rate” (shortened to “click-throughs” in Table 3 owing to space limitations) (4.67), and “unique visitors” (4.67) were the five most important factors.

The survey also found that factors with a history in offline media evaluation—for example, “reach” (3.63) and “GRPs” (4.51)—scored significantly lower in the importance ratings, which had decreased from 4.40 ( $t = 4.95, p < 0.01$ ) and 4.35 ( $t = 3.82, p < 0.01$ ), respectively, for online media. This indicates either a lack of faith in the measurement tools for online media and/or a lack of proper measurement tools (See Table 4).

**TABLE 4**

**Top Five Media Selection Criteria by Usage Frequency and Importance Ratings**

**Top Five Factors by Usage Frequency**

| 1994 Offline              | 2008 Offline            | 2008 Online            |
|---------------------------|-------------------------|------------------------|
| 1. Reach                  | 1. Qualitative factors  | 1. Click-throughs      |
| 2. CPM to target market   | 2. Total schedule cost  | 2. Ad impressions      |
| 3. Qualitative factors    | 3. Reach                | 3. Unique visitors     |
| 4. Total schedule cost    | 4. CPM to target market | 4. Page views          |
| 5. Frequency distribution | 5. Effective reach      | 5. Qualitative factors |

**Top Five Factors by Perceived Importance**

| 1994 Offline              | 2008 Offline            | 2008 Online            |
|---------------------------|-------------------------|------------------------|
| 1. Reach                  | 1. Qualitative factors  | 1. Cost per action     |
| 2. Effective reach        | 2. Total schedule cost  | 2. Qualitative factors |
| 3. Total schedule cost    | 3. Effective reach      | 3. Ad impressions      |
| 4. CMP to target market   | 4. CMP to target market | 4. Click-throughs      |
| 5. Frequency distribution | 5. Reach                | 5. Unique visitors     |

Note: Because of equal percentages or mean scores, the ties (equal ranks) are observed.

The definition of “effective reach” may vary from one time period to another owing to the changes in media technology and environment. Therefore, the 67 respondents who indicated they used “effective reach” for either offline or online media evaluation in this study were asked how their agencies defined the term “effective reach.”

The most frequent definition of effective reach was “effective number of frequency exposure” (90.5 percent). Almost one-third (31.3 percent) specifically defined it as a minimum frequency exposure of three or more. Other answers offered interesting insights as well. One respondent noted that effective reach depends on unique visitors within geographic or other demographic boundaries as defined by target audience and syndicated research available. Another wrote, “We believe that 50 percent reach at a 3+ frequency is the minimum for all offline media types.”

With respect to online media, one respondent said online reach-and-frequency information is much harder to project, so media departments typically look for higher share-of-voice by placement by site rather than reach-and-frequency data. Although there is still disagreement on the specific number or range of “effective reach,” there seems to be at least some agreement in using the term *effective reach* in that most respondents understood and tried to define it with an effective number of exposures, which has not changed since the Leckenby and Kim 1994 study.

## Use of (Computerized) Reach-and-Frequency Estimation Models

The majority of the respondent's agencies used computerized models to estimate both reach and frequency distributions (96.6 percent and 93.2 percent, respectively) for a single media type (e.g., magazines, which attracted 90.5 percent and 87.3 percent, respectively, in the Leckenby and Kim 1994 study).

The current survey respondents were asked to indicate the models their agency uses to estimate reach-and-frequency distributions from a list of 19 models (derived from Leckenby and Kim, 1994; See Table 5). As a media department might employ more than one model in its process of estimation, the reach-method question generated 84 responses, and there were 72 responses to the frequency-distribution questions.

**TABLE 5**  
Models Used in Reach-and-Frequency Estimation

| Methods             | '08 (percent) |           | '94* (percent) |           | Z <sup>b</sup> | Z <sup>c</sup> |
|---------------------|---------------|-----------|----------------|-----------|----------------|----------------|
|                     | Reach         | Frequency | Reach          | Frequency |                |                |
| IMS                 | 33 (39.2)     | 33 (45.8) | 26 (26.0)      | 23 (25.0) | 1.92           | 2.79**         |
| Telmar              | 12 (14.2)     | 12 (16.7) | 18 (18.0)      | 17 (18.5) | 0.68           | -0.95          |
| Metherringham       | 6 (7.2)       | 6 (8.3)   | 15 (15.0)      | 12 (13.0) | -1.67          | -0.96          |
| Beta Binomial       | 3 (3.6)       | 3 (4.2)   | 12 (12.0)      | 14 (15.2) | -2.08*         | -2.30*         |
| MODAL II            | 0 (0.0)       | 0 (0.0)   | 9 (9.0)        | 8 (8.7)   | -2.82**        | -2.57*         |
| MEDIAC              | 0 (0.0)       | 0 (0.0)   | 2 (2.0)        | 2 (2.2)   | -1.30          | -1.26          |
| Simulation          | 3 (3.6)       | 0 (0.0)   | 4 (4.0)        | 3 (3.3)   | -0.14          | -1.55          |
| Beta Matrix         | 0 (0.0)       | 0 (0.0)   | 3 (3.0)        | 3 (3.3)   | -1.60          | -1.55          |
| Sainsbury           | 0 (0.0)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | —              | —              |
| Negative Binomial   | 0 (0.0)       | 0 (0.0)   | 1 (1.0)        | 1 (1.1)   | -1.30          | -0.89          |
| Marketmath          | 3 (3.6)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | 2.69**         | —              |
| Morgensztern        | 0 (0.0)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | —              | —              |
| Agostini            | 3 (3.6)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | 1.91           | —              |
| Constant Casualness | 0 (0.0)       | 0 (0.0)   | 1 (1.0)        | 1 (0.0)   | -0.92          | -0.89          |
| Kwerel              | 3 (3.6)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | 1.91           | —              |
| Hofmans             | 0 (0.0)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | —              | —              |
| Dirichlet I         | 0 (0.0)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | —              | —              |
| Loglinear           | 0 (0.0)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | —              | —              |
| CANEX               | 0 (0.0)       | 0 (0.0)   | 0 (0.0)        | 0 (0.0)   | —              | —              |
| Other               | 18 (21.4)     | 18 (25.0) | 9 (10.2)       | 9 (9.8)   | 2.37*          | 2.61**         |
| Total               | 84 (100)      | 72 (100)  | 100 (100)      | 92 (100)  |                |                |

Note: \*Findings from Leckenby and Kim (1994), \*p < 0.05; \*\*p < 0.01.

<sup>b</sup>Comparison with Leckenby and Kim (1994) of models used in reach estimation.

<sup>c</sup>Comparison with Leckenby and Kim (1994) of models used in frequency distribution estimation.

The IMS models are currently the ones used most often for both reach (39.2 percent) and frequency (45.8 percent), followed by Telmar models for both reach (14.2 percent) and frequency (16.7 percent; See Table 5). These data are consistent with the findings from Leckenby and Kim (1994).

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There was some indication that the popularity of some of the models used in reach-and-frequency estimation has changed, compared to the Leckenby and Kim (1994) study. With respect to reach estimation, Beta Binomial (3.6 percent) and MODAL II (0.0 percent) were less frequently used ( $z = -2.09$ ,  $p < 0.05$  and  $z = -2.82$ ,  $p < 0.01$ , respectively) although Marketmath (3.6 percent) was more often used, compared to the 1994 study (0.0 percent;  $z = 2.69$ ,  $p < 0.01$ ).

With respect to frequency estimation, consistent with the models used in reach estimation, Beta Binomial (4.2 percent) and MODAL II (0.0 percent) were less frequently used ( $z = -2.30$ ,  $p < .01$  and  $z = -2.54$ ,  $p < 0.01$ , respectively), but IMS (45.8 percent) was more often used, compared to the 1994 study (25.0 percent;  $z = 2.79$ ,  $p < 0.01$ ).

The current study also offered an “other” category: Specifically, follow-up questions regarding the specific nature of this other category showed responses distributed fairly evenly across Nielsen Stellar, Strata, Smart Plus, the AGB system, and Tapscan. The proportion of the respondent’s agencies that used other category-computerized models to estimate both reach and frequency distributions (21.4 percent and 25.0 percent, respectively) were significantly greater than those observed in the 1994 study (10.2 percent and 9.8 percent, respectively;  $z = 2.37$ ,  $p < 0.05$  and  $z = 2.61$ ,  $p < 0.01$ , respectively).

Respondents were asked to indicate which types of personnel inside and outside of the agency usually requested data related with reach-and-frequency distribution. As expected, media planners most often requested such information, as observed in the 1994 study. Also consistent with previous surveys, media buyers were not prominent users of both reach and frequency distribution information, although the results of 38.4 and 42.3 percent of the survey respondents indicate that the number of media buyers requesting such information is notably higher than it was in the 1994 Leckenby and Kim study.

### ***Performance of the Models***

Respondents were asked to rate their satisfaction using a seven-point semantic differential scale anchored by “Satisfied” (7) and “Dissatisfied” (1). The study revealed somewhat lower mean satisfaction—4.67 for reach and 4.63 for frequency—compared to the previous Leckenby and Kim (1994) study (4.8 and 4.5, respectively). Excluding nonrespondents to this item, approximately 45.0 percent of respondents showed either negative or neutral degrees of satisfaction with the current methods for both reach-and-frequency estimation.

Respondents then were asked how accurate they considered their agency’s reach-and-frequency distribution methods compared to the “actual” reach-and-frequency distribution (if these could be known; See Table 6). For each estimation method, 77.2 percent of those responding estimated their reach estimate was different from the “actual” by 6 percent or more. At 82.7 percent, the corresponding response for the frequency distribution was considerably higher. These figures are higher than those generated by the 1994 Leckenby and Kim study (64.0 percent for reach and 79.6 percent for frequency), indicating decreasing faith in the accuracy of the models.

**TABLE 6****Perceived Accuracy of Reach-and-Frequency Estimation Models**

| Perceived Accuracy   | Reach            |                               |                | Frequency        |                               |                |
|----------------------|------------------|-------------------------------|----------------|------------------|-------------------------------|----------------|
|                      | '08<br>(percent) | '94 <sup>a</sup><br>(percent) | Z <sup>b</sup> | '08<br>(percent) | '94 <sup>a</sup><br>(percent) | Z <sup>c</sup> |
| Within 1 percent     | 2.8              | 2.0                           | 0.94           | 2.8              | 2.0                           | 0.29           |
| Within 2–5 percent   | 20.0             | 34.0                          | 1.73           | 14.5             | 18.4                          | 0.56           |
| Within 6–10 percent  | 42.8             | 52.0                          | 0.99           | 47.9             | 63.3                          | 1.66           |
| More than 11 percent | 34.4             | 12.0                          | 2.78**         | 34.8             | 16.3                          | 2.22*          |
| Total                | 100<br>(n = 70)  | 100<br>(n = 50)               |                | 100<br>(n = 69)  | 100<br>(n = 49)               |                |

Note: <sup>a</sup>Findings from Leckenby and Kim (1994), \* $p < 0.05$ ; \*\* $p < 0.01$

<sup>b</sup>Comparison with Leckenby and Kim (1994) of proportions for the degrees of perceived accuracy of reach estimation models.

<sup>c</sup>Comparison of proportions for the degrees of perceived accuracy of frequency distribution estimation.

Additionally, the participants responding to the items estimated their reach-and-frequency distribution were different from the “actual” by more than 11 percent (34.4 percent for reach and 34.8 percent for frequency) and were significantly higher than those from the 1994 study (12.0 percent and 16.3 percent, respectively;  $z = 2.78$ ,  $p < 0.01$ ;  $z = 2.22$ ;  $p < 0.05$ ). Indeed, only 2.8 percent of those responding to both reach and frequency estimations, thought their models were within one percent of accuracy—similar to Leckenby and Kim’s 1994 findings.

The percentages of respondents who perceived that reach-and-frequency estimation models for magazines was accurate within one percent of actual numbers were 4.5 and 8.7 percent, respectively, which was the highest among all media types (See Table 7). Conversely, exposure estimation models for radio were perceived to be the least accurate. The percentages of respondents who perceived that reach-and-frequency estimations models for radio was at least six-percent different from the “actual” were 75.0 and 66.7 percent, respectively. It is also noteworthy that 50 percent of the respondents indicated that they do not use reach or frequency estimation for online media, which may indicate a lack of (effective) computerized models that incorporate the Internet data and the unique characteristics of the medium.

**TABLE 7****Perceived Accuracy of Reach-and-Frequency Estimation Models by Medium**

| Media Type <sup>a</sup> | Not Used |       | Within 1 percent |       | Within 2–5 percent |       | Within 6–10 percent |       | 11 percent or more |       |
|-------------------------|----------|-------|------------------|-------|--------------------|-------|---------------------|-------|--------------------|-------|
|                         | Reach    | Freq. | Reach            | Freq. | Reach              | Freq. | Reach               | Freq. | Reach              | Freq. |
| Network TV              | 27.3     | 27.3  | 4.5              | 4.5   | 13.6               | 18.2  | 31.8                | 22.7  | 22.7               | 27.3  |
| Spot TV                 | 4.2      | 4.2   | 0.0              | 0.0   | 25.0               | 33.3  | 41.7                | 29.2  | 29.2               | 33.3  |
| Cable TV                | 13.6     | 13.6  | 4.5              | 4.5   | 22.7               | 31.8  | 31.8                | 18.2  | 27.3               | 31.8  |
| Radio                   | 8.3      | 8.3   | 0.0              | 0.0   | 16.7               | 25.0  | 37.5                | 29.2  | 37.5               | 37.5  |
| Magazines               | 26.0     | 26.1  | 4.5              | 8.7   | 21.7               | 17.4  | 39.1                | 39.1  | 8.7                | 8.7   |
| Newspapers              | 36.4     | 36.4  | 0.0              | 4.5   | 13.6               | 9.1   | 31.8                | 31.8  | 18.2               | 18.2  |
| Outdoor                 | 31.8     | 36.4  | 4.5              | 0.0   | 4.5                | 9.1   | 27.3                | 22.7  | 31.8               | 31.8  |
| Internet                | 50.0     | 50.0  | 0.0              | 4.5   | 4.5                | 0.0   | 18.2                | 18.2  | 27.3               | 27.3  |
| Telephone Directories   | 81.8     | 81.0  | 0.0              | 4.8   | 4.5                | 0.0   | 9.1                 | 9.5   | 4.5                | 4.8   |
| Direct Mail             | 81.0     | 81.0  | 4.8              | 9.5   | 4.8                | 0.0   | 4.8                 | 4.8   | 4.8                | 4.8   |

Note: <sup>a</sup>n = 69.

Table 8 shows media directors’ perception of the need for improvement in the accuracy of the reach-and-frequency distribution estimation methods used by their agencies. As expected, media directors perceive the need to improve in the accuracy of the reach-and-frequency distribution estimation methods (See Table 8). Almost all respondents believe at least “some

improvement” is needed for reach (85.7 percent of 70 respondents) and for frequency distribution (86.6 percent of 69 respondents). It is also important to note that almost one-fourth of the respondents thought a “great deal” of improvement is needed for reach-and-frequency estimation models—a figure similar to the 1994 data reported by Leckenby and Kim.

**TABLE 8**  
Extent of Improvements Needed in Reach-and-Frequency  
Distribution Models

| Improvement Needed | Reach            |                               |                | Frequency        |                               |                |
|--------------------|------------------|-------------------------------|----------------|------------------|-------------------------------|----------------|
|                    | '08<br>(percent) | '94 <sup>a</sup><br>(percent) | Z <sup>b</sup> | '08<br>(percent) | '94 <sup>a</sup><br>(percent) | Z <sup>c</sup> |
| Great deal         | 24.3             | 23.1                          | 0.15           | 24.6             | 24.5                          | 0.00           |
| Quite a lot        | 18.2             | 13.5                          | 0.75           | 21.8             | 26.4                          | 0.60           |
| Some               | 43.2             | 57.7                          | 1.90           | 40.2             | 43.4                          | 0.31           |
| None               | 14.3             | 5.8                           | 1.51           | 13.4             | 5.7                           | 1.36           |
| Total              | 100<br>(n = 70)  | 100<br>(n = 52)               |                | 100<br>(n = 69)  | 100<br>(n = 53)               |                |

Note: <sup>a</sup>Findings from Leckenby and Kim (1994), <sup>b</sup>p < 0.05; <sup>c</sup>p < 0.01.

<sup>b</sup>Comparison with Leckenby and Kim (1994) of proportions for the extent of need for improvement in the accuracy of reach estimation models.

<sup>c</sup>Comparison with Leckenby and Kim (1994) of proportions for the extent of the need for improvement in the accuracy of frequency estimation.

Finally, to understand also the issue of accuracy, the authors asked a series of related questions of the respondents. For one, the research team asked the respondents to evaluate the importance of reach-and-frequency distribution model accuracy. Twenty-five percent of the respondents said it is “very important”; 45.8 percent indicated the issue as being “somewhat important.”

Furthermore, despite the fact that the accuracy of the models generally was considered important by a majority of the media directors, only 29 percent of the respondents (n = 69) indicated that their agency had tested the accuracy of any of their reach or frequency estimation models within the past 5 years.

Those who indicated that their agency had tested the accuracy of reach-and-frequency estimation models (20 respondents) were further queried as to the standards they use to assess estimation accuracy. The standards used to measure the model accuracy included “comparison against actual, tabbed or survey data” (57.1 percent); “comparison against results from other models as the evaluation standard” (57.1 percent); “indications of model performance supplied by sources outside the agency” (42.9 percent); “availability of various media statistics” (42.9 percent); and “internal logic of the estimation models” (28.6 percent).

## DISCUSSION

Longitudinal comparisons of the results of the current study with findings from the earlier works by Leckenby and colleagues reveal some key findings for practitioners. First, the new data indicate that planners are relying to a greater extent on qualitative considerations when they weigh their media choices.

This revelation comes despite the fact that the media profession is increasingly complex, with more media/vehicle options and concomitant expansion in data (Katz, 1991; O’Guinn, Allen, and Semenik, 2009). Indeed, though qualitative factors were

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considered important in the Leckenby and Kim (1994) study, in the current research, qualitative considerations emerged as the second most important factor (tied with target market CPM) for offline media and second most important factor for online media (outscored all but one of the online-specific factors).

Thus, in a more diverse media world, media directors seem to be eschewing sophisticated/advanced empirical criteria and, instead, relying on nonquantifiable factors such as instincts, experience, or the “feel” of a medium. It may be that senior media directors consider their profession has evolved too quickly, too richly, and is too complicated to attempt empirical modeling with any trusted degree of accuracy. The current study’s results also show that more than a third of the sample believe that the reach-and-frequency models being used currently by their agencies are more than 11 percent “off” from reality (compared with approximately 10 percent believing this for reach models and 15 percent believing this for frequency models in the Leckenby and Kim study).

The current study also reveals key results in terms of online versus offline media, particularly in terms of media-exposure models and media-vehicle-selection factors. Some of the most popular criteria used for offline media (i.e., reach, frequency distribution, gross rating points (GRPs), average frequency, and effective reach) were mentioned by less than half of the agency media directors as a consideration in the evaluation of online media.

In fact, in the evaluation of online media, the media directors in the study sample evinced clear preference for such online-specific factors as click-through rates, number of page-views, ad impressions, and unique visitors. The pattern of results not only points to a limit in the perceived application of some offline media evaluation criteria to online media forms but reinforces the notion that media professionals still consider online media to be a medium in flux.

Further reinforcing the differences in how media planning experts view offline and online media, the current study’s findings show that fully half of respondents use neither reach nor frequency distribution models in dealing with the Internet as a potential ad medium.

Among those who used one or both types of estimation models for online media, more than half consider the models to be more than 6 percent “off” in terms of accuracy, with almost a third believing them to be inaccurate in terms of frequency estimates by more than 11 percent—despite the fact that online media have been hailed for their ability to yield vast amounts of detailed audience/behavior information. The actual practice of media professionals, in fact, underscores the belief of many that data quantity is not synonymous with data quality. More simply, these findings may indicate that there simply are not many reach-and-frequency estimation models—whether online-specific or media neutral—that planners trust enough to use in their work when it comes to Internet media planning.

As the amount of media data available to planners has continued to expand, the importance of media-exposure models has increased over time. Nonetheless, however, the perceived accuracy of those models has decreased. Indeed, the media planners surveyed seemed to be more concerned about this level of accuracy than their peers in the past were.

The proportions responding to the item who estimated their reach-and-frequency distribution was different from the “actual” by 11 percent or more were considerably higher than those documented in the Leckenby and Kim (1994) study. The irony is that, despite their concerns, less than a third of respondents indicated that their agencies had tested the accuracy of their models within the past 5 years. As the media business becomes ever more complex, these models are likely to be perceived as even less accurate if no changes are made.

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It is also notable that, compared to the 1994 study, the proportion of respondents using “reach” and “effective reach” for offline media has increased. Reach still is one of the primary considerations for offline media and, compared to the 1994 study, more media planners have accepted the concept of “effective reach.”

Continuous development of more accurate media exposure models remains a priority if improved reach-and-frequency estimation figures are to provide the basis for the development of such schedule-evaluation metrics as “effective reach.” In fact, some of the newer media-exposure models developed in academia (e.g., “Conditional Beta Distribution,” Kim, 1994; “Hyper Beta Distribution,” Cheong and Leckenby, 2005) have been demonstrated to be more accurate but have not yet been embraced by industry practitioners.

## **FUTURE DIRECTIONS**

One of the limitations of the current work is that the findings are confined to the viewpoints of one nation’s media directors. Media planning experts in other countries/cultures may evaluate media using different factors (or prioritize them differently) and view reach-and-frequency estimation models differently than their U.S. counterparts. Though there have been some isolated efforts in the literature to assess non-U.S. media planners’ views on reach-and-frequency and media-evaluation issues, these studies have been rare. Exceptions include E. Bigné’s 1990 study of perspectives of media planners in Spain; Leckenby and Kim’s (1994) comparisons of selected data with opinions of Taiwanese and Japanese media experts; an early conceptual work by Catry and Chevalier in 1973 on the development of French media models; and Simon and Thiel’s 1980 study of German media-planning models. Updating not only would illuminate any cross-cultural differences among media planners in terms of reach/frequency issues but would cast light on whether (and to what extent) the increasing complexity of media is a global phenomenon and how non-U.S. planners are responding.

Another future path of study is to confirm whether the findings of the current study apply to smaller agencies. On the assumption that very small agencies may not be divided into separate departments and may not have a dedicated media director, the current sampling did not include agencies whose billings were less than \$1 million. In fact, the mean number of employees at responding agencies was 68.5, indicating that the current study’s results are more applicable to medium-to-large agencies that deal with regional and national campaigns. Small agencies’ media-planning concerns may differ owing to smaller budgets and clients, local focus, fewer total employees, and more employees serving in multiple positions.

There is an ongoing discussion within the media planning field as to whether the Internet should be treated as a separate and unique medium that requires its own models (Danaher, 2007) or whether it should be integrated into prior media models that have encompassed the noninteractive media (Cannon, 2001). The current research does not directly address this issue but shows a clear desire among planners for models that can specifically address the Internet in their parameters, whether in the form of Web-only models or integrative models (demonstrated by a full 50 percent of media directors’ using neither a reach-nor frequency-estimation model for online media). Although such work on proposing and improving media models was particularly popular in the late 1980s and early 1990s (Danaher, 1991; Rust and Klompmaker, 1981), researchers are encouraged to focus on developing new (and refining established) models that can better integrate the Internet’s unique characteristics with more traditional media.

Finally, the authors recommend future researchers expand the scope of studies assessing reach-and-frequency estimation and media-evaluation perceptions to other audiences beyond media planners/directors. Although some studies have looked at media selection factors among advertisers (King and Reid, 1997; King et al., 2004; Nowak et al., 1993), none have investigated perceptions of advertisers and nonmedia department agency personnel regarding their desire to simulate real-

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world behaviors using estimation models.

Indeed, the use of reach-and-frequency models and the desired increase in accuracy among media experts can be considered as representing a way of viewing advertising as empirical, quantitative, and measurable (qualitative factors in media evaluation notwithstanding). A comparison of creative and media departments' respective views of the underlying premises of such models would be instructive in generating further understanding of the two different disciplines. Similar comparison of account managers' and clients' perceptions also would provide insightful, particularly as advertisers continue to insist on even more immediate returns on their marketing investments.

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