

## MODE AND VISUALIZATION EFFECTS IN ONLINE MARKETING RESEARCH

*PAUL MCDEVITT, The University of Illinois at Springfield*

---

*This study investigates the importance of data collection mode (online versus mail) and the use of a visual cue on two dependent measures of survey quality (response rate and data quality) and two dependent measures of consumption outcomes (customer satisfaction and repurchase intent). Primary data are gathered from a proprietary survey based on a 2 x 2 experimental design. The findings confirm: (1) the presence of a sizeable and significant mode effect on survey quality but no mode effect on satisfaction or repurchase intent and (2) the absence of a visual cue effect on any quality or consumption outcome measure.*

---

### INTRODUCTION

Senior consultants at McKinsey and Company once reported that many of their clients spend less than one percent of their time with their customers (Leszinski et al. 1995). Rust, Zeithaml and Lemon, in their award winning book *Driving Customer Equity* (2000), reported that customer-focused managers struggle continually with product-focused organizational structures and processes. Decades after the arrival of the marketing revolution, the struggle to get close and stay close to the customer continues.

With the Internet, help is here. The Internet provides managers with a communication mode that can immediately and inexpensively energize customer relationship building efforts. Carefully deployed as part of a thoughtful communication strategy, the Internet enables managers to reach out and touch customers either individually or en masse. An increasingly important component of this effort is online marketing research. Communicating online with customers before and after the sale is becoming more commonplace (Miller 2001). While considerable work remains, researchers continue to build an impressive knowledge base about improving online survey research as a means for

communicating with and understanding customers.

This paper extends that knowledge base by investigating two key subjects in contemporary Internet research: mode effect and visualization. Specifically, the author investigates the influence of survey mode and a visual cue on four dependent variables: two measures of survey quality (response rate and data quality) and two consumption outcome measures (customer satisfaction and customer repurchase intent). The focus on survey mode reflects a continuing need to understand the strengths and weaknesses of online data collection versus traditional modes, while the focus on visualization reflects the unmatched - and largely untapped - potential of the Internet to accommodate striking visual cues to improve survey quality.

### PREVIOUS RESEARCH: MODE AND VISUALIZATION IN SURVEY RESEARCH

#### Mode Effects on Survey Response Rate and Data Quality

Survey research inevitably involves an important trade-off between survey quality and cost. Leaders in the survey research industry (For example, Dillman 2002) have noted a growing reliance on Internet surveys and have concluded that this trend reflects the marked cost advantages of web-based versus traditional survey modes. (As early as 1998 Rosenblum and

Grecco reported average cost and turnaround savings of more than forty percent for on-line studies; in 2000 The Perseus Development Corporation claimed cost and turnaround savings of 80 - 90 percent for web versus telephone surveys.) However, the quality of web-based surveys - including sources of error and remedial strategies - is not yet well understood (Dillman 2002). The importance of this issue can hardly be overstated. All other things equal, if web-based surveys are even approximately comparable in quality to other data collection modes, the Internet is the future of survey research.

Dimetrosky, Khawaja and Degens (2001) reviewed a growing research stream investigating the effects of mode on survey response rate and concluded that response rates for both web and mail surveys were good though not equally good. Web surveys generally have lower response rates than mail surveys: 28 percent versus 47 percent (Medlin, Roy and Chai 1999); 37 percent versus 48 percent (Guterbock et al. 2000); and 27 percent versus 42 percent (Kwak and Radler 2000). Schaeffer and Dillman (1998) and Sheehan and McMillan (1999) reported similar findings for e-mail versus mail surveys.

A more modest set of findings examined mode effects on survey data quality. Researchers have used a variety of data quality measures, including two for open-ended questions: item response rate and total number of words per question. Schaeffer and Dillman (1998) found higher item response rates in email versus mail questionnaires, and Mehta and Sivadas (1995) and Schaeffer and Dillman (1998) reported that, on average, email respondents offered longer responses to open-ended questions than mail respondents.

### **Visualization Effects on Survey Response Rate and Data Quality**

The efficacy of visual cues in affecting survey outcomes remains largely unexplored territory. A recent meta-analysis (Edwards et al. 2002) of published research or dissertations cited in 14

bibliographic data bases in the medical sciences, the social sciences, business and statistics and engineering identified 75 factors used to influence survey response rates. Visual cue usage was not among the 75 factors.

There are two schools of thought on the use of visual cues in survey research. The first holds that - in the case of electronic surveys - complex, visually attractive questionnaire presentations may create substantial technical problems at the questionnaire downloading and presentation stages:

“...Advanced formatting using the latest programming features may cause response rates to be lower than those obtained by simpler more conventional designs, the opposite of their intended effect (Dillman et al. 1998, 1).”

A second view holds that visual cues may actually improve survey response rates as well as data quality. For example, visual cues may arouse feelings of issue salience, defined by Heberlein and Baumgartner (1978) as the importance and timeliness of a topic to an individual. Researchers have clearly demonstrated a relationship between issue salience and survey response rate. Heberlein and Baumgartner (1978), Roberson and Sundstrom (1990) and Martin (1994) all found that issue salience exerted a strong, significant and positive relationship on mail survey response rates. Moreover, issue salience outperformed all of the other response-inducing survey tactics studied by Heberlein and Baumgartner (1978). As for email surveys, Sheehan and McMillan (1999) also found a positive and significant relationship between self-reported issue salience and response rates.

The mail survey literature provides modest evidence of the effectiveness of using a picture for improving postal response rates. Dommeyer and Ruggiero (1996) reviewed research investigating the effects of inclusion of a picture of a physically attractive researcher on the cover letter of mail surveys. They concluded that

most findings substantiated a positive relationship between inclusion of a photograph and the extent of participation or helpful behavior received.

Another way visual cues may improve response rates and data quality is by remedying the well-known problem of intangibility in services marketing. Mittal (1999) argued that the incorporeal nature of services causes consumers difficulty understanding a service and forming evoked sets at the pre-purchase stage and also causes consumers difficulty evaluating a service experience at the post-purchase stage. Parasuraman, Zeithaml and Berry (1985) and Bateson (1995) similarly argued that, because service offerings cannot be displayed or easily communicated to customers, quality assessment could be troublesome. As a treatment for intangibility, visualization (Berry and Clarke 1986) seeks to “tangibilize” the intangible by recreating a vivid mental picture of a service encounter, thereby removing a possible source of non-response. Using a photograph is an example of visualization as a means for tangibilizing the intangible.

To summarize, the use of visual cues may improve response rates and data quality by:

- triggering issue saliency
- appealing to sex or
- tangibilizing the intangible.

Remarkably, despite the obvious visual potential of the Internet, there appears to be no reported research investigating the effects of a photograph in electronic survey research.

### **Mode and Visual Cue Effects on Satisfaction and Repurchase Intent**

This study extends the evaluation of mode and visual cue effects to two additional dependent variables of interest to marketing researchers and practitioners: customer satisfaction and repurchase intent. Oliver (1999) described satisfaction as pleasurable fulfillment of a need, desire or goal fulfilled through consumption. Satisfaction is important to marketers since it is the

first stage of an evolutionary process that may result in brand loyalty and virtually certain repurchase intent (Oliver 1999). Rust and Zahorik (1993) and Bryant and Cha (1996) investigated the relationship between satisfaction and repurchase intent and found a strong, significant and positive relationship.

### **RESEARCH HYPOTHESES**

In this study, the author investigates eight hypotheses. The first two hypotheses include response rate as a dependent measure:

**H<sub>1</sub>:** There are no differences in response rates between electronic (web based and email) and mail survey modes, and

**H<sub>2</sub>:** There are no differences in response rates between surveys with and without a visual cue.

The next two hypotheses explore the relationships between data quality versus mode and visual cue:

**H<sub>3</sub>:** There are no differences in data quality between electronic and mail survey modes, and

**H<sub>4</sub>:** There are no differences in data quality between surveys with and without a visual cue.

The third pair of hypotheses focuses on satisfaction as the dependent variable:

**H<sub>5</sub>:** There are no differences in satisfaction between electronic and mail survey modes, and

**H<sub>6</sub>:** There are no differences in satisfaction between surveys with and without a visual cue.

Finally, the last two hypotheses explore the relationships between repurchase intent versus survey mode and visual cue:

- H<sub>7</sub>:** There are no differences in repurchase intent between electronic and mail survey modes, and
- H<sub>8</sub>:** There are no differences in repurchase intent between surveys with and without a visual cue.

### RESEARCH DESIGN AND IMPLEMENTATION

The author developed and implemented an experimental research design as part of the customer satisfaction survey for a proprietary event: the Iron Horse Triathlon. This is a high profile, athletic event held in Springfield, Illinois, USA, each June. One of the oldest continuous multisport events in the country, the Iron Horse includes a 1.5 mile swim, a 45 mile bike race and a 10 mile run. The event enjoys a highly brand loyal following of participants residing largely in the upper Midwest states. The event has prospered in an intensely competitive market environment for more than two decades. Perhaps one reason for its success has been the year round communication program between race management and participants. An annual satisfaction survey is the linchpin of this program.

Beginning in 2001, the event management team began accepting electronic registration through an online subscription vendor, Sign Me Up Sports ([www.Signmeupsports.com](http://www.Signmeupsports.com)), in Chicago, Illinois. By 2002, 56 percent of participants had registered online, and 96 percent of all participants reported a personal email address. Event management wished to explore the possibility of conducting its annual satisfaction survey online rather than by mail and to investigate methods for improving online response rate and data quality.

The research design was a 2 x 2 random factorial design developed to investigate the effects of data collection mode and a visual cue on the four dependent measures: response rates, data quality, satisfaction and repurchase intent. The two modal treatments included mail (the traditional treatment) and electronic data collection

(the experimental treatment). The two visual cue treatments included a cover letter with the race logo (the traditional treatment) and a cover letter with a personalized professional photograph (the experimental treatment).

Following Stafford's recommendations (1996), researchers sought to use a photograph that related clearly and specifically to the Iron Horse event and that, to the extent possible, appealed personally to each respondent. The most salient moments in the event are generally considered the start and the finish. Therefore, the visual cue options were considered either a picture of each participant finishing the event ( $N = 649$ ) or a picture of each starting wave ( $N = 7$ ). (A wave is a predetermined subset of athletes based usually on age and sex, such as males 20 - 24 years, females 20 - 29 years, etc. Wave starts are used in larger events to help disperse participants in the swim and bike segments of the race.) Using the wave option, participants in the first wave would receive a picture of their wave starting the event, participants in the second wave would receive pictures of their wave, and so forth.

Wave start photographs were selected for two reasons. The wave photographs were personalized in that each wave was small enough that most athletes would be able to identify themselves in their respective wave pictures. Second, the requirement to work with only seven wave photographs rather than 649 individual participant photographs substantially reduced both the cost and the complexity of implementation.

All 649 members of the proprietary client base who listed both an email and a mail address and who completed the event were randomly assigned to one of the treatment groups below: 324 clients received a questionnaire through the U.S. Postal Service and 325 clients received a questionnaire electronically. Within each group, approximately half of the respondents received a cover letter with a logo and the rest received a letter with a professional photograph of their wave.

Mode	Logo	Photograph	Total
Mail	163	161	324
Electronic	164	161	325
Total	327	322	649

The questionnaire consisted of a cover letter and 25 items, including 23 forced-choice items and two open-ended questions.

Because respondents might be involved preparing for another event soon after the Iron Horse, every effort was made to distribute the questionnaires as soon as the photographs became available and the surveys could be printed. The first mail questionnaires were sent out on June 26, 2002 after the June 16 event. The first electronic questionnaires, consisting of an email embedded questionnaire, were sent out on July 3, 2002.

Multiple contacts were made for each survey. Post card reminders were sent out one week after the original postal mailing to mail recipients. A second mail questionnaire was sent two weeks after the original mailing. For email recipients, a follow-up electronic questionnaire was sent, this time as an email with a web-linked questionnaire, nineteen days after the first mailing. Follow ups in each treatment group were directed only to those persons who had not yet responded.

The research team chose not to use incentives for three reasons. First, respondents in proprietary research are real, flesh and blood clients. As such, a reasonably higher response was expected *a priori* than for, say, a public opinion survey of randomly selected individuals. Second, issue salience was expected to be very high for such a high involvement activity, presumably diminishing the need for traditional incentives. Finally, the research team felt that an incentive might actually dilute the nature and strength of the personal relationship between the client base and the race management team.

## RESULTS

The first dependent measure is response rate, measured as the cooperation rate (American Association for Public Opinion Research 2004): the ratio of all participants from whom a complete or partial questionnaire was received divided by all participants contacted. This measure excludes from the base those respondents who were unable to respond because they were known not to have received the questionnaire. Of the 324 mail questionnaires, only one (.003 percent) was returned as non-deliverable. Of the 325 electronic questionnaires, 20 (6 percent) were returned as non-deliverable. Non-deliverability, sometimes referred to as churn, continues to be a formidable challenge in online surveys.

Table 1 reports response rates by mode. A first impression is that the response rates are quite high, ranging from 49.5 percent (electronic) to 69.3 percent (mail). These response rates, which compare favorably with those of previous researchers, are significantly different ( $p = .000$ ). Further, both sizable and significant differences persist when controlling for visual cue. Response rates for the logo treatment groups are 68.5 percent for the mail survey and 51.6 percent for the electronic survey ( $p = .002$ ); responses from the photograph treatment groups are 70.2 percent for the mail survey and 47.3 percent from the electronic survey ( $p = .000$ ). Altogether, these findings strengthen the case for higher response rate expectations from mail rather than electronic surveys.

In contrast, the visual cue effect ( $H_2$ ) on survey response rates reported in Table 2 is very small: 60.3 percent response with the logo versus 59.2 percent response with the photograph. This finding persists when controlling for mode. For the mail survey, response rates for the logo treatment are 68.5 percent versus 70.2 percent for the photograph. For the electronic survey, response rates are 51.6 percent for the logo treatment group versus 47.3 percent for the photograph. The response rate differences are not significant for the total group or for either modal treatment group.

**TABLE 1**  
**Response Rate by Survey Mode**

	Survey Mode	
	Electronic	Mail
<i>Cue: Logo</i>	51.6%	68.5%
<i>n</i>	155	162
<i>test</i>	<i>chi-sq = 9.45; p-value = .002</i>	
<i>Cue: Photograph</i>	47.3%	70.2%
<i>n</i>	150	161
<i>test</i>	<i>chi-sq = 16.79; p-value = .000</i>	
<i>Total: Logo Plus Photograph</i>	49.5%	69.3%
<i>n</i>	305	323
<i>test</i>	<i>chi-sq = 25.67; p-value = .000</i>	

**TABLE 2**  
**Response Rate by Visual Cue**

	Visual Cue	
	Logo	Photograph
<i>Mode: Electronic</i>	51.6%	47.3%
<i>n</i>	155	150
<i>test</i>	<i>chi-sq = .56; p-value = .455</i>	
<i>Mode: Mail</i>	68.5%	70.2%
<i>n</i>	162	161
<i>test</i>	<i>chi-sq = .11; p-value = .745</i>	
<i>Total: Electronic Plus Mail</i>	60.3%	59.2%
<i>n</i>	317	311
<i>test</i>	<i>chi-sq = .08; p-value = .781</i>	

The absence of a significant visual cue effect is an unexpected finding that will be revisited below. For now, the Table 2 results provide clear and strong testament to the ineffectiveness and insignificance of the photograph as a response stimulant.

Table 3 reports the effects of both the mode (H<sub>3</sub>) and visual cue (H<sub>4</sub>) treatments on data quality. Four measures of data quality were used: item response rates and total word counts to each of two open-ended questions. The first question, **Recommendations**, was item number 13 in the instrument:

- **What recommendations do you have for improving the Iron Horse Triathlon?**

The second question, **End Comments**, was the 25<sup>th</sup> and final item:

- **Please use the space below for any other comments you wish to make regarding the Iron Horse Triathlon.**

Consider first the effect of survey mode on data quality. The item response rates to the **Recommendations** question are relatively high and similar in value for both modes: 77.6 percent for electronic versus 71.9 percent for mail. The item response rates to the **End Comments** question are relatively low and also are similar: 51.3 percent for electronic versus 59.4 percent for mail. In neither case are the response rate differences significant.

The next two data quality measures are total word counts. The mean word counts for the **Recommendations** question are low, similar and not significantly different between modal treatment groups: 22.8 words for electronic versus 21.4 words for mail. Word counts for the **End Comments** question are relatively high and are not significantly different: 54.5 words for electronic versus 47.1 words for mail. Altogether, across the four data quality measures, there is no evidence of a sizeable or significant difference in data quality by survey mode (H<sub>3</sub>).

Consider next the relationship between data quality and visual cue (H<sub>4</sub>) reported in Table 3. The item response rates and the total word counts to both open ended questions are virtually indifferent to the visual cue treatments with no significant differences anywhere. Item response rates for **Recommendations** are 74.9 percent for the logo treatment group versus 73.5 percent for the photograph. The rates for the **End Comments** question are 56.5 percent for the logo treatment group versus 55.7 percent for the photograph. The word counts for the **Recommendations** question are 21.1 words versus 22.9 words for the logo and photograph, respectively, and the word counts for the **End Comments** question are 47.7 and 52.2 words, respectively.

Taken together, these results provide no evidence either of a sizeable or significant difference in data quality by visual cue (H<sub>4</sub>).

Next, we consider the relationships between customer satisfaction and the treatment variables. Event participants were asked the following Satisfaction question:

- **In terms of YOUR OVERALL EXPERIENCE, how satisfied or dissatisfied were you with the Iron Horse triathlon this year?**

A seven-item Likert scale with the following anchor and mid range responses provided response options:

1. Extremely Satisfied
- 2.
- 3.
4. About Equally Satisfied & Dissatisfied
- 5.
- 6.
7. Extremely Dissatisfied

The mean **Satisfaction** ratings of respondents in both the mode (H<sub>5</sub>) and visual cue (H<sub>6</sub>) treatment groups reported in Table 4 are very similar. The mean rating for the electronic survey is 2.29 and for the mail survey is 2.33. The mean

**TABLE 3**  
**Data Quality by Survey Mode and Visual Cue**

	Survey Mode		Visual Cue	
	Electronic	Mail	Logo	Photograph
<i>Item Response: Recommendations</i>	77.6%	71.9%	74.9%	73.5%
<i>n</i>	152	224	191	185
<i>test</i>	<i>chi-sq = 1.57; p-value = .211</i>		<i>chi-sq = .09; p-value = .764</i>	
<i>Item Response: End Comments</i>	51.3%	59.4%	56.5%	55.7%
<i>n</i>	152	224	191	185
<i>test</i>	<i>chi-sq = 2.39; p-value = .122</i>		<i>chi-sq = .03; p-value = .865</i>	
<i>Total Words: Recommendations</i>	22.8 words	21.4 words	21.1 words	22.9 words
<i>n</i>	118	161	143	136
<i>test</i>	<i>t-test = 0.745; p-value = .457</i>		<i>t-test = -1.048; p-value = .295</i>	
<i>Total Words: End Comments</i>	54.5 words	47.1 words	47.7 words	52.2 words
<i>n</i>	78	132	107	103
<i>test</i>	<i>t-test = 1.348; p-value = .179</i>		<i>t-test = -0.851; p-value = .396</i>	

ratings for respondents receiving the logo and the photograph are 2.20 and 2.43, respectively. In neither case is the difference between means significant.

There is a significant difference in the distribution of **Satisfaction** ratings between mode groups. We note, however, that the largest differences are not between numbers of satisfied versus dissatisfied respondents. Rather, the differences are largely between levels of satisfaction, e.g., (1), (2) or (3), or levels of dissatisfaction, e.g., (5), (6) or (7). In fact, pooling satisfaction responses (Satisfied = 1, 2, 3) and dissatisfaction responses (Dissatisfied = 5, 6, 7) and testing mode effects between three way distributions (Satisfied, Dissatisfied, About Equally Satisfied & Dissatisfied) yields no significant differences between satisfaction distributions ( $\chi^2 = 5.407$ ;  $p = .067$ ).

The last two hypotheses investigate the relationships between repurchase intent and mode and visual cue. Participants were asked the following question regarding their likely **Repurchase Intent**:

- **Do you intend to race Iron Horse next year?**

A Likert scale with the following alternatives provided response options:

1. Definitely will race Iron Horse
2. Probably will race Iron Horse
3. Probably will not race
4. Definitely will not race
5. Not sure

The **Repurchase Intent** responses are presented in Table 5. Consider first the mode effect ( $H_7$ ). The mean repurchase intent is quantitatively smaller, i.e., more positive, in the mail



survey than the electronic survey, 1.94 versus 2.13. The difference is significant but small. The response distributions are also significantly different between electronic and mail surveys. However, once again, the major differences are within the top two categories, both of which are positive intents (Definitely and Probably Will Return), and the bottom two categories, both of which are negative intents (Definitely and Probably Will Not Return). If these categories are collapsed, pooling positive repurchase intent categories and negative repurchase intent categories, the three-way response distributions (positive purchase intent, negative purchase intent, Don't Know) are not significantly different ( $\chi^2 = 1.262$ ;  $p = .532$ ) by mode.

As for the visual cue effect, mean **Repurchase Intent** is nearly identical and not significantly different between the treatment group that received the logo and the group that received the photograph (2.01 versus 2.02). There are significant differences between response distributions with and without the photograph. Again, these are attributable largely to differences between positive repurchase intent categories (Definitely Will and Probably Will) and between negative repurchase intent categories (Probably Will Not and Definitely Will Not). If the two positive and the two negative repurchase categories are pooled and three way response distributions are considered (Positive Repurchase Intent, Negative Repurchase Intent and Don't Know/No Answer), the differences are not significant ( $\chi^2 = .504$ ;  $p = .777$ ).

## CONCLUSIONS AND DISCUSSION

The goal of this research was to investigate the quality of Internet survey research as a component of a customer focused communication program. Findings from an experimental survey design embedded in a traditional satisfaction questionnaire administered to a proprietary client group support four conclusions.

First, using two traditional measures of data quality there are no significant differences between the electronic and mail surveys. If this

finding can be replicated in similar product market settings, it poses a strong argument for conducting online marketing research for high involvement, proprietary applications such as that considered here.

Second, there is clear evidence of a substantial and significant mode effect on response rates, with the mail response rate exceeding the online response rate. However, the response for the electronic survey was so high as to attenuate the differential. Support for this premise has been documented, for example, by Curtin (2000), Keeter (2000) and Biemer and Link (2003) who demonstrated that survey data accuracy might not improve within very broad ranges (40 - 70 percent) of non-response. Given their modest costs, therefore, electronic surveys such as this one - with a 50 percent response rate - appear to offer superb value per dollar.

Third, when controlling for demographics that are significantly related to both satisfaction and repurchase intent (Bryant and Cha 1996; Mittal and Kamakura 2001), these findings suggest that survey mode is not related either to satisfaction or to repurchase intent. We know of no reason to expect so *a priori*. This important finding leads us to conclude that, response rate permitting, an electronic survey may be used alone to investigate these important constructs for the event considered here.

Fourth, and perhaps most importantly, we conclude that there is virtually no visualization effect on response rate, data quality, satisfaction or repurchase intent. This is remarkable given the immediately engaging effect of the photographs used in this study.

There are several plausible explanations for the "missing" visual cues effect. First, including a photograph would certainly not improve response rates from participants who were unable to download, complete and/or submit the survey for technical reasons identified by Dillman (1998) and others. For example, several participants reported that they were unable to download the questionnaire-with-photograph

**TABLE 4**  
Satisfaction by Survey Mode and Visual Cue

Satisfaction Scale (1-7)	Survey Mode		Visual Cue	
	Electronic	Mail	Logo	Photograph
(1) Extremely Satisfied	22.0%	24.9%	24.5%	23.0%
(2)	41.3%	43.9%	46.8%	38.8%
(3)	26.7%	15.8%	17.6%	23.0%
(4) About Equally Satisfied & Dissatisfied	7.3%	6.8%	7.4%	6.6%
(5-7) Dissatisfied	2.7%	8.6%	3.7%	8.7%
<i>n</i>	150	221	188	183
mean	2.29	2.33	2.20	2.43
<i>t-test for means</i>	<i>t</i> = -0.299; <i>p-value</i> = .765		<i>t</i> = -1.90; <i>p-value</i> = .059	
<i>chi-square</i>	<i>chi-sq</i> = 10.74; <i>p-value</i> = .030		<i>chi-sq</i> = 6.69; <i>p-value</i> .153	

**TABLE 5**  
Repurchase Intent By Survey Mode and Visual Cue

Repurchase Intent Scale (1-4)	Survey Mode		Visual Cue	
	Electronic	Mail	Logo	Photograph
(1) Definitely Will	13.9%	31.7%	27.2%	21.7%
(2) Probably Will	54.3%	39.3%	41.9%	48.9%
(2.5) DK/Refused	18.5%	14.3%	17.3%	14.7%
(3) Probably Will No	8.6%	11.2%	7.3%	13.0%
(4) Definitely Will No5	4.6%	3.6%	6.3%	1.6%
<i>n</i>	151	224	191	184
mean	2.13	1.94	2.01	2.02
<i>t-test for means</i>	<i>t</i> = 2.597; <i>p-value</i> = .010		<i>t</i> = -0.78; <i>p-value</i> = .938	
<i>chi-square</i>	<i>chi-sq</i> = 17.98; <i>p-value</i> = .001		<i>chi-sq</i> = 10.66; <i>p-value</i> = .031	

because their Internet service provided “text-only” readership capabilities. Thus, as technical difficulties are more or less pervasive, response rate improvements to the visual cue effect will likely be smaller or larger.

There is a second possible explanation for the missing cues effect. If the propensity to respond to a survey is intrinsically high due to, e.g., strong issue salience, then incremental response rate gains to a photograph may be quite modest. Stated more formally, there is likely to be an inverse relationship between issue saliency and gains from response-enhancing efforts such as visual cues. This author’s sense is that issue salience and the effects of issue salience on survey outcomes are topics that deserve substantially more study.

The research reported here suggests a real need for further proprietary research applications in the profit and not-for-profit domains. These findings will likely differ in several important respects from results from broad public opinion surveys. For example, there will likely be differences in types of survey error and in strategies for minimizing error. Until researchers compile a substantial body of “observation and description” findings (Christensen and Radnor 2003), there will be scant progress in developing a useful theory of online research for marketing applications.

## REFERENCES

- American Association For Public Opinion Research, *Standard Definitions*, Survey Methods/Standards and Best Practices, 11 March 2002, <<http://www.aapor.org>>(24 February 2004).
- Berry Leonard L. and Terry Clark (1986), “Four Ways To Make Services More Tangible,” *Business*, October-November, 53-54.
- Bateson, John E. G. (1995), *Managing Service Marketing*, Fort Worth, Texas: The Dryden Press.
- Biemer, Paul B. and Michael Link (2003), “The Impact of Response Rates On Survey Accuracy: When Is Too Little Too Much?” *American Association for Public Opinion Research*, Nashville, Tennessee, May 15-18.
- Bryant, Barbara Everett and Jaesung Cha (1996), “Crossing The Threshold,” *Marketing Research*, 8(4), 20-28.
- Christensen, Clayton M. and Michael E. Raynor (2003), “Why Hard-Nosed Executives Should Care About Management Theory,” *Harvard Business Review*, 81(9), 66-74.
- Curtin, Richard, Stanley Presser and Eleanor Singer (2000), “The Effects of Response Rate Changes On The Index Of Consumer Sentiment,” *Public Opinion Quarterly*, 64(4), 413-428.
- Dillman, Don A. (2002), “Presidential Address: Navigating The Rapids Of Change: Some Observations On Survey Methodology In The Early Twenty-First Century,” *Public Opinion Quarterly*, 66(3), 473-494.
- \_\_\_\_\_, Robert D. Tortura, Jon Conradt and Dennis Bowker (1998), “Influence Of Plain Versus Fancy Design On Response Rates For Web Surveys,” *Joint Statistical Meetings*, Dallas, Texas.
- Dimetrosky, Scott, Sami Khawaja and Phil Degen, “Best Practices For Online Survey Research,” *Quirks Marketing Research Review*, January 2001, <[http://www.quirks.com/Articles/Article.asp?arg\\_ArticleId=656](http://www.quirks.com/Articles/Article.asp?arg_ArticleId=656)> (24 February 2004).
- Dommeyer, Curt J. and Laura A. Ruggiero, “The Effects Of A Photograph On Mail Survey Response,” *Marketing Bulletin*, July 1996, <http://marketingbulletin.massey.ac.nz/article7/research1b.asp> (24 February 2004).
- Edwards, Phil, Ian Roberts, Mike Clark, Carolyn DiGuseppi, Sarah Pratap, Reinhard Wentz and Irene Kwan (2002), “Increasing Response Rates To Postal Questionnaires: Systematic Review,” *British Medical Journal*, 324, 1183-1210.

- Guterbock, Thomas M., Brian J. Meekins, Alf C. Weaver and John C. Fries (2000), "Web Versus Paper: A Mode Experiment In A Survey Of University Computing," *American Association for Public Opinion Research*, Portland, Oregon, May 18-21.
- Heberlein, T. and R. Baumgartner (1978), "Factors Affecting Response Rates To Mailed Questionnaires: A Quantitative Analysis Of The Published Literature," *American Sociological Review*, 43(4), 447-462.
- Keeter, Scott, Carolyn Miller, Andrew Kohut, Robert M. Groves and Stanley Presser (2000), "Consequences Of Reducing Non-Response In A National Telephone Survey," *Public Opinion Quarterly*, 64(2), 125-148.
- Kwak, Nojin and Barry T. Radler (2000), "Using The Web For Public Opinion Research: A Comparative Analysis Between Data Collected Via Mail And The Web," *American Association For Public Opinion Research*, Portland, Oregon, May 18-21.
- Leszinski, Ralph, Felix A. Weber, Roberto Paganoni and Thomas Baumgartner (1995), "Profits In Your Own Back Yard," *The McKinsey Quarterly*, 4, 118-127.
- Martin, C. L. (1994), "The Impact Of Topic Interest On Mail Survey Response Behavior," *Journal of the Market Research Society*, 36(4), 327-337.
- Medlin, Christopher, Subruto Roy and Theong Ham Chai (1999), "World Wide Web Versus Mail Surveys: A Comparison And Report," *Marketing in the Third Millennium*, Sydney, Australia, November 28 - December 1.
- Mehta, R. and E. Sivadas (1995), "Comparing Response Rates And Response Content In Mail Versus Electronic Mail Surveys," *Journal of the Market Research Society*, 37(4), 429-440.
- Miller, Thomas W. (2001), "Make The Call: Online Results Are Mixed Bag," *Marketing News*, September 24, 30-35.
- Mittal, Banwari (1999), "The Advertising Of Services: Meeting The Challenge Of Intangibility," *Journal of Service Research*, 2(1), 98-116.
- \_\_\_\_\_ and Wagner A. Kamakura (2001), "Satisfaction, Repurchase Intent, And Repurchase Behavior: Investigating The Moderating Effect Of Customer Characteristics," *Journal of Marketing Research*, 38(1), 131-143.
- Oliver, Richard L. (1999), "Whence Consumer Loyalty?" *Journal Of Marketing*, 63, 33-44.
- Parasuram, A., Valerie A. Zeithaml and Leonard L. Berry (1985), "A Conceptual Model of Service Quality And Its Implications For Future Research," *Journal of Marketing*, 49, Fall, 41-50.
- Perseus Development Corporation, "Web Surveys - For Knowledge, Lead Management, And Increased Traffic," Survey Tips/White Papers, <[http://www.perseus.com/surveytips/whitepapers/thw\\_websurveys.html](http://www.perseus.com/surveytips/whitepapers/thw_websurveys.html)> (24 February 2004).
- Roberson, Michael T. and Eric Sundstrom (1990), "Questionnaire Design, Return Rates, And Response Favorableness In An Employee Attitude Questionnaire," *Journal of Applied Psychology*, 75(3), 354-357.
- Rosenblum, Jeff and Chris Grecco, "The Future Of On-Line Research," *Quirks Marketing Research Review*, July 1998, <[http://www.quirks.com/articles/article\\_print.asp?arg\\_articledid=357](http://www.quirks.com/articles/article_print.asp?arg_articledid=357)> (24 February 2004).
- Rust, Roland T. and Anthony J. Zahoric (1993), "Customer Satisfaction, Customer Retention And Market Share," *Journal of Retailing*, 69(2), 193-223.
- \_\_\_\_\_, Valerie A. Ziethaml and Katherine N. Lemon (2000), *Driving Customer Equity*, The Free Press, New York.
- Schaefer, David R. and Don A. Dillman (1998), "Development Of A Standard E-Mail Methodology: Results Of An Experiment," *Public Opinion Quarterly*, 62, 378-397.
- Sheehan, Kim Bartel and Sally J. McMillan (1999), "Response Variation In E-Mail Surveys: An Exploration," *Journal of Advertising Research*, 39(4), 45-54.

Stafford, Marla Royne (1996), "Tangibility In Services Advertising: An Investigation Of Verbal Versus Visual Cues," *Journal of Advertising*, 25(3), 13-28.

Vehovar, Vasja, Katja Lozar Manfreda and Zenel Batagelj (2000), "Design Issues In WWW Surveys," *American Statistical Association*, August 13-17, Indianapolis, Indiana.