USE AND EFFECTIVENESS OF BILLBOARDS
Perspectives from Selective-Perception Theory and Retail-Gravity Models

Charles R. Taylor, George R. Franke, and Hae-Kyong Bang

ABSTRACT: A survey reveals four primary reasons why businesses use billboard advertising: visibility, media efficiency, local presence, and tangible response. Insights on the relative importance of these factors are provided by retail-gravity models and selective-perception theory, along with recency planning in media strategy. The study also identifies eight executional factors that are associated with successful billboard advertising: name identification, location of the billboard, readability, clarity of the message, use as a tool of integrated marketing communications (IMC), powerful visuals, clever creative, and information provision. Moderating effects of company size, company type, and level of billboard usage are examined. The results go beyond existing textbook and trade-press discussions to document the factors that make billboards an important promotional tool.

Recent years have seen growth in outdoor advertising revenues. According to the Outdoor Advertising Association of America, annual revenues were $2.8 billion in 1993; over the following 10 years, expenditures almost doubled, increasing to $5.5 billion in 2003. This rise has occurred in spite of the loss of cigarette advertising on billboards due to the Master Settlement Agreement of 1998 and a decline in the relative proportion of billboards for alcoholic beverages (OAAA 2004). In recent years, a broader range of product categories has been advertised on billboards, led by a variety of retail and service businesses. Zenith Optimedia classifies outdoor advertising as a “major medium,” along with television, radio, newspapers, magazines, the Internet, and cinema. Zenith Optimedia projects continued growth in outdoor advertising expenditures, and ranks outdoor as the fifth largest advertising medium worldwide, behind only television, newspapers, magazines, and radio (Zenith Optimedia 2005). Despite revenue growth, however, outdoor advertising remains “one of the least researched of any mass medium” (Katz 2003, p. 92). Even among the limited number of studies that have been conducted, few have focused on what factors drive its effectiveness (Donthu, Cherian, and Bhargava 1993).

The growth of outdoor advertising has included a considerable increase in the use of nontraditional formats, including street furniture (e.g., bus shelters, kiosks), alternative media (e.g., arenas and stadiums, airborne, marine), and transit (e.g., buses, airports). The focus of this study is on billboards, however, which remain the most common form of outdoor advertising.

Numerous academic articles, textbooks, and industry publications list key advantages and disadvantages of outdoor advertising/billboards in comparison to other media. No prior study has examined managerial perceptions of the primary reasons for using billboards, however. Moreover, despite numerous discussions of factors associated with billboard advertising success, the literature does not address the attributes of the medium that users see as the primary factors associated with successful billboard advertising.

The purpose of this paper is to address these gaps in the literature by reporting the results of a survey of businesses that use or have used billboard advertising. The issues addressed are:

1. What are the primary reasons that companies decide to continue using billboards? What is the relative importance of these reasons?
2. What strategic and executional factors do managers believe are critical to the success of a billboard campaign?
3. What is the relationship between the reasons for using billboards and the strategic and executional factors necessary for success?

This study first examines why companies use billboards.

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and then considers how to use them effectively. It also introduces two theoretical perspectives, based on gravity models and selective perception, to aid in a better understanding of what drives the effectiveness of outdoor advertising. The remainder of the paper contains a review of academic research on the characteristics of billboard advertising, followed by a description of the conceptual framework guiding the study. The study’s methods are then described, results are discussed, and implications and conclusions are drawn.

LITERATURE REVIEW

Characteristics of Billboards Versus Other Media

Textbook authors and academic researchers have identified a variety of distinctive characteristics of billboards and outdoor advertising (e.g., Kelley and Jugenheimer 2004; Sissors and Baron 2002; Taylor 1997; Vanden Bergh and Katz 1999; Woodside 1990). The advantages of using billboards include, among other things: (1) potential placement of the advertisement close to the point of sale, (2) high frequency of exposure to regular commuters, (3) high reach, (4) 24-hour presence, (5) geographic flexibility for local advertisers, (6) economic efficiency in terms of low production costs and low cost per thousand exposures, (7) visual impact from advertisement size and message creativity, and (8) brand awareness. Disadvantages include: (1) the need to limit the number of words in the message, (2) short exposure to the advertisement, (3) low demographic selectivity, and (4) measurement problems.

A recent study of billboard users found that compared with other media, billboards were rated higher in terms of ability to (1) communicate information affordably, (2) attract new customers, and (3) increase sales (Taylor and Franke 2003). While many advantages of billboards have been identified anecdotally, from experience, or through academic study, there is a need to investigate whether frequently listed advantages overlap with each other, and to examine whether they truly are advantages that are important to billboard users.

Executional Factors Associated with the Success of Billboards

Relatively few studies have attempted to examine executional factors associated with the effectiveness of billboard advertising. However, a few have provided very specific advice for outdoor advertisers. In examining the outcomes of outdoor advertising, some studies found that a novel or very creative execution could improve recall or attention to billboards (Fitts and Hewett 1977; Hewett 1975). Thus, use of a clever creative execution is one factor that has been hypothesized to correlate with effective outdoor advertising.

In a content analysis of billboards, Blasko (1985) examined whether advertisers were following accepted creative principles associated with outdoor advertising. Drawing on Burton’s Advertising Copywriting (1983) and the Traffic Audit Bureau’s Planning for Out-of-Home Media (1977), Blasko listed five main principles of effective billboard advertising: (1) short copy (eight or fewer words in copy), (2) simple background, (3) product identification (billboard clearly identifies product or advertiser), (4) simple message (single message communicated), and (5) creative (use of clever phrases and/or illustrations).

Studies conducted by Donthu, Cherian, and Bhargava (1993) and Bhargava, Donthu, and Caron (1994) found recall of billboards to be positively related to a variety of factors, including brand differentiation, emphasis on product performance, inclusion of price, use of a photograph, use of humor, use of color, and a good location for the billboard. The 1993 study emphasized that advertising recall can be enhanced by using fewer words or unusual executions.

As with the key advantages of outdoor advertising, there have been many discussions of strategic and executional factors related to the success of billboards, but little systematic investigation of the underlying factors that drive successful billboard advertising. Below, we offer some insight on these factors by providing two theoretical perspectives on the promotional role of billboards.

CONCEPTUAL RATIONALE AND HYPOTHESES

Two theoretical perspectives are used as a basis for hypotheses in this study. First, because humans have limited information-processing capacity, part of the attraction of billboards involves their ability to cut through clutter. To deal with the large volume of advertisements shown, people engage in selective perception, which involves screening out advertisements that are less relevant to them (Celsi and Olson 1988; Mowen and Minor 1998). Second, because a billboard appears at a specific location, many of its advantages are linked to geographic factors. As is suggested by gravity models in retailing (e.g., Allaway, Berkowitz, and D’Souza 2003; Bell, Ho, and Tang 1998), in the absence of a compelling stimulus such as substantially larger floor space for selling, consumers are more prone to shop closer to home.

Selective Perception and Clutter

A key obstacle to advertising effectiveness is the volume of advertising to which consumers are exposed. Godin (1999) reports that an average consumer is exposed to approximately one million marketing messages every year. To help manage this volume of information, consumers control their own information processing and engage in selective perception, which leads to processing only a limited number of advertisements and ignoring many others.
Selective perception has been conceptualized as a four-part process consisting of selective exposure, attention, comprehension, and retention. In an advertising context, selective exposure refers to people limiting the communications they see and hear to those that conform to their preexisting ideas and attitudes (Burgoon, Hunsaker, and Dawson 1994). Selective attention refers to actually paying attention to the advertisement once exposed to it. Selective comprehension involves the process by which the consumer reconciles the advertisement’s content with preexisting beliefs. Finally, selective retention is defined as remembering messages that are more consistent with one’s prior beliefs and one’s own self-image. When related to advertising, these four stages generally must occur before the advertisement reaches the consumer. At a minimum, attention and retention must take place (Assael 1981). As a result, advertisers must consider how selective perception is affecting their ability to get a message through to consumers.

Because of the heavy volume of advertising to which consumers are exposed, they must decide which advertisements to screen out and which to process. As media-planning expert Erwin Ephron has observed, outdoor advertising is unique in that people are not involved in the medium as they would be when watching a television program or reading the newspaper. As a result, Ephron (2004) has described outdoor advertising as a unique case in which the “medium is the message.” When driving by a billboard, a motorist is not bombarded with other media options, so selective perception is not as much of an obstacle as in some other media. Although the short exposure time and lack of involvement in the medium mandate that higher frequency of exposure is necessary for billboards to have the same impact as other media (Cannon and Riordan 1994; Murray and Jenkins 1992), the ability to cut through a cluttered advertising environment is a key benefit of billboards. In short, billboards have a special advantage in that they are generally seen in a setting where there is less competition for people’s attention. As a result, they may appeal to advertisers because of their ability to get noticed, especially at times and places when consumers are considering a purchase or are ready to buy (e.g., billboards for tourist attractions, retail stores, and restaurants). There are, of course, some contexts in which billboards are used for brand building and/or supplementing other media, but the recent shift toward local retail and service businesses accounting for a high proportion of billboards is indicative of the applicability of billboards being present at the right time (e.g., when a motorist is looking to stop for a meal).

Gravity Models

Dating back to Reilly’s law of retail gravitation (Reilly 1931), it has been theorized that in the absence of a known major advantage of an alternative (such as larger floor space), consumers will shop closer to home. Building on Reilly’s law, Huff (1964) focused on the spatial behavior of shoppers. At the heart of Huff’s law is the notion that travel time to a shopping center is inversely related to the likelihood of shopping there. In other words, the greater the distance to the shopping area, the less likely the consumer is to make a trip there. Huff and subsequent modelers (e.g., Bell, Ho, and Tang 1998) have examined factors that can induce consumers to travel further. The overriding assumption of these models is that some additional attraction must be present to offset distance, thereby making close locational proximity an advantage in most retail contexts.

Because gravity models suggest that consumers have a natural preference for traveling shorter distances and shopping at nearby places, it follows that billboards that point the consumer to a nearby location will have a stronger influence on store traffic and sales. The idea that billboards located in close proximity to the store are advantageous from a gravity perspective is also consistent with the media-planning advantages of billboards, namely, high reach and frequency in a local trade area. A study by Allaway, Berkowitz, and D’Souza (2003) supports the notion that the billboards in close proximity to a store enhance gravity effects. In examining the spatial diffusion of a loyalty card for a major U.S. retailer, the authors found a relationship between distance from the store and likelihood of signing up quickly. They also found a significant billboard effect, stating, “Even within the 0–3-mile ring nearest the store, non-adopters were significantly further from the nearest billboard than adopters” (p. 144). Allaway and Berkowitz (2006) further found that residents who lived within two miles of a billboard advertising the program had a 26% higher probability of adoption during the launch period, and that the speed of adoption was influenced by the number of billboards within two miles of the resident. Additional evidence for the influence of locational elements on billboard effectiveness is provided by Bhargava and Donthu (1999), who found that sales response to billboards is influenced by location of exposure.

In addition to academic research suggesting that billboard effectiveness is related to location, the well-documented fact that most retail businesses draw most of their customers from a limited geographic area supports the application of gravity models to billboards. For example, Nelson and Niles (2000) cite data from the International Council of Shopping Centers that indicate that a neighborhood strip mall’s primary trade area is consumers within 3 miles, whereas regional malls draw from 5 to 15 miles, and outlet malls from 25 to 75 miles. In addition, data from the National Association of RV Parks and Campgrounds based on studies from state tourism departments show that travelers generally do not consider dining, accommodation, and entertainment options until 30 to 60
minutes prior to making a stop. While the primary trade area for retailers and service business can range from very small for small businesses such as independent restaurants, gas stations, and convenience stores, to being considerably larger, as in the case of amusement parks or large shopping malls, the need to reach consumers in the local area is readily apparent.

The locational advantages of outdoor advertising are consistent with the need to engage in “recency planning” (Ephron 1997). In the modern environment, advertising works by influencing those who are ready to buy. In this new model, “consumers control messages by screening-out most and selecting only a few that are relevant to them at the time. The new model accepts the relevance that what makes ads work is provided by what is happening in the consumer’s life and seldom by the advertising” (Ephron 1997, p. 61). The ability to avoid being screened out via selective perception processes allows many billboards to get noticed at the point at which the driver is considering a purchase.

Hypotheses and Research Questions

Billboard characteristics that influence a business to use the medium may pertain, in part, to both gravity and selective-perception issues. In terms of providing advantages for billboard users, however, two broad factors can be categorized as being more closely associated with gravity, while two others are more closely associated with selective perception. The factors more closely linked to gravity are tangible response and local presence. Tangible response refers to the ability of billboards to bring in customers, increase traffic, and build sales. There is widespread agreement that a billboard’s ability to attract customers is closely linked to its proximity to the place of business (e.g., Taylor and Franke 2003), thereby linking this factor to gravity models. The ability to build a local presence based on providing a “last hit” close to the place of business is also linked to retail gravity. Furthermore, the gravity model is linked to Ephron’s concept of recency planning, in that a billboard’s proximity to the place of business enhances the likelihood of a stop at a time when the consumer is ready to buy. Thus, gravity helps explain the place advantage that billboards have over other media.

Two factors that are more closely tied to selective-perception theory are visibility and media efficiency. Visibility, which refers to the ability of a billboard to make a strong visual impression, allows billboards to break through the clutter. Media efficiency, such as broad and frequent exposure to the target audience, suggests that the medium is effective and cost-efficient since it is being noticed even in a competitive environment.

Although the literature indicates that both the gravity and selective-perception factors are important advantages of billboards, it is not clear which factors are more important to businesses in terms of their reasons for continuing to use the medium. An a priori case can be made for a prediction in either direction, indicating that neither an exploratory approach nor the specification of a single dominant hypothesis is appropriate (Armstrong, Brodie, and Parsons 2001). Therefore, we develop alternative competing hypotheses without choosing one over the other.

Findings of gravity models have consistently verified the importance of location in retailing (e.g., Allaway, Berkowitz, and D’Souza 2003; Bell, Ho, and Tang 1998; Huff 1964; Reilly 1931). As a result, it can be argued that exposure to an advertisement in close proximity to a retail outlet can be more valuable than exposures that take place farther away. In essence, because of the tendency for consumers not to drive farther than they deem necessary to get to a retail location, exposure to the advertisement in close proximity to the store may be of key importance. Thus, one reasonable hypothesis is:

H1a: Gravity-related factors are more important than selective-perception factors in the decision to use billboards.

An alternative case can be made for the central importance of overcoming selective perception. In a cluttered environment, where many advertisements compete for attention, it is critical for advertising to get noticed and, in turn, processed by the consumer. Because advertisements that are not noticed will not be effective, high visibility and frequency of exposure at an affordable price may be key contributors to the message being perceived and in it having an impact. We therefore hypothesize that

H1b: Selective-perception factors are more important than gravity-related factors as a reason for using billboards.

Prior research has suggested that many smaller businesses and travel-related retailers, such as hotels, restaurants, and tourist attractions, often use billboards as a central part of their media mix (Taylor and Franke 2003). Therefore, in conjunction with testing these hypotheses, we will also address the following research question:

RQ1: Do the reasons for using billboards vary by number of billboards used per month, company size, or company type?

Factors Associated with Effectiveness

The literature suggests that for a billboard to be effective, it must communicate a relevant message in a clear, interesting, and readable manner to the appropriate audience. It must also be at an appropriate location in order to be seen by the target audience. Therefore, a straightforward expectation is that message, format, and location are important factors associated with the effectiveness of billboard advertising. Relevant message factors include name identification and other information about the company or its products, the creativity of execution, and the integration of the billboard content with
the company’s other promotional messages. Format factors include the readability of the verbal message, the brevity and simplicity with which the message is presented, and support of the verbal message with effective visuals. Location involves the appropriateness of where the billboard is placed.

Individual executional factors can be equally important for both gravity and selective-perception views of the role of billboards. Location, for example, can relate both to the vicinity of the business (gravity) and to an attention-getting spot near a stoplight or highway (selective perception). We propose that the success factors arise as a result of both theoretical perspectives. As a result, our goal is to identify latent factors that lead to successful advertising on billboards. Therefore, rather than trying to develop competing hypotheses about the relative importance of the different success factors, we pose a research question:

**RQ2:** What factors are related to the successful use of billboard advertising, and what is the relative importance of different billboard success factors?

We also pose the following question about potential moderators of success-factor perceptions:

**RQ3:** Do perceptions of the factors related to the successful use of billboard advertising vary by billboard usage, company size, or company type?

The fourth research question ties together the decision to continue using billboards with the factors that billboard users believe are critical to success. Specifically, do the success factors relate to the reasons for using billboards? If so, how? Too many alternatives are possible to allow the development of plausible competing hypotheses. For example, companies that think visibility is an important reason to continue using billboards could depend on any combination of message, format, or location issues for the eye-catching success of their billboards. Therefore, the present study will attempt to answer:

**RQ4:** How do the factors considered essential to billboard success depend on the company’s reason to continue using billboards?

Finally, we pose the following question involving the same moderators as above:

**RQ5:** Do billboard usage, company size, or company type moderate the influence of reasons to continue using billboards on factors related to the successful use of billboard advertising?

**METHOD**

**Sample and Procedure**

The sampling frame used was a national listing, provided by the Outdoor Advertising Association of America, of more than 5,000 companies known to have used billboards. A survey was sent to 1,315 companies selected from the list using a simple random-sampling technique. The cover letter promised confidentiality of responses and offered respondents a summary report of the findings upon request. Five weeks after the initial mailing, a follow-up mailing was sent to firms that had not yet responded.

Usable responses were obtained from 348 companies, including 16 not currently using billboards. This small group of nonusers was kept in the analyses to broaden the range of available perspectives on billboard usage. Another 171 surveys were unusable or returned as undeliverable, producing an effective response rate of 30.4%. This response rate, though not high in historic terms, is comparable to those of many recent surveys in the business literature (e.g., Dennis 2003; Morrison and Haley 2003). Potential nonresponse bias was assessed in two ways. Respondents to the first mailing were compared with respondents to the second mailing in terms of the number of employees and billboard usage levels. The differences were not significant, suggesting that nonresponse bias based on these dimensions was not a concern. In addition, follow-up phone calls were made to a sample of nonrespondents. Commonly cited reasons for failing to respond included lack of time, company policies against filling out surveys, and the discontinued employment of the person to whom the mailing was addressed. These reasons do not appear to be related to factors that would likely cause bias in the results.

**Measures**

In developing questionnaire items for reasons to use billboards and for executional effectiveness, we reviewed textbooks and academic articles and conducted extensive interviews with more than 20 personnel in outdoor advertising firms and general advertising firms. Some internal company documents were also examined. The preliminary list of items was pretested on a group of six industry executives, and the final questionnaire was written based on feedback provided. For the items measuring reasons for using billboards, seven-point scales ranging from “not at all influential” to “highly influential” were used. For the executional factors, seven-point scales with the endpoints “not critical” and “critical” were used.

To determine whether the items went together as expected, they were factor analyzed using principal axis analysis with squared communalities on the diagonal of the correlation matrix. Because varimax rotation gives distorted loadings when factors are correlated, oblique rotation was used to give a clearer factor structure. Coefficient α was calculated to assess the reliability of the items in each factor, and the scores for the individual items were averaged to obtain scale scores for each factor.
Profile of Responding Businesses

Table 1 presents a profile of the survey respondents. The respondents represent a wide range of business types, including both travel-related businesses (hotels, restaurants, retail stores, entertainment/tourism, and gas stations/mini marts) and general advertisers. Respondents use 0 to 20 or more billboards in a typical month, with 46% using from 1 to 4. Company size ranges from 10 or fewer employees to more than 500. Just over half of the companies (50.1%) have 50 or fewer employees, indicating that small businesses are well represented in the sample.

RESULTS

Hypothesis 1

Table 2 shows means, factor loadings, and scale reliabilities for items related to reasons for using billboards. The items load as expected and the scales show acceptable reliabilities, with $\alpha$ coefficients ranging from .76 to .93. The scale means range from 5.45 to 5.77, much closer to the “highly influential” value of 7 on the response alternatives than the “not at all influential” value of 1. As shown in the table, the factors are labeled as follows:

Visibility

Companies use billboards because they provide high visibility to the target audience; they are easily seen, make a strong impression, and are visible 24 hours a day.

Media Efficiency

From a media-planning standpoint, companies use billboards for their efficiency in terms of reach, frequency, and cost per thousand exposures.
Local Presence

Aspects of billboard location that influence use include generating awareness in close proximity to the business, maintaining brand presence, and providing a “last hit” close to the place of business.

Tangible Response

Producing a tangible consumer response, such as increasing traffic or sales, also influences a company’s decision to continue using billboards.

Table 2 also provides the results for the test of the competing hypotheses H1a and H1b. While respondents consider all four factors to be influential, the two factors that are more related to selective-perception issues (visibility and media efficiency) are each rated significantly higher than those that reflect retail gravity (local presence and tangible response) ($F > 5.84, p < .02$). Furthermore, a simultaneous comparison of the two gravity factors versus the two selective-perception factors is highly significant ($F = 30.45, p = 0$). Therefore, H1b is supported and H1a is contradicted.

Research Question 1

Table 3 shows the effects of billboard usage (0–4 versus 5 or more per month), company size (1–50 employees versus 51 or more), company type (travel-related or not), and their interactions on the reasons for using billboards. The factors are coded as 1/−1 dummy variables for the main effects, and their two- and three-way products represent the interaction terms. Using these predictors in a regression model yields $p$ values for each predictor that are identical to those produced by a standard three-way analysis of variance. The benefit of the regression approach is that the coefficients directly indicate the magnitudes of the effects. For example, travel-related companies (Type = 1) rate the importance of local presence .16 above the overall mean, controlling for the effects of the other variables in the model, whereas other companies (Type = −1) rate local presence .16 below the mean. Significant interaction terms are added to the values of the related main effects plus the grand mean to provide cell means. Visibility, for example, is estimated at 6.00 for large companies that are heavy billboard users (grand mean of 5.77 + .25 – .22 + .20), and at 5.10 for large companies that are light billboard users (5.77 – .25 – .22 – .20).

The main effects in Table 3 indicate that all four reasons to
continue using billboards are rated higher by heavy users and smaller companies. Travel-related companies also give higher ratings than other companies to local presence and tangible response to billboards. However, the main effects of billboard usage and company size are qualified by significant two-way interactions for visibility, efficiency, and presence. (The interaction for response approaches significance, with \( p = .068 \).)

For visibility, large companies that are light users of billboards give relatively lower ratings (\( M = 5.10 \)) than other companies (means range from 5.94 to 6.04). Media efficiency is high in importance to heavy users of billboards regardless of company size (small, \( M = 6.21 \); large, \( M = 6.07 \)), less important to small companies that make lower use of billboards (\( M = 5.57 \)), and considerably less important to large light users (\( M = 4.66 \)). A similar pattern is found for the importance of local presence, with comparable means for heavy users (small, \( M = 5.85 \); large, \( M = 5.88 \)), a lower mean for small light users (5.44), and an even lower mean for large light users (4.62). Finally, tangible response is most important to small companies that make heavy use of billboards (\( M = 6.00 \)), least important to large light users (\( M = 4.58 \)), and in-between for small light users (\( M = 5.68 \)) and large heavy users (\( M = 5.55 \)).

**Research Questions 2 and 3**

Table 4 shows that the items designed to assess perceptions of the factors critical to billboard success go together to form eight scales. Three scales have relatively low reliabilities, ranging from .62 to .68, but the rest have reliabilities above the conventionally accepted level of .70. The means range from 4.69 to 6.50, closer to the “critical” than the “not critical” endpoints of the response alternatives. The relative magnitudes of the means answer RQ2, and regressions similar to those shown in Table 3 answer RQ3.

**Name Identification, Location, Readability, and Clarity**

Four factors have mean ratings above six on a seven-point scale, ranging from 6.02 to 6.50. The highest-rated factor, name identification, refers to the need to get the company or brand name across to the consumer. Next are location and readability. Location involves whether the billboard is at an effective site, and readability involves how well the typeface, colors, and contrast contribute to legibility. In fourth place is clarity. Clarity contributes to readability, though it deals more with whether the billboard has an obvious, concise message than with how the message is actually presented.

**Integrated Marketing Communications and Visuals**

These two factors have mean ratings above five on the seven-point scale. The integrated marketing communications factor (IMC; \( M = 5.24 \)) comprises two questions about the message reinforcing an overall communications strategy. Three questions about billboards’ visual elements form the visuals factor (\( M = 5.12 \)).

**Creative and Information**

The final two factors score below five but above the midpoint of the scale (\( M = 4.77 \) and 4.69, respectively). Creative consists of three items suggesting clever or novel copy and illustra-
tions. Information comprises four items on the uniqueness or advantages of the product or service.

**Moderator Effects**

Table 5 has the same format and interpretation as Table 3. It indicates that six of the eight factors associated with successful billboard advertising do not vary by billboard usage, company size and type, or their interactions. Ratings of location are influenced by three, two-way interactions: use × size, use × type, and size × type. Location is seen as less critical to small nontravel companies that make heavy use of billboards ($M = 6.06$) and more critical to travel-related companies that are small or use billboards extensively ($M = 6.54$). Other combinations of the three factors rate location as intermediate in importance.

Readability shows a single two-way interaction. It is somewhat more important for small travel-related companies

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**TABLE 4**

Perceptions of Factors Critical to Billboard Success

<table>
<thead>
<tr>
<th>Factor and items</th>
<th>Mean $^a$</th>
<th>Standard deviation $^b$</th>
<th>Item loading $^b$</th>
<th>Coefficient $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name identification</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designing the billboard so our company or brand name registers quickly with consumers</td>
<td>6.50</td>
<td>.80</td>
<td>.62</td>
<td></td>
</tr>
<tr>
<td>Prominently featuring the name of our company or the products and services we offer</td>
<td>6.53</td>
<td>.94</td>
<td>.70</td>
<td></td>
</tr>
<tr>
<td><strong>Location of billboard</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The billboard is strategically located</td>
<td>6.33</td>
<td>.84</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>The billboard is on a “prime site”</td>
<td>6.10</td>
<td>1.14</td>
<td>.90</td>
<td></td>
</tr>
<tr>
<td><strong>Readability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typeface that is well spaced and legible from a distance</td>
<td>6.33</td>
<td>.72</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td>Clear contrast between background, illustration, and copy</td>
<td>5.73</td>
<td>1.28</td>
<td>.84</td>
<td></td>
</tr>
<tr>
<td>Using strong colors in the ad</td>
<td>6.12</td>
<td>1.12</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td>Using headlines that stand out in the ad</td>
<td>6.09</td>
<td>1.22</td>
<td>.50</td>
<td></td>
</tr>
<tr>
<td><strong>Clarity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making one single point effectively</td>
<td>6.02</td>
<td>.95</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td>Using a simple background</td>
<td>6.01</td>
<td>1.17</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>Using no more than seven or eight words in the copy</td>
<td>5.83</td>
<td>1.46</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td><strong>Integrated marketing communications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The message on the billboard must reinforce our advertising in other media</td>
<td>5.24</td>
<td>1.51</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>The billboard must be one part of a large communications plan designed to achieve our company’s objectives</td>
<td>5.43</td>
<td>1.60</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td><strong>Visuals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Including a powerful visual image in the form of an illustration</td>
<td>5.12</td>
<td>1.43</td>
<td>.82</td>
<td></td>
</tr>
<tr>
<td>The visuals on the billboard are of a quality that is similar to a work of art</td>
<td>5.23</td>
<td>1.69</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td>Making effective use of illustrations</td>
<td>5.08</td>
<td>1.64</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td><strong>Creative</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combining creative copy with a creative illustration</td>
<td>4.77</td>
<td>1.45</td>
<td>.82</td>
<td></td>
</tr>
<tr>
<td>Use of a clever slogan or phrase</td>
<td>4.76</td>
<td>1.72</td>
<td>.69</td>
<td></td>
</tr>
<tr>
<td>Using novel copy and/or illustrations</td>
<td>4.54</td>
<td>1.68</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal message clearly indicates the uniqueness of our product or service</td>
<td>4.69</td>
<td>1.29</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Giving information about the benefits of our product</td>
<td>5.27</td>
<td>1.54</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td>Providing a specific reason why the consumer should use our products/services</td>
<td>4.72</td>
<td>1.69</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td>The message describes specific advantages relative to our competition</td>
<td>4.51</td>
<td>1.69</td>
<td>.86</td>
<td></td>
</tr>
</tbody>
</table>

---

$^a$ Respondents were asked to indicate which of the items were critical to the success of billboards that advertised their business. The response scale ranged from 1 to 7, with 1 = not critical and 7 = critical.

$^b$ From a principal axis factor analysis with oblique (promax) rotation. Correlations between factors range from −.02 to .62.
(M = 6.47) and large non–travel-related companies (M = 6.41) than for large travel-related companies (M = 6.24) or small non–travel-related companies (M = 6.20).

Research Questions 4 and 5

Addressing RQ4 and RQ5, Table 6 shows how perceptions of the success factors relate to the factors underlying the decision to continue using billboards (RQ4) and how these relationships vary depending on company characteristics (RQ5). To address both questions, the sample was divided into eight groups reflecting all combinations of high and low billboard usage, small and large company size, and travel- versus non–travel-related companies. The overall results for RQ4 are shown in the “total sample” line for each success factor, which gives the unstandardized regression coefficients for the four predictor variables, constrained to be equal across the groups. The p value for the $\chi^2$ test indicates whether or not the hypothesis of equality across groups should be rejected, which is the initial test of RQ5. For additional evidence, LISREL modification indices were examined to find coefficients that differed significantly in particular groups, even if the hypothesis of overall equality was not rejected. Because this examination involved 256 different significant tests (four predictors × eight groups × eight dependent variables), almost 13 significant results could be expected under the traditional .05 α level due simply to random sampling error. Therefore, a more conservative .01 level was used for the supplemental tests.

The overall results for clarity indicate that as visibility becomes more important as a reason to continue using billboards, clarity becomes more important to the success of billboards. The p value for the equality constraint across groups approaches significance ($p = .07$), and the modification indices point to two groups that have noticeably different coefficients than the majority. For large travel-related companies that make low use of billboards, media efficiency has a strong negative effect on the importance of billboard clarity. For small non–travel-related companies that make high use of billboards, perceptions of local presence have a negative effect on the importance of clarity. After these two groups are removed from the total sample, the p value for the equality constraints on the regression coefficients indicates little variation across the remaining six groups ($p = .53$).

Three other success factors also show differing relationships with the predictors across groups. The equality constraint for visuals is significant ($p = .01$), and freeing coefficients in two groups improves model fit substantially ($p \leq .003$). Media efficiency has a positive coefficient for large travel-related companies that make low use of billboards, and an even larger coefficient in small travel-related companies with low usage. For these companies, local presence has a negative coefficient. After these two groups are removed from the overall sample, local presence has a positive effect and media efficiency a negative effect on visuals in the remaining groups.

Information has only one group that departs from the majority. For large non–travel-related companies that use few billboards, tangible response has a strong negative effect on the importance of information. None of the predictors are significant in the remaining groups. Similarly, the reasons to use billboards have no effect on perceptions of IMC in the majority of the groups. Two groups are exceptions. In large travel-related companies that use few billboards, visibility has a positive effect on IMC as a billboard success factor. In large non–travel-related companies that use few billboards, local presence has a negative effect on IMC.
For the remaining four success factors—readability, creative, name identification, and location—the regression coefficients are consistent across all eight groups. Tangible response increases ratings of readability, creative, and location as billboard success factors. Visibility increases ratings of readability, name identification, and location. Ratings of name identification are also increased by local presence.

DISCUSSION

This study draws on textbook discussions and journal articles, plus interviews with outdoor-advertising personnel, to develop measures of factors that influence the decision to continue using billboards and that are critical to billboards’ success. It confirms the importance of several factors through a survey of businesses that are using or have used billboard advertising. The findings also indicate the relative importance of the various factors, show how perceptions of the billboard success factors are influenced by businesses’ reasons for using billboards, and identify moderators of the variables and their interrelationships.

Visibility and media efficiency are the most important influences on the decision to continue using billboards. These attributes help billboards to be noticed and read rather than screened out through the process of selective perception. Also important are local presence and tangible response, which are both related to retail gravity issues in media strategy. In other words, billboards are often useful in reaching motorists near the time and place of a purchase decision, so these factors are especially important to travel-related companies. Together, the factors suggest that the ability to place attention-getting billboards close to the point of sale is an especially important reason to use billboards. These features are consistent with the concept of recency planning, which suggests the need to expose the message to the consumer when and where the consumer is ready to make a purchase.

The factors perceived as being most critical to billboard success involve clear, concise communication at an appropriate location. Coordinating the message on billboards with the company’s other advertising is lower in importance, and visuals, creative, and competitive information are lower still. That is, companies are more concerned with using typeface, contrast, color, and design to make the company or brand name register effectively than they are with considerations that may play a greater role in other media. Last-minute reminders of an established brand name may be all many companies expect.

Note: IMC = integrated marketing communications.

The last four columns are unstandardized regression coefficients produced in a multisample LISREL analysis. Samples represent the eight combinations of high/low billboard use, large/small company size, and travel/nontravel businesses. Coefficients in the “total sample” and “all other” rows are constrained to be equal across groups. One or more coefficients in the remaining rows vary significantly (p < .01) from the other groups. Because the variance explained differs across groups, even when the coefficients are constrained to be equal, R² for the combined results is not meaningful.

### TABLE 6
Regression of Success Factors on Reasons to Continue Using Billboards

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>χ²</th>
<th>df</th>
<th>p</th>
<th>Change in χ²</th>
<th>p for change</th>
<th>Description</th>
<th>n</th>
<th>Tangible response</th>
<th>Local presence</th>
<th>Visibility</th>
<th>Media efficiency</th>
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<tr>
<td>Clarity</td>
<td>39.92</td>
<td>28</td>
<td>.07</td>
<td></td>
<td></td>
<td>Total sample</td>
<td>309</td>
<td>-.10</td>
<td>-.07</td>
<td>.18*</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>31.44</td>
<td>27</td>
<td>.25</td>
<td>8.48</td>
<td>.004</td>
<td>Low use/large/travel</td>
<td>50</td>
<td>-.10</td>
<td>-.07</td>
<td>.19*</td>
<td>.90**</td>
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<td></td>
<td>24.73</td>
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<td>.53</td>
<td>6.71</td>
<td>.010</td>
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<td>15</td>
<td>-.11</td>
<td>-.52**</td>
<td>.20**</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All others</td>
<td>244</td>
<td>-.11</td>
<td>-.01</td>
<td>.20**</td>
<td>.07</td>
</tr>
<tr>
<td>Readability</td>
<td>34.39</td>
<td>28</td>
<td>.19</td>
<td></td>
<td></td>
<td>Total sample</td>
<td>314</td>
<td>.21*</td>
<td>-.08</td>
<td>.22**</td>
<td>.05</td>
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<tr>
<td>Visuals</td>
<td>47.34</td>
<td>28</td>
<td>.01</td>
<td></td>
<td></td>
<td>Total sample</td>
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<td>.02</td>
<td>.04</td>
<td>.19**</td>
<td>-.05</td>
</tr>
<tr>
<td></td>
<td>38.31</td>
<td>27</td>
<td>.07</td>
<td>9.03</td>
<td>.003</td>
<td>Low use/large/travel</td>
<td>37</td>
<td>.01</td>
<td>.04</td>
<td>.40*</td>
<td>-.05</td>
</tr>
<tr>
<td></td>
<td>20.16</td>
<td>25</td>
<td>.74</td>
<td>18.15</td>
<td>.000</td>
<td>Low use/small/travel</td>
<td>50</td>
<td>-.01</td>
<td>.47***</td>
<td>.16**</td>
<td>.54**</td>
</tr>
<tr>
<td>Creative</td>
<td>32.14</td>
<td>28</td>
<td>.27</td>
<td></td>
<td></td>
<td>Total sample</td>
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<td>-.07</td>
<td>.05</td>
<td>.00</td>
<td>.07</td>
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<tr>
<td>Name ID</td>
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<td>.56</td>
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<td></td>
<td>Total sample</td>
<td>314</td>
<td>-.10</td>
<td>.39**</td>
<td>.20**</td>
<td>-.11</td>
</tr>
<tr>
<td>Information</td>
<td>34.92</td>
<td>28</td>
<td>.17</td>
<td></td>
<td></td>
<td>Total sample</td>
<td>314</td>
<td>.07</td>
<td>.05</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>Location</td>
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<td>Low use/large/nontravel</td>
<td>15</td>
<td>-.90**</td>
<td>.05</td>
<td>.02</td>
<td>.08</td>
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<td>IMC</td>
<td>29.42</td>
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<td>.39</td>
<td></td>
<td></td>
<td>Total sample</td>
<td>309</td>
<td>.24**</td>
<td>.11</td>
<td>.18*</td>
<td>-.12</td>
</tr>
<tr>
<td></td>
<td>32.69</td>
<td>28</td>
<td>.25</td>
<td></td>
<td></td>
<td>Total sample</td>
<td>314</td>
<td>.03</td>
<td>.11</td>
<td>.06</td>
<td>.00</td>
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<tr>
<td></td>
<td>24.09</td>
<td>27</td>
<td>.63</td>
<td>8.60</td>
<td>.003</td>
<td>Low use/large/travel</td>
<td>37</td>
<td>.00</td>
<td>.10</td>
<td>.47**</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>17.43</td>
<td>26</td>
<td>.90</td>
<td>6.66</td>
<td>.010</td>
<td>Low use/large/nontravel</td>
<td>15</td>
<td>.00</td>
<td>-.68*</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All other</td>
<td>262</td>
<td>.00</td>
<td>.12</td>
<td>.03</td>
<td>.01</td>
</tr>
</tbody>
</table>

Note: IMC = integrated marketing communications.

The last four columns are unstandardized regression coefficients produced in a multisample LISREL analysis. Samples represent the eight combinations of high/low billboard use, large/small company size, and travel/nontravel businesses. Coefficients in the “total sample” and “all other” rows are constrained to be equal across groups. One or more coefficients in the remaining rows vary significantly (p < .01) from the other groups. Because the variance explained differs across groups, even when the coefficients are constrained to be equal, R² for the combined results is not meaningful.
of their billboards. Of course, billboards are not limited to simple name identification. Chick-fil-A, for example, has used an eye-catching creative strategy by putting three-dimensional cows and 48-foot-long “rubber chickens” on its billboards to help position the chain as a likable alternative to other chains (see www.richards.com).

The reasons for using billboards influence perceptions of all the success factors for at least some categories of respondents. Visibility has the broadest effect, increasing the relevance of clarity, readability, visuals, name identification, and location. In essence, companies that want their billboards to be noticed are not satisfied with simply getting people’s attention; they believe they must be in the right place and get their message across clearly to be effective. Visibility also has a strong effect on the importance of integrated marketing communications for large travel-related companies that are light users of billboards. For these companies, billboards are important as part of the overall communications effort rather than as a core advertising tool.

Company size and billboard usage moderate perceptions of all four reasons for using billboards. In general, all the reasons are more critical for small companies and heavier users. However, the use × size interaction leads to the greatest differences being observed for large companies that use few billboards. These companies rate all four reasons above the midpoint of the response scale on average, so they do not consider them to be unimportant. They may have larger advertising budgets and more media options than smaller companies, or focus more on the effects of their other advertising efforts, than companies that use billboards extensively.

Unlike the reasons for using billboards, it is notable that the success factors are generally consistent across companies. Regardless of company size and type and degree of billboard usage, which influence the reasons for using billboards, companies have common perceptions of appropriate billboard characteristics. Experience presumably teaches businesses what works and does not work with billboards. Because heavy and light users have similar perceptions, even limited experience appears to be sufficient to shape companies’ perceptions. Advertising agencies and outdoor-advertising firms may also play a role by communicating the importance of the success factors to their clients. Two exceptions to the overall consistency are location and readability. The readability effect has no clear interpretation, because it shows small travel-related companies having views similar to those of large non–travel-related companies, and large travel-related companies matching small non–travel-related ones. Given the number of effects reported in Table 5, this pattern may simply arise from sampling error. The influences on perceptions of location are more plausible, because travel-related companies especially want to influence motorists close to the point of sale. Location is most important to travel-related companies when they are small or heavy users of billboards. In either case, the company may rely on billboards—either by making heavy use of them, or by not having the resources to find effective media alternatives.

Companies that emphasize tangible response as a reason for using billboards also place greater weight on readability, location, and creative. Creative is the second-lowest rated of all the success factors, but companies appear to see it as helping billboards affect people’s behavior. Emphasizing local presence as a reason for using billboards increases the importance of name identification. This connection is logical, because reaching people close to the time and place of a purchase decision will not benefit the advertiser if the wrong name is communicated. Conversely, emphasizing local presence reduces the importance of clarity, visuals, and integrated marketing communications for certain categories of companies, but the groups are generally small and distinct in terms of billboard usage, company size, and company type. Media efficiency has a mix of positive and negative influences on visuals as a success factor. For large travel-related companies that make low use of billboards, media efficiency increases the importance of visuals but reduces the importance of clarity, suggesting that these companies are more interested in illustrating their message than in verbally communicating it.

CONCLUSION

Previous survey research has presented evidence on companies’ experience with billboards, their perceptions of billboards versus other media, and their estimate of the impact of a billboard ban on sales (Taylor and Franke 2003). This study focuses on companies’ reasons for using billboards and their views on factors that are critical to billboards’ success. Future research could add to the approaches of these studies in several ways. Expanded surveys of nonusers or former users of billboards would provide a useful comparison to the perspectives of current billboard users and give additional insights on the strengths and weaknesses of this form of outdoor advertising. For example, do nonusers value different advertising attributes than users, or do they have different beliefs about the ability of billboards to provide visibility, media efficiency, local presence, and tangible response? Do users of other media such as local radio or newspapers deal with selective perception and retail gravity in a different way than billboard users, or do they have distinctive goals for their advertising, such as supporting short-term sales promotions or communicating information about a variety of products?

Qualitative research could probe more deeply into why companies feel as they do. For example, why is name identification considered to be so much more critical to billboard success than other forms of information? Why are the creative aspects of billboards given only a moderate rating, considering
the “larger than life” potential of billboards for advertising creativity (e.g., Fraser 1991)? Content analyses could extend previous studies such as Blasko (1985) and Taylor (1997) to document whether the characteristics of billboards actually reflect business perceptions of appropriate billboard characteristics. Most important, research could examine whether businesses are correct in their views of billboard characteristics that lead to success. Laboratory experiments may be used to test how attitudes and intentions are influenced by billboard characteristics. Given sufficient resources, longitudinal analysis of sales or store traffic can demonstrate the effects of actual billboard campaigns (e.g., Bhargava and Donthu 1999).

REFERENCES


