

Effects of Configuration and Exposure Levels on Responses to Web Advertisements

JEAN LOUIS CHANDON

University of Aix
Marseille III, France
jean-louis.chandon@
iae-aix.com

MOHAMED SABER

CHTOUROU

University of Paris XII,
France
saber.chtourou@
iae-aix.com

DAVID R. FORTIN

University of Canterbury,
New Zealand
d.fortin@mang.
canterbury.ac.nz

The debate about which media metric efficiently measures the effectiveness of a web-based advertisement, such as banners, is still alive and well. Nonetheless, the most widely used measure of effectiveness for banner advertisements is still the click-through rate. The purpose of this article is to review the measures currently used to measure effectiveness in web advertising and to empirically determine the factors that might contribute to observed variations in click-through rates based on an actual sample of advertising campaigns. The study examined the complete set of all advertising insertions of 77 customers of a large advertising agency over a one-year period. A resulting sample of 1,258 placements was used to study the effect of banner formats and exposure levels on click-through rates using analysis of variance. Results suggest that the strongest effect on click-through rates comes from the use of *trick banners* ($\eta^2 = 0.25$) and that other factors such as size of the advertisement, motion, use of “click here,” and “online only” type of announcers all have a significant impact of click-through rates. Implications of these findings as well as limitations of the current study are discussed and directions for future research agendas proposed.

ADVERTISING STILL IS ONE of the few revenue sources for companies operating on the internet, other sources being still in experimental stages (E-commerce, pay per click, transaction-based, etc.). Internet advertising has grown rapidly to reach \$8.2 billion in the United States in 2000 (a 78 percent growth over 1999). Sales for Q4 grew to \$2.2 billion (Internet Ad Revenue Report 2000), but are now showing signs of deceleration (Q4 2000 revenues in the United States are only 9 percent more than Q3 2000) due to the demise of many *dot.com* endeavors. One-third of American households have already bought items via the internet in 2000 (24 percent in 1999). Books, plane tickets, and travel services were the most often purchased products and services. The web stopped to be an exclusivity of *dot.com* companies since more and more “brick and mortar” firms started

using the web for commercial purposes as well. The interest in understanding the effectiveness of advertising on the web is fueled by the need to reach a customer base that will be using a new shopping environment, the “home shopping center” as described by Venkatesh (2001).

To study the effectiveness of investments in web advertising, two alternative paradigms can be considered. The first paradigm argues that web-based banner advertisements contribute to enhance a company’s communication strategy: classic measures such as brand recall, attitude toward the advertisement, and attitude toward the brand can be used. The second paradigm would argue that the web is a direct-marketing tool. Thus, a banner advertisement is closer to a coupon found in print form, and its effectiveness should be measured through the actual redemption rate observed. In the case of

The authors wish to thank Wadado Régie for its support in providing access to its database and making this research possible.

the web, effectiveness would be measured by the click-through rate.

The first paradigm is widely used in academic research (Briggs and Hollis, 1997; Cho, 1999; Chtourou and Chandon, 2000; Drèze and Hussherr, 2000; Frazer and Mac-Millan, 1999). The second paradigm is predominantly used in empirical research of a more commercial nature. Most commercial websites that sell advertising space will quote a “click-through” rate in their rate cards. A few academic studies have investigated the factors affecting click-through rates (Briggs and Hollis, 1997; Hoffman, Novak, and Chatterjee, 1998). The purpose of this article is to review the measures currently used to measure effectiveness in web advertising and to empirically determine new factors related to the format of the banner and to the context of the exposure that might contribute to observed variations in click-through rates.

THE INTERNET

What is different about this new medium?

Some researchers believe that the web’s *interactive* nature, i.e., the ability of the user to receive and transmit messages, creates a totally new communication environment. Instead of the traditional model of one-to-many communication, the web is a “many-to-many” channel of communication (Hoffman and Novak, 1996; Rust and Oliver, 1994). Interactivity is the key characteristic of the new media that is expected to transform not only the way advertising is designed and implemented but also the manner in which it affects consumers’ opinions and attitudes. Despite the economic stake represented by the internet, some scholars question again the usefulness of conducting internet-specific advertising studies. So perhaps one of the first questions we should an-

swer is the following: what makes the internet really different from other media? Some authors have tried to answer this question (Drèze and Zufryden, 1998; Rust and Oliver, 1994). We can distinguish the internet from other broadcasting media (television and radio) by the fact that the advertising message is integrated within the editorial content as in print media. With broadcasting media, advertising messages alternate with program content. On the internet, the advertisement is in competition with the page content, which emphasizes the difficulty of capturing the user’s attention. In addition, past experience based on eye-tracking studies reveal that the likelihood of seeing (or registering) a banner diminishes with user expertise. Research wise, some authors have suggested that the internet enables the “shift from a survey-based to a census-based method of assessing effectiveness” (Drèze and Zufryden, 1998). Internet users leave traces when they navigate the internet or when they interact with site content. These traces are registered in cookie “files” that collect data without the traditional bias associated with surveys. We must realize that technical problems remain to be solved before the internet can provide individual data similar to those provided by TV panels.

The internet is also an interactive medium. It enables two-way communication since the user, target of the communication, can also be an actor in the process. The user can respond to the announcer or even diffuse a counter message and interact with other users in a form of peer-to-peer communication. With the internet, the stimulus and the response can occur on the same medium, which is quite distinctive from other forms of communication. Finally, the internet allows a potential integration between information seeking and commercial transactions. An internet user can respond to a web-based adver-

tisement, decide to buy the item, and then buy it within minutes. This allows for a significant shortening of the decision process. Consequently, even minute variations in the short-term reactions to the advertisement can lead to sizable gains in purchase behavior.

There are various forms of online interactive advertising. A survey by the Internet Advertising Bureau found that banner advertisements comprised 55 percent of total online spending, sponsorships accounted for 30 percent, interstitials accounted for 5 percent, email for 1 percent, and other for 8 percent. A survey of advertising agencies also supported a similar pattern of web advertisements (Arbitron, 2000). Despite difficulties in accounting for advertising spending, the consensus supports the banner advertisements as the dominant form of interactive advertisements on the web.

Banner advertising

Banner advertisements constitute the bulk of online interactive advertising and are used by almost all advertising agencies involved in interactive advertising. A banner advertisement is a rectangular shaped image typically located at the top of a web page. Despite declining click-through rates—from an average of 2.5 percent in 1995 to 0.34 percent in March 2000 (Nielsen Netratings), banner advertisements are still highly popular. The top banner advertisements indicate many uses of animation and other interactive features to increase clicking behaviors. The attempts now are to change both the size and location of banner advertisements to increase their effectiveness.

Sponsorship advertising

Following the models of event marketing, such as the Virginia Slims tennis tournaments, sponsorship advertising involves an advertiser to pay for a particular web

page or section of a page. This allows the advertiser to dominate the advertising space.

Interstitial advertising

Interstitial means “in between” and interstitial advertisements are a way of placing full-page messages between the web pages. Using the TV advertising model, interstitial advertising is an attempt to force exposure to the advertisement by interrupting the content of a page by overlaying a full- or partial-screen advertisement. This form of advertisement is more intrusive and requires the user to often “close” the message window in order to return to the original web content. It can become annoying after repeated exposure.

Other forms

Included in this category are a host of practices such as keyword search, classifieds, and referrals. Keyword searches are frequently linked with “affiliate programs” pioneered by companies such as Amazon.com and CDNow. For instance, a search for a book title or an author on Yahoo can lead to a link to Amazon.com to purchase that book; a search for an album or musician can lead to a link for CDNow. A second practice, called webring, is an extension of the linking principle, which connects a network of sites related to the same subject or theme. The webring link can usually be found as an icon at the bottom of web pages. For example, the 3COM Palm Pilot achieved a significant boost in sales as a result of a webring approach. The webring included links to such sites as fan clubs and retailers. *Business Week* reported that PalmPilot is connected to no fewer than 200 sites via four rings.

Advertisers are also employing opt-in advertising where consumers enter into explicit agreements to receive emails or banner advertisements related to their in-

terests. Opt-in advertising can be seen as reducing clutter for the consumer, lowering search costs, and increasing the targeting precision of marketers (Krishnamurthy, 2000).

No matter which particular form or forms of online interactive advertising are used, the advertising objectives are to get the consumer/user to (Dholakia and Fortin, 2001)

1. click on the advertisement and visit the advertiser’s website
2. keep the consumer at the website as long as possible and increase the amount of time spent (stickiness).

Clicking on a banner is an illustration of the specificity of the internet. It is a reaction that can occur immediately after processing the advertisement. It is also a short-term reaction that can be compared to an impulsive decision. Conceptually, we propose that clicking on a banner is somewhere between returning a coupon after seeing a print advertisement and an impulse buying after seeing a point-of-purchase advertisement. It is an immediate reaction to a stimulus that generally is short-lived and quickly forgotten.

IMPULSE BUYING

According to Bellenger, Robertson, and Hirschmann (1978), impulse buying represents 27–62 percent of the turnover of retailers. Beatty and Ferrel (1998) define it as “A sudden and immediate buying without intention of preliminary purchase, neither of the specific product, nor the category of product.” This behavior takes place after having felt some kind of urgency. It is a spontaneous act done without much conscious processing or thinking. Purchases motivated by a sudden recollection (“I have no more sugar in the house”) are not considered as impulsive purchases.

We see in this definition several common points with clicking on a banner advertisement that allows us to make an analogy between this behavior and an impulsive purchase. Consider the behavior as an unplanned act: if the visit of the target site was planned, the connection would be direct and not via the banner. **There is perception of urgency.** To click on a banner supposes that the web user gives up the visit of a current site and that he agrees to change his destination for the site of the announcer. However, we see some differences. The cost of a click is lower than the cost of an impulsive purchase. Furthermore, we cannot be sure that the web user who clicks on a banner does it without conscious processing or thinking.

The antecedents of the impulsive purchase

Beatty and Ferrel (1998) noticed that “it is surprising to see how few are the studies on the process and on the antecedents of impulsive buying.” They propose and validate a model of the process of impulsive purchase. They show that positive affect is an important antecedent of an impulsive purchase. This suggests that the creative factors that aim at creating a positive attitude will have a positive effect on impulsive acts (in this case, clicking on a banner advertisement).

Click-through rate as measure of advertising effectiveness

Several researchers feel that the emphasis on click-through is not a valid way to measure the effectiveness of online advertising. Briggs and Hollis (1997) claim that internet advertisements have an attitudinal effect that occurs without clicking on the banner. Drèze and Hussherr (2000) argue that “click-through rates will not capture the full extent of an advertisement’s effectiveness since pre-attentive pro-

cessing does not lead to immediate action” (p. 12). In other words, advertisers that only emphasize click rates ignore the effects that occur before or after clicking (Chtourou and Chandon, 2000). However, one of the most often used indicators of advertising effectiveness is the click-through rate, which is the number of clicks occurring on a banner related to the total number of displays. This indicator considers that part of the role of the advertisement is to divert the attention of the guest and bring him to the site of the announcer. This indicator possesses numerous advantages: it measures a voluntary action of the prospect that is looking for supplementary information. This indicator fills a gap in the classic measures of the advertising effectiveness. The click-through rate is a relatively reliable and easy to collect indicator because it is based on an automated collection. It does not require an investigator or the willingness of the interviewee to answer questions. All these qualities justify the use of this indicator by advertising agencies.

Despite these advantages, click-through rates cannot measure all aspects of advertising effectiveness and do not cover all the objectives an announcer can assign to an advertisement on the web. The second limit lies in the fact that the click-through rate measures only short-term effects. This indicator assumes that the individual is impacted upon only if he clicks immediately after exposure. However, it is possible that a web user could be exposed to a banner and visit the target site some time after the initial exposure or even several days later, when the need for the advertised information is felt.

The factors affecting the advertising efficiency

Table 1 recaps the results of studies conducted in the traditional media versus the new media. Based on these results, we

TABLE 1
Recap of Results from Studies in Traditional versus New Media

Variables	Media				
	Traditional		Internet		
	Recall	Attitude	Recall	Attitude	Click
Images	+	+	0	0	?
Animation	NA*	NA	+	0	+
Size	+	-	+	0	+
Placement					Theme pages, key words > home page
Calls to action	NA	NA	+	+	+

*NA = not available.

will elaborate a set of hypotheses for the current study.

Effect of targeting the banner. One of the unique features of the internet is that it enables a very precise thematic targeting. The banner server software allows for display of a banner closest to the keyword or to the subject matter consulted by the internet user. In the end, there is a close affinity between the subject matter consulted by the internet users and the advertisements to which they are exposed. One can postulate, without too much risk, that the internet users who consult a targeted page will be more involved in the subject of this page than the average internet user. Indeed, the “interest” dimension is one of the facets of involvement in most of the scales (Zaichkowsky, 1994). Internet users doing a thematic search or a keyword search should theoretically be more attentive to the advertisement because of its affinity with their subject of interest. Those internet users may be more inclined to seek additional information

about the product. They should be more likely to “click” than the less involved users, like those exposed randomly to a banner displayed in “general rotation” or to a banner displayed in the home page of the site. This supposition was generally validated either by professional or academic studies. Hence, our first hypothesis:

- H1: Insertions in targeted pages (thematic and keywords) will have a better click-through rate than those in nontargeted pages (random displaying or home pages).

The originality of our study, in addition to the confirmation of this result, is that we are looking for interactions between involvement and the other variables of advertising creative. Indeed, the Petty, Cacioppo, and Schumann (1983) ELM model, suggests that, when motivation to process information is high (which is probably true for persons visiting targeted pages), individuals are less sensitive to peripheral arguments of the message, such as

the vividness of the message (animation or presence of graphics). So one can suppose that

H2: Targeting will have a moderating effect on the relationship between the vividness of the message and the click-through rate.

Effect of size. The effect of size on advertising effectiveness has been studied in traditional media, especially print. The common rule is that size usually improves memorization. Since large banners occupy more screen space, they run better chances of grabbing attention and being seen and remembered. Studies on print advertising confirmed that finding (Finn, 1988; Kelly and Hoel, 1991; Naccarato and Neuendorf, 1998). The results about the effects on attitude are not so decisive. Size has not always had a positive influence on attitude toward the brand. Homer (1995) showed that size has an inverted U-shape effect on attitude. The effect is positive until a certain level beyond which the advertisement is perceived as a manipulation. On the internet, studies that examined the size of banners do not agree on the effect of size. Drèze and Hussherr (2000) and Chtourou and Chandon (2000) did not find any effects of the size on memorization. By contrast, Cho (1999) has shown that size explains the intention to click in situations of weak involvement. Moreover, Chtourou and Chandon (2000) showed that size moderates the effect of other format variables. Picture presence is negative for small banners whereas it tends to be positive for larger banners. Motion seems to have a positive effect for the larger banners as well.

Accordingly, we posit:

H3: Banner size will positively influence the click-through rate.

The internet is the first medium that offers a choice in using or not using animated graphics or text.

H4: Banner size will moderate the relationship between other format variables and the click-through rate.

Effect of animation. Animation has not been studied much in the traditional advertising literature. The internet is the first medium that offers a choice in using or not using animated graphics or text. Commercial studies usually reveal that animated banners catch the eye a bit better and thus generate more attention. Nevertheless, creativity in this field is limited by technical considerations. The current bandwidth of the network is not enough to transmit real videos very efficiently. So the use of a succession of fixed images (technically called animated Gif) is what currently replaces full motion video.

A review of internet studies shows that the effect of animation depends on the metric used to measure effectiveness. Rae and Brennan (1998) did not find any significant effect of animation on recall. Other authors found significant effects of animation on the click-through rate or the intention to click (Cho, 1999). By postulating that clicking is a voluntary action that supposes a conscious treatment of the advertisement and that this treatment will be improved if the stimulus is more attractive, we propose the following:

H5a: Animated banners will exhibit higher click-through rates than static banners.

H5b: There will be an interaction between motion and targeting.

H5c: There will be an interaction between motion and size.

Effect of images. The effect of image presence was essentially studied for traditional media and the results do not appear to match. Finn (1988) found significant and positive relationships between image presence and comprehension in 3 cases out of 5 and memorization in 8 cases out of 12. This improved memorization relies on the fact that graphic information generates more mental codes than verbal information (Childers and Houston, 1984; Unnava and Burnkrant, 1991). Schweiger and Hruschka (1980) show, in a business-to-business context, that the number of calls resulting from persons who saw the advertisement increased when the proportion of text relative to image size decreases. They also show that the presence of pictures does not influence the number of calls generated. Armstrong (2000), in his evaluation of advertisements (ESAP), integrates the illustrations and distinguishes the effects of pictures from drawings. Singh, Lessig, Kim, Gupta, and Hocutt (2000) stipulate that the positive effect depends on the fit of the image with the contents. The presence of an image can be considered as an integral part of the message or just a peripheral item.

Kisielius and Sternhal (1984) conclude that liveliness of the message is inextricable of the message itself and that its evaluation is dependent on the fit between the contents of the advertisement and the image itself. Edell and Staelin (1983) showed that individuals exposed to announcements with a framed image (that is, commented with the text that connects the image to the product), are more likely to remember and estimate the attributes of the product than individuals exposed to an unframed image.

On the other hand, image presence can be an element of the vividness (Fortin and Dholakia, 2000) of the message. This vividness should increase the advertisement's effectiveness. Moreover, vividness, according to the ELM model (Petty, Cacioppo, and Schumann, 1983), should act positively by the peripheral route in the case of weak motivation to process. Within the context of internet, Chtourou and Chandon (2000) found that the effects of picture presence on the memorization and the intention to act were not linear. This effect depends on the size of the banner. We suggest that

- H6a: The presence of images will have a positive effect on the click-through rate.
- H6b: There will be an interaction between the size and the presence of images.
- H6c: There will be an interaction between targeting and the presence of images.

"Call to action" mentions. A certain number of studies showed that internet specific variables, notably the mention "click here" as well as the presence of "trick banners" (www.bannertips.com) have a very strong effect on click-through rates. "Trick banners" consist of the insertion of a simulation of the operating system, trying to persuade an internet user that the banner is a message of his own system and so that it becomes necessary to click on it to continue to work. One could think that the mention "click here" and the "trick banners" stimulate the urge to click. This might be particularly effective because clicking is an impulsive behavior. Our search being limited to the behavioral effect of clicking on a banner, we can only speculate on the aptness of such

craftiness in terms of image for the advertised brand. However, we should test the effect of these variables since they are usually recommended by creative agencies and frequently used by announcers. Based on this:

- H7: The presence of call-to-action mentions, such as "click here," will have a positive effect on the click-through rate.
- H8: The presence of "trick banners" will have a positive effect on the click-through rate.

The mention of the brand name

Two effects can be potentially expected. The presence of the brand name in the advertisement should contribute to reassure the internet user and to legitimize the information search cost. However, not mentioning the brand could raise curiosity and stimulate the seeking of additional information. We can make an analogy between not mentioning the brand name and the techniques of "teasing," which are supposed to be beneficial for the memorization but which may introduce the problem of false recognition of the advertisement (i.e., the attribution of the advertisement to another brand). Since we are in front of two contradictory effects, we shall ask a research question:

- RQ9: What will be the effect of the presence of a brand name on the click-through rate?

We complete the list of factors by considering the type of announcer (click only versus "click and mortar" companies). We believe this variable to be important. For announcers exclusively doing business on internet, it is likely that their observed click-through rate would be superior because the internet is basically the only

medium to access their site. We introduce also one variable related to the media plan: the number of impressions (displays is a better-suited term) to study a possible decrease of the click-through rate for the most massive campaigns (saturation effect).

- H10: "Click only" advertisers will show a higher click-through rate than "click-and-mortar" ones.
- H11: The number of impressions will have a direct effect on the click-through rate.

METHODOLOGY

Sample

The study examined closely all the advertising insertions of 77 customers of a large advertising agency over the period from April 1999 to April 2000. The agency allowed the use of this database on the understanding that we would use aggregate data only and not reveal any results that might infringe on confidentiality aspects of the data. A total of 1,690 insertions involving banners were examined. The advertisers came from various sectors. For every advertiser, all the orders were collected. From this exhaustive base, we proceeded to several filtering stages. The nonexecuted orders were eliminated, as well as the orders used for technical trials. We eliminated any insertion that had less than 25 impressions. We also eliminated in-house advertisements (i.e., announcements inserted by the agency for its own promotion). Our final sample included 1,258 insertions.

Several aggregation levels can be chosen to study the click-through rate. The DART database contains all the insertions. An insertion corresponds to a banner placed in a specified page for a specified date and is the most elementary level of analysis. For our analysis, we

studied the click-through rate at the placement level (and not the banner one) since we test the effect of the type of page.

To measure the effect of a variable, one should calculate the variation of the click-through rate according to the modalities of this variable (for example, one examines average click by sector). We can calculate the average click-through rate in two different ways. One can calculate the average of the click-through rates of the banners of the sector, or one calculates the total number of clicks of the sector divided by the total number of insertions in this sector. In the first case, one obtains an unweighted average rate. In the second case, we obtain a weighted average rate. Those two rates are equal only if the relation between number of click and number of impression is strictly proportional. On the other hand, if the click-through rate depends on the number of impression, the two averages are not identical. This distinction is important because when one use the second method (as do most actors), successful small campaigns get diluted by unsuccessful large campaigns. As a matter of fact, big campaigns are less effective, probably because they are less targeted. For our study, instead of working on the weighted average rate, we use the unweighted average and we introduce the number of impressions as a covariate in our ANCOVA model to neutralize its effect.

RESULTS

Preliminary results

The average click-through rate found (on the filtered sample) is 1.5 percent. The weighted average is 0.9 percent, which is very close to the total market average for the studied period. The median rate is 0.9 percent. The shape of the distribution is quite asymmetric (skewness = 6.7; significant at $p < .01$ level) and concentrated, as shown in Figure 1.

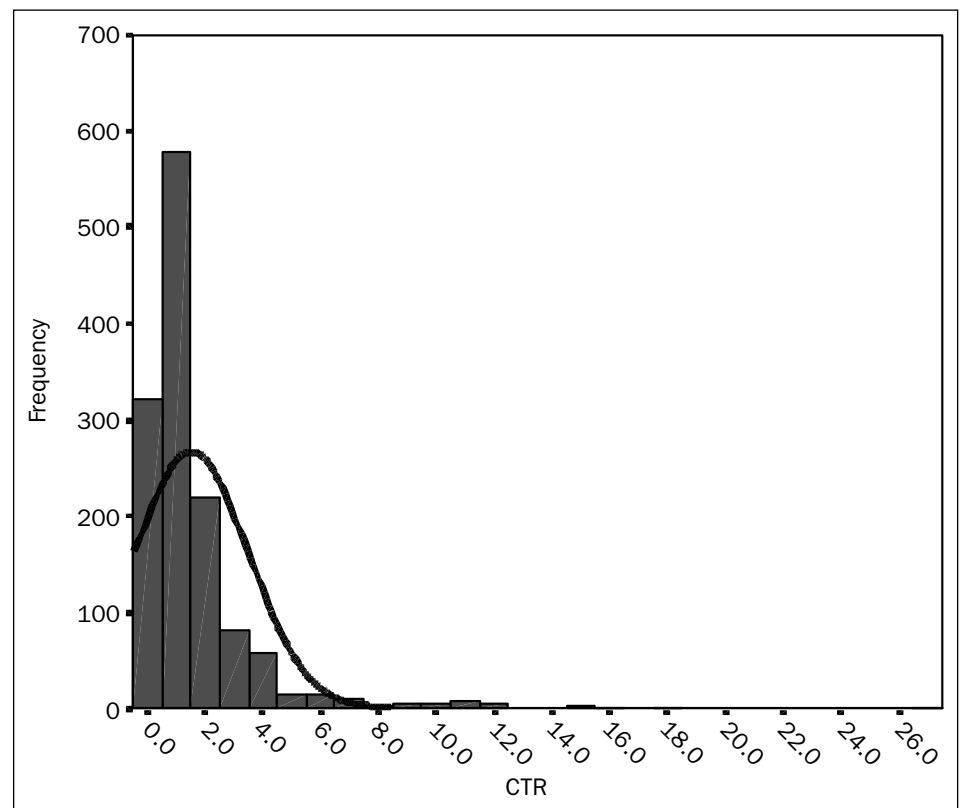


Figure 1 Distribution of the Click-through Rate

The shape of the distribution of the click-through rate makes it incompatible with the hypothesis of normality for analysis of variance. To remedy the problem of the extreme values and the asymmetry of the distribution, we transformed the click-through rate into the logarithm of the click-through rate. Instead of working with an additive model $ctr = \alpha + \sum \beta X_i + \varepsilon$, we work with a multiplicative model: $ctr = \alpha + \sum \beta X_i + \varepsilon$.

The graph of the distribution of the logarithm of the click-through rate ($\ln(\text{CTR})$) is shown in Figure 2.

Analysis of variance

Table 2 is the between-subject table ranking the factors according to the strength of their relationship with the $\ln(\text{CTR})$. Effect sizes are given under the column Eta^2 . Results provide support for Hypoth-

eses H3, H5a, H7, H8, and H10 (using the classical 5 percent risk level).

The results validate globally the conclusions of previous empirical studies. The most important effect is obtained by the technique of "trick banners." Their presence explains 24.8 percent of the variation of the click-through rate and their effect is, as expected, positive. The second most important effect is the category of the announcer. "Click only" announcers, who have no physical shops, have a click-through rate higher than the others. The mention "click here" has a positive effect on the click-through rate. The saturation effect is significant but weak ($p = 0.06$).

Effect of the size

Globally the size of the banner also has a significant and positive effect. If we examine the five sizes, Figure 3 shows a ceiling

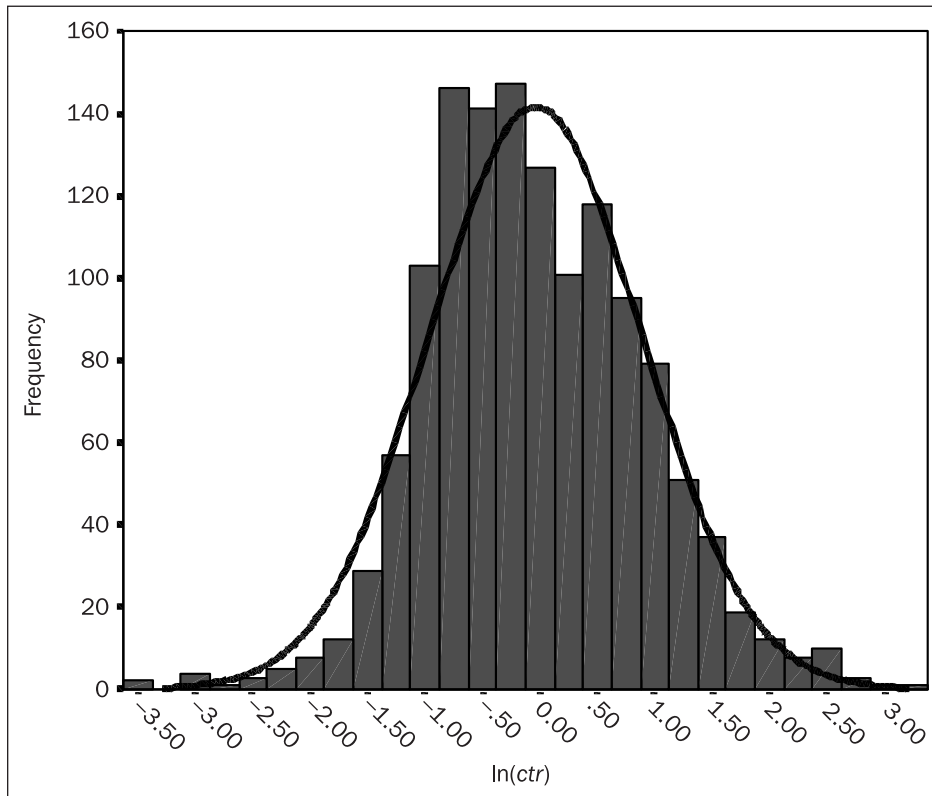


Figure 2 Distribution of the Logarithm of Click-through Rate

effect. The contrast analyses and post hoc tests indicate that there is no significant difference between the two bigger sizes: 234 * 60 and 468 * 60.

These results reconcile those of Drèze and Hussherr (2000), who showed that the size difference between the 468 * 60 and 234 * 60 banners had no significant effect on recall, and those of Chtourou and Chandon (2000), who showed that the difference between the sizes 468 * 60 and 234 * 30 has a significant effect on the intention to spread positive word of mouth.

Effect of the animation

Advertisers use animation quite extensively. Only 91 insertions over the 1,258 studied were not animated. This choice turns out to be beneficial because the animation appears to improve the click-through rate in a significant way. However,

the effect is weak ($\eta^2 < 1$ percent). The hypothesis of an interaction between animation and size is not significant ($p < .089$). However, the direction of the relationship is not consistent with that found by Chtourou and Chandon (2000). The effect of animation is positive for the small advertisements (mainly 120 * 90 pixels), while the effect for the larger banners (234 * 60 and 468 * 60) is nonexistent (even negative) (see Figure 4). The interaction between animation and targeting is not significant. The effect of animation is positive, whatever type of page. The static advertisements generate less click-through even if the page is targeted.

Effect of the presence of images

The presence of images seems to have no effect on the click-through rate, whatever the size and the placement of the banner (either the direct effect and the two interaction effects are not significant).

TABLE 2
Results of Analysis of Variance

Source	F Test	Sig.	Eta ²	Hypothesis	Supported Yes/No
Trick banners	407.7	.000	.248	H8	Yes
On line	57.9	.000	.045	H10	Yes
Click here	15.9	.000	.013	H7	Yes
Size	3.6	.007	.011	H3	Yes
Motion	8.5	.004	.007	H5a	Yes
Size * motion	2.2	.089	.005	H4/H5c	No
Number of impressions	3.5	.063	.003	H11	No
Targeting	3.0	.082	.002	H1	No
Brand name	2.8	.097	.002	RQ9	No
Pictures	.001	.981	.000	H6a	No
Pictures * target	.068	.794	.000	H6c	No
Pictures * size	.225	.925	.001	H4/H6b	No
Motion * target	.230	.632	.000	H2/H5b	No

R squared = .448 (adjusted R squared = .438)

This result is similar to the one obtained by Donthu, Cherian, and Bhargava (1993), who showed that there is no significant relation between the proportion of space occupied by the image and the memorization, for outdoor advertising. This suggests that the effect of images depends on the media used. Another explanation would be that the presence of images should be analyzed while considering its fit with the message. The images that are only peripheral (low fit) cannot be beneficial for the message. Finally, we note that because of the current constraints of the internet medium, the majority of the images are product representations rather than artistic photography.

Effect of targeting

The effect of targeting turns out to be positive. Insertions on targeted pages have a better click-through rate than those that are not targeted. This effect is significant at ($p < .04$). This confirms the results already obtained in previous studies.

Advertisements that do not mention the brand have a better click-through rate than the others.

Effect of the presence of a brand name

As with the animation, the effect of brand name was difficult to ascertain because the number of announcements not mentioning the brand were quite small (87). The effect is negative but not significant ($p < 0.1$). Advertisements that do not mention the brand have a better click-through rate than the others. The explanation probably lies in the fact that, by not mentioning the brand, the advertiser sharpens the curiosity of web users and invites them to look for additional information by clicking on the banner.

CONCLUSIONS

Despite its limits, the click-through rate is an interesting and original measure of advertising effectiveness. It can be seen

from two points a view: an immediate response to an advertisement and a behavioral action to request further information. We studied the effects of some variables that were supposed to enhance advertising effectiveness either in traditional media or on the internet. Results provide support for Hypotheses H3, H5a, H7, H8, and H10. The effect of image presence (already controversial in traditional media) has not been confirmed. The moderating effect of involvement (here approached by the type of hosting page) has not been confirmed either. This would suggest that the internet can be considered as a high-involvement media and that vividness may not have any differential effect. The effect related to the "trick banners" raises some questions given that it is quite dominant. We already suspected its influence on the click-through rate anecdotally, but our study demonstrates empirically that its impact is quite strong, everything else being equal, which had not been tested before. This underlines perhaps the lack of experience of internet users at this stage of development. More fundamentally, this result brings us back to the objectives of an advertising campaign on the internet. Is it wise to increase clicks at all costs without worrying about the consequences for brand image of deceived users?

LIMITS AND FUTURE RESEARCH

The web is emerging as a new territory for research on advertising effectiveness. The unique features of this medium reveal opportunities to record actual consumer behavior, which facilitates data collection. Our research, using market data,

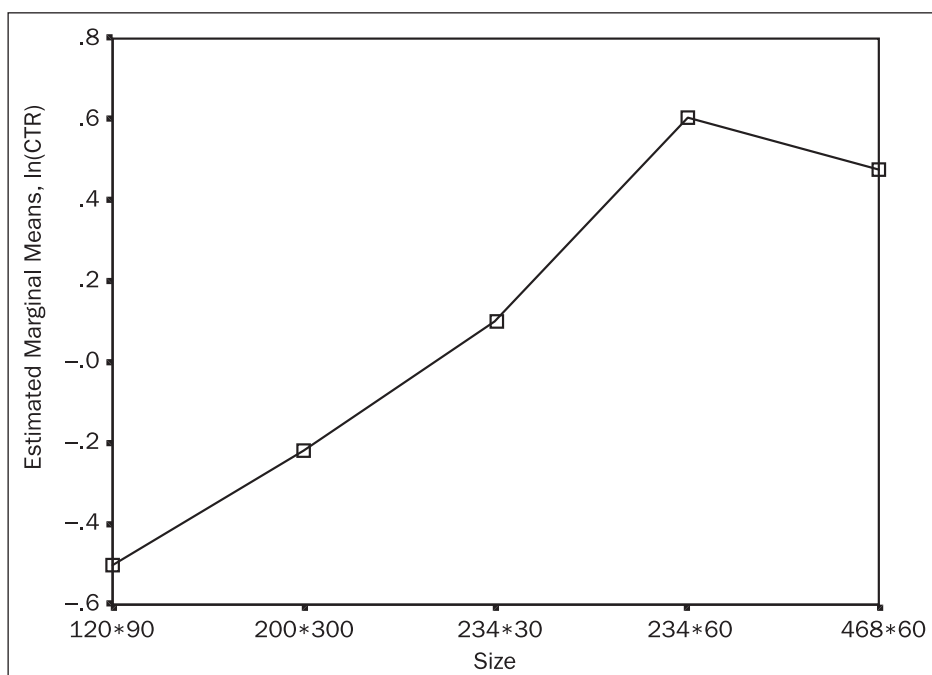


Figure 3 Effect of Different Sizes on the ln(CTR)

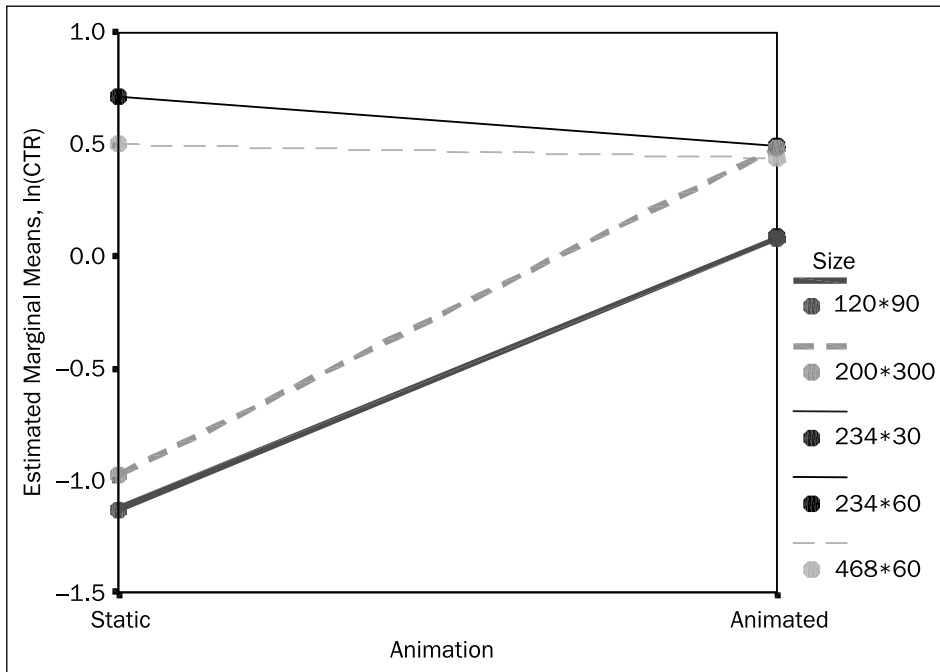


Figure 4 Effect of Animation for the Different Sizes

is of the quasi-experimental type. Consequently, the sizes of the various cells of the plan are not well balanced, which in turn limits the possibilities for analysis. For example, we cannot test the interaction between size and targeting because all the sizes are not available for every page placement. The second limit results from the indicator itself: the click-through rate is only an estimate of information-seeking behavior. A study by the firm Engage (summer 2001) revealed that only 25 percent of conversions actually result from initial click-through. Firms only tracking the first conversion after a click are hence missing (on average) 75 percent of their campaign's performance. We cannot with this data extrapolate the "quality" of the click-through from an attitudinal perspective. Although useful, this sort of data suffers from the same drawbacks that plagues scanner data, unless you can trace it back to an individual profile of some kind. The challenge of future studies is to link attitudinal data with click-through

data to evaluate the true motivations of web users when they proceed to click on a banner advertisement. Further studies should also strive to examine the relationship between click-through rates and conversion rates from visitors to buyers on commercial storefronts. **JAR**

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JEAN-LOUIS CHANDON is a professor of marketing at IAE Aix-en-Provence, part of University Aix Marseille 3, in France. He received his Ph.D. from Northwestern University. He is a specialist in media planning techniques and media metrics. His work has been published in numerous collaborative books and chapters worldwide in both French and English. Dr. Chandon's work has been published in numerous journals, including the *Journal of Consumer Research*, the *Journal of Euromarketing*, the *Journal of Economic Psychology*, and the *International Journal of Service Industry Management*. He is also director of the DESS graduate program in applied marketing at the IAE Business School in France.

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MOHAMED SABER CHTOUROU is a lecturer at the University of Paris 12 Creteil (France) and a member of the

IRG Research Center. He received his Ph.D. from the University of Aix Marseille 3. His dissertation was completed under the direction of Dr. Jean-Louis Chandon. Within the dissertation, he worked for Wanadoo Regie (France) as a research manager where he collected the data for the present study. He also participated to the elaboration of IAB France's studies. His is the author of a number of contributions to collective books, communications, and papers published in peer-reviewed journals.

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DAVID R. FORTIN is senior lecturer in marketing at the University of Canterbury in New Zealand. He received his Ph.D. from the University of Rhode Island. His research has been published in such journals as the *Journal of Business Research*, *Psychology & Marketing*, the *International Journal of Entrepreneurship and Innovation Management*, the *British Food Journal*, and *Telematics & Informatics*. He has served as guest editor for a special issue of the *Journal of Business Research* (2002) and is the director of Web-Lab, an online experimental consumer research portal [www.mang.canterbury.ac.nz/weblab].

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APPENDIX I**Size of the Cells for the Different Experimental Conditions**

Animation * Size			
	Animation		Total
	No	Yes	
<i>Size</i>			
120 * 90	35	20	55
200 * 300	2	5	7
234 * 30		6	6
234 * 60	25	237	262
468 * 60	29	899	928
Total	91	1,167	1,258

Animation * Targeting			
	Targeting		Total
	No	Yes	
<i>Animation</i>			
No	52	39	91
Yes	795	372	1,167
Total	847	411	1,258

Pictures * Targeting			
	Targeting		Total
	No	Yes	
<i>Pictures</i>			
No	332	113	445
Yes	515	298	813
Total	847	411	1,258

Pictures * Size			
	Images		Total
	No	Yes	
<i>Size</i>			
120 * 90	5	50	55
200 * 300	1	6	7
234 * 30	4	2	6
234 * 60	124	138	262
468 * 60	311	617	928
Total	445	813	1,258

APPENDIX I (cont'd)**Cell Size of the Different Levels**

	Value Label	N
Presence of brand name	No	87
	Yes	1,171
Click only	No	454
	Yes	804
Pictures	No	445
	Yes	813
Targeted	No	847
	Yes	411
Click here	No	630
	Yes	628
Size	120 * 90	55
	200 * 300	7
	234 * 30	6
	234 * 60	262
	468 * 60	928
Animation	No	91
	Yes	1,167
"Trick banners"	No	988
	Yes	270