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# What Consumers Know and What They Do: An Investigation of Consumer Knowledge, Awareness, and Use of Privacy Protection Strategies

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WHAT CONSUMERS KNOW AND WHAT  
THEY DO: AN INVESTIGATION OF  
CONSUMER KNOWLEDGE, AWARENESS,  
AND USE OF PRIVACY PROTECTION  
STRATEGIES

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**ABSTRACT**

This study examines consumer knowledge of privacy-related laws and practices, and consumer awareness and use of strategies that may protect the consumer's privacy. Consumers were found to have very little knowledge of direct marketing practices and regulations. While consumers were fairly well informed on privacy-protection strategies, their use of these strategies was quite low.

This study also investigates whether several consumer traits, namely gender, age, telephone number listing status, and desire to receive direct marketing solicitations, had any relationship to the

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consumer's awareness and use of privacy-protection strategies. It was found that males and young people were more likely than their counterparts to be aware of privacy-protection strategies. Those most likely to use privacy-protection strategies were young people and people who disliked receiving direct marketing solicitations.

## INTRODUCTION: CONSUMER PRIVACY AS A MARKETING ISSUE

Consumer privacy has been a hotly debated marketing and public policy issue for at least the past 30 years (Culnan, 1995; Jones, 1991; Wang & Petrisson, 1993), and has been called "perhaps the toughest public policy issue now confronting the direct-marketing industry" (Kotler & Armstrong, 2001, p. 650). Though privacy concerns originally pertained to limiting government power, concern has more recently extended to the practices of commercial entities, particularly those that rely on databases containing individual-specific consumer information (Nowak & Phelps, 1995). Concern centers on whether businesses utilize fair and ethical information practices, give consumers ample control over information pertaining to them, and respect the wishes of consumers to be left alone (Foxman & Kilcoyne, 1993; Goodwin, 1991; Milne, 2000; Petty, 2000). Lack of consumer control over personal information is central to most discussions of privacy (e.g., Culnan, 1995).

The study presented in this paper focuses on the consumer's knowledge, awareness, and use of strategies that could minimize privacy invasions by direct marketers. While this paper focuses on protection strategies that relate to telephone, mail, and personal interactions between the consumer and marketers, the findings are pertinent to on-line privacy.

### *Background—Consumer Concern About Privacy*

Privacy advocates, claiming to speak on behalf of consumers, have largely depicted the collec-

tion and use of personal information to build marketing databases as "big brother"-like privacy invasions. A number of individual consumers have brought well-publicized lawsuits for alleged privacy violations by direct mailers and telemarketers. Annual polls (Harris, 1996; Harris & Westin, 1990, 1992; Paul, 2001) and other surveys (e.g., Nowak & Phelps, 1992; Phelps, Nowak, & Ferrell, 2000) show the percentage of consumers claiming to be concerned about privacy increasing to more than 80% as compared to just over 30% in the 1970s. Surveys indicate that the majority of consumers are concerned about what companies know about them, how the information was obtained, the accuracy of the information, and with whom the information may eventually be shared. Polls and surveys show that consumers feel violated because they believe too much information about their lives and personal preferences is being exchanged without their knowledge or consent.

Few consumers, however, view all requests for and uses of personal information as invasions of privacy. Certainly, consumers have proven receptive to sharing personal information under certain situations and with businesses and other organizations they trust. Many consumers appreciate the conveniences of credit and purchasing from home, and consumers readily supply information in order to receive customized goods and services, product information, cash incentives, discounts on purchases, and free offers (Gardyn, 2001; Hagel & Rayport, 1997; Paul, 2001). Supermarket club cards represent one example (Sayre & Horne, 2000). Further, most consumers are willing to give up some privacy simply to participate in a consumer society (Milne, 2000; Phelps, Nowak, & Ferrell, 2000).

Cespedes and Smith (1993) observed that the popularity of direct response channels is evidence that many consumers do not really want to be left alone. Rather, they want protection against *unwarranted* uses of personal information while maintaining choice and flexibility in purchasing. However, the fact that unknown marketers collect personal information from both public and proprietary sources, mine that data, and create profiles makes many consum-

ers feel tracked and exploited (Paul, 2001). Concerns center on the sheer volume of the information contained in databases and its vulnerability to unauthorized access and misuse. Consumers are particularly uneasy when information collected to expedite a specific transaction with a known marketer is transferred to secondary parties without consumer knowledge or consent (Cespedes & Smith, 1993; Culnan, 1993; Foxman & Kilcoyne, 1993; Hagel & Rayport, 1997; Nowak & Phelps, 1992, 1995; Petty, 2000; Wang & Petrisson, 1993).

Though studies indicate that consumers perceive an imbalance of power in favor of marketers, consumers are not without protections and some means for control over their personal information. Various privacy advocates (e.g., Junkbusters, the Privacy Rights Clearinghouse) have publicized strategies for protecting privacy. Some involve avoiding practices that increase the probability of personal information being collected and shared (e.g., completing product registrations); some involve invoking options such as the opt-out mechanisms offered by marketers; and some involve the exercise of legal rights. Though there is no complete safeguard, consumers who exercise such protections will certainly realize less unwelcome use and sharing of their personal information than those who do not.

## PURPOSE OF THE ARTICLE

The study reported in this article contributes to the growing marketing literature on consumer privacy. Phelps, Nowak, and Ferrell (2000) emphasized that, as regulatory and industry efforts to address consumer privacy concerns continue, updated information is needed. With the exception of the study by Graeff and Harmon (2002) that reports data collected in 2000, all of the more recent studies cited in this paper (e.g., Milne & Rohm, 2000; Phelps, Nowak, & Ferrell, 2000) used consumer data collected during the early- or mid-1990s. The following study presents an updated account of current consumer knowledge and behaviors, and it extends previous research in several ways. First, it examines

consumer knowledge of direct marketing practices in a variety of areas, some of which have been overlooked by previous researchers. Second, it examines consumer awareness and use of a wide range of strategies designed to minimize invasions of privacy by direct marketers. Previous researchers may have examined this topic, but not with the depth of coverage of this study. Third, it examines specific demographic and attitudinal variables as possible mediators affecting consumer awareness and use of protective strategies. This study's objectives are consistent with the future research agendas urged by Culnan (1995), Nowak and Phelps (1992), Phelps, Nowak, and Ferrell (2000), and others.

### *Consumer Knowledge of Privacy Practices and Awareness of Protection Strategies*

It is quite widely believed that consumer awareness of privacy protections is lacking. Consumers likely harbor misconceptions about business practices affecting consumer privacy (Direct Marketing Association, 2001; Federal Trade Commission, 2001; Phillips, 2001), and these may foster higher and unrealistic levels of perceived risk (Horne & Horne, 1997; Patterson, O'Malley, & Evans, 1997). It has been suggested that consumers who are knowledgeable of privacy practices and options for safeguarding their own information may experience more perceived control and, thus, less privacy-related anxiety (Foxman & Kilcoyne, 1993; Nowak & Phelps, 1995; Phelps, Nowak, & Ferrell, 2000).

Nowak and Phelps (1992) were the first to specifically investigate consumer knowledge of marketers' information practices and available privacy protections. Their study found uncertainty and misinformation about the sources of personal information available to marketers. For example, many consumers in their study erroneously believed that vehicle registration and state income tax information were available to marketers in the state in which the survey was conducted; and many mistakenly believed that marketers had access to personal information from bank transaction records, federal income tax forms, and medical records. Respondents were also quite uninformed about privacy protections. While 59% had heard of the Direct

Marketing Association's (DMA's) Mail Preference Service, only 35% had heard of the Telephone Preference Service. The authors concluded that much anxiety about privacy is based largely on ignorance. Those respondents who were most concerned about threats to personal privacy were also those most likely to erroneously believe marketers have access to any and all sources of personal information. Further, they were less aware of actions they could take to protect their own privacy.

Culnan (1995) specifically examined consumer knowledge about removal from mailing lists. She found that, although name removal procedures (such as registration with the DMA Mail Preference Service) appeared to have been quite widely publicized in the popular media, 52% of respondents to the 1991 *Harris-Equifax Consumer Privacy Survey* stated they were unaware of any procedures allowing them to remove their names from direct mail lists. This was despite the fact that approximately 90% indicated they felt it was important to be able to do so. The 48% who were aware they could opt-out indicated less concern about privacy and were less likely to believe that consumers have lost control over how personal information is used by companies.

Milne and Rohm (2000) reported even less consumer knowledge of name removal procedures. Consumers sampled in 1997 from a national database of direct mail purchasers were asked, on a "yes or no" basis, if they knew of "any ways to remove your name from direct response lists for catalogs, products, and services?" Fifty-eight percent reported no knowledge. These results are supported by recent polls reporting actual use of name removal. A recent *American Demographics* survey found only 30% and 24% of respondents, respectively, have asked to have their name removed from a mailing list or telephone list (Paul, 2001). The DMA reported that only about 15% of U.S. consumers have either contacted companies directly or used the DMA's Preference Services to remove their names from lists (Sanders, 2000). During 1991, the year data were collected for both Phelps and Nowak's and Culnan's studies, approximately 2.0 million and 466,000 were registered for the

DMA's Mail and Telephone Preference Services, respectively, representing only 1.1% and .25% of the total adult population. During 1997, the year data were collected for Milne and Rohm's study, 2.9 million were registered for the DMA's Mail Preference Service and 993,000 were registered for the DMA's Telephone Preference Service, representing approximately 1.6% and .5% of the total adult population, respectively (Direct Marketing Association, 2002a; U.S. Census Bureau, 1990).

Many in Milne and Rohm's (2000) study also demonstrated limited awareness of the types of information stored in marketing databases. When asked, "What type of information do you think organizations with which you have done business have about you?" virtually all were aware such organizations have names, addresses, and telephone numbers. However, fewer were aware that marketers store credit card and purchase history information.

Graeff and Harmon (2002) surveyed 480 consumers by telephone and asked them why they thought grocery stores offer discount cards to consumers. The majority of respondents gave answers that related to "maintaining store loyalty," "remaining competitive," or "targeting coupons." Only a minority of the respondents (16.5%) gave answers that associated the cards with database marketing.

### *Potential Mediating Variables*

Numerous authors have suggested that privacy segments exist, representing varying levels and types of consumer concern. Mediating factors (demographic characteristics, prior attitudes, etc.) have been suggested to influence viewpoints on privacy. It is likely that such mediating factors will similarly affect awareness of available privacy protection strategies, and the degree to which they are used. We focus here on the possible mediating effects of gender, age, telephone number listing status, and desire to receive direct marketing solicitations.

**The Effects of Gender.** Previous researchers have investigated whether gender affects privacy concerns, but several of these investigations have not revealed any gender effects. Phelps,

Nowak, and Ferrell (2000) examined a number of demographic variables—sex, income, marital status, age, education, and employment status—and found only education to have a statistically significant relationship with privacy concern. No statistically significant differences were found between females and males. Similarly, Milne and Rohm (2000) found no relationship between gender and desire to remove one's name from mail, telephone, and e-mail lists; and Nowak and Phelps (1992) found no correlation between gender and requests for removal from a mailing list.

However, a number of surveys have found women to indicate more concern than men about privacy. Milne and Rohm (2000) cite results of Harris Polls throughout the 1990s, finding women more concerned about threats to their personal privacy. Furash (1997) and Kate (1998) both concluded that surveys have found women expressing more concern about privacy issues. For example, a 1996 survey found 58% of women saying they were very concerned about threats to their privacy, compared with 33% of men. Women were especially concerned about online privacy and privacy threats resulting from disclosure of medical, insurance, and financial information. Somewhat greater concern about privacy was also found among women in Argentina (Milne, Beckman, & Taubman, 1996). A recent *American Demographics/MarketFacts* poll (Paul, 2001) found women more likely than men to consider identifying information such as home address, phone number, and e-mail address to be personal information to be protected. Most recently, a study by Graeff and Harmon (2002) found that of the two sexes, women were less likely to believe that companies should be able to sell consumers' purchase information, and more likely to believe that companies should inform consumers how their purchase information is used. Moreover, they found that although both sexes had similar access to the Internet, females were less comfortable purchasing items over the Internet.

Because women more than men report concern about privacy, it may be inferred that women are at least more consciously uneasy

about who has access to their personal information and how it is used. Thus, we expect they will also be more motivated to become knowledgeable about how they can protect their own privacy. It is therefore expected that women will be somewhat more knowledgeable than men about privacy protection strategies, and more likely to use them. Thus we hypothesize:

**H1a:** Females will be more likely than males to be aware of privacy protection strategies.

**H1b:** Females will be more likely than males to use privacy protection strategies.

**The Effects of Age.** The evidence surrounding age and privacy is mixed. Milne and Rohm (2000) found older consumers to be more likely than younger consumers to desire removal from mail and e-mail lists. However, they cited a Harris poll finding younger consumers more likely to refuse to provide information to businesses; and Phelps and Nowak (1992) found younger consumers more likely to have actually requested removal from a mailing list. Paul (2001) found lower percentages of older consumers classifying home address, home phone number, and e-mail address as personal information to be protected. However, older consumers were more protective of spending habits, brand preferences, product style preferences, and food preferences. Similarly, Graeff and Harmon (2002) found that older consumers were more sensitive to privacy issues in that they were more likely to own a paper shredder, less likely to use credit cards, and less likely to feel that companies should be allowed to sell customer purchase information. Finally, as mentioned above, Phelps, Nowak, and Ferrell (2000), examining the potential effects of a number of demographic variables on privacy concern, found no effect at all for age.

We can only speculate on the reasons for these mixed results. Perhaps some older consumers, particularly those who are retired, have more time and simply do not mind receiving solicitations. Some may even be bored or lonely and welcome the diversion. Thus, they may be less protective of their privacy at least in terms of receiving solicitations. On the other hand,

others who have been disappointed or damaged by questionable direct marketing practices, or who are simply exasperated with the volume of solicitations, may be less tolerant. Indeed, Paul's (2001) findings seem to indicate that older consumers do not want marketers to know what products they like, and the reason for this may well be to avoid solicitations for further purchases. As veteran consumers, they may also have had more opportunity to learn about privacy protection strategies.

Based on supposition that older consumers have less desire for most direct marketing solicitations, and that they are more experienced and discerning concerning whom they grant access to personal information, we hypothesize the following:

**H2a:** There will be a positive association between age and awareness of privacy protection strategies.

**H2b:** There will be a positive association between age and usage of privacy protection strategies.

**The Effects of Telephone Number Listing Status.** Little has been written about the characteristics of consumers opting for unlisted telephone numbers. However, common sense suggests that since telephone companies charge a fee not to publish a residential listing, those requesting unlisted numbers would be those also most likely to be concerned about controlling personal identifying information. According to Aaker, Kumar, and Day (2001), approximately 20% of unlisted residential numbers result from people having recently moved. However, the remaining 80% are unlisted by choice, motivated by a desire to avoid crank and prank callers, telemarketers, bill collectors, and other unwanted calls.

We would expect that consumers with unlisted phone numbers would be relatively more concerned about at least those aspects of privacy pertaining to intrusions on their time and the quiet enjoyment of their home. We would also expect that if they have taken the initiative to obtain an unlisted telephone number, they would likely have initiated other privacy protec-

tion strategies. Thus, we hypothesize the following:

**H3a:** There will be a positive association between unlisted telephone number status and awareness of privacy protection strategies.

**H3b:** There will be a positive association between unlisted telephone number status and usage of privacy protection strategies.

**The Effects of Attitude Toward Receiving Direct Marketing Solicitations.** A final mediating factor considered in this study is consumer attitude toward receiving direct marketing solicitations. A number of prior studies provide pertinent insight. Nowak and Phelps (1992) found privacy concern correlated with requests for removal from a mailing list. Milne and Gordon (1994), using conjoint analysis, identified market segments ("potential lobbyists," "demanding middle," and "new right") holding different attitudes toward direct mail database marketing.

Culnan (1995) examined attitudes toward the transfer of marketing database information to secondary users, and found dimensions of perceived control to differentiate between consumers holding positive versus negative attitudes. Those with more positive attitudes were those who also perceived a greater degree of control over their personal information. Further, those with more positive attitudes were more likely to perceive shopping by mail as beneficial, and were more likely to have found coping strategies for dealing with unwanted mail. Similarly, Milne (1997), in a field experiment, found that consumers who had been provided information about the type of secondary party with whom personal information would be shared were more likely to grant permission for its transfer. Knowing that information will be transferred to entities offering products and services that match one's interests provides a stronger sense of control than does granting permission without assurances of targeting specificity.

Differences between consumers having varying degrees of experience with and knowledge of direct marketing practices have also been suggested (Patterson, O'Malley, & Evans, 1997).

Phelps, Nowak, and Ferrell (2000) found that consumers who had made a catalog purchase within the past 6 months were less concerned than those who had not about the ways companies use information about them. Horne and Horne (1997) investigated whether attitudes toward privacy differed between consumers having more or less experience receiving direct mail. They reasoned that consumers with less actual experience might fear what they do not understand. The authors found consumers classified as heavy users of direct mail to be less concerned about privacy, less likely to feel direct marketing is an invasion of privacy, and less likely to believe stronger regulation is needed. Similarly, in a large-scale national study, Milne and Rohm (2000) found consumer experience with direct purchasing to be negatively related to desire to be removed from mail, telephone, and e-mail marketing lists. Additionally, consumers who were most aware of the types of information captured by marketing databases and most knowledgeable of name removal mechanisms were less likely to desire removal.

Many reasons exist why consumers may not want to receive direct marketing solicitations. Some simply lack interest. Others may feel intruded upon. Still others may fear manipulation by sophisticated marketers holding database information. Whatever the causes, we believe that desire to avoid direct marketing solicitations (e.g., mail advertisements, catalogs, and telephone solicitations) is a surrogate indicator of desire for privacy, and that consumers wishing to avoid marketing solicitations will be motivated to learn about and use privacy protection strategies. Thus, we hypothesize:

**H4a:** There will be a negative association between a person's desire to receive solicitations from direct marketers (e.g., mail advertisements, mail catalogs, and telephone solicitations) and awareness of privacy protection strategies.

**H4b:** There will be a negative association between a person's desire to receive solicitations from direct marketers (e.g., mail advertisements, mail catalogs, and telephone solicitations) and usage of privacy protection strategies.

## METHODOLOGY

A four-page, four-section questionnaire was developed to probe consumer perspectives on various aspects of direct marketing and privacy. The first section inquired about respondents' attitudes toward direct marketing activities. Respondents were presented with three, nine-point scales that asked the degree to which they like or dislike "receiving catalogs in the mail," "receiving advertisements in the mail," and "receiving calls from telephone solicitors." In the second section of the survey, respondents were asked to answer 10 "true or false" questions to assess their knowledge of direct marketing practices affecting consumer privacy. They were also given the option of indicating, "don't know." As presented in Table 1, these 10 questions comprise the knowledge scale. The third section presented respondents with 26 privacy protection strategies. The strategies were gleaned from those suggested by privacy advocates such as Beth Givens (1997, *The Privacy Rights Handbook*). Respondents were asked to indicate their degree of familiarity with each strategy by selecting either "unaware of strategy," "aware, but have not used," or "have used strategy." The 26 strategies comprise the awareness and protection scales and are presented in Table 2. The final section of the survey asked respondents to provide demographic information, specifically gender, age, race, and income.

Prior to mailing the questionnaire, the knowledge scale was sent to Beth Givens, author of *The Privacy Rights Handbook*. She answered the 10 questions correctly and confirmed that the items were clearly written. The knowledge scale was also administered to three direct marketing practitioners. The practitioners' scores ranged from 6 to 9 correct answers, indicating a range of difficulty for the group from easy to challenging.

Based on Hypotheses 1 and 3, it was decided the survey should represent U.S. males and females as well as persons who have listed or unlisted telephone numbers. A list broker was hired to generate lists of names and addresses representative of the following groups of U.S. residents: males with listed telephone numbers, males with unlisted telephone numbers, females



**T A B L E I**  
Knowledge Scale

<i>Percentage Correct</i>	<i>Question</i>
58	1. If you tell a telephone solicitor from a commercial organization that you do not want to receive any more calls from him or his company, he is legally required to honor your request. (True)
52	2. If you call a company's "800" or "900" number, that company cannot identify the number you are calling from unless you reveal the number to them. (False)
49	3. Suppose that your local video store wants to sell a customer mailing list (i.e., a list that contains its customers' names, addresses, and the types of videotapes they rent) to other marketing firms. Your video store can legally add your name to this type of mailing list without getting your oral or written permission. (True)
47	4. If you do not fill out and return a product registration form, you will not be covered by the manufacturer's product warranty. (False)
43	5. Telephone solicitors are able to call people who have an unlisted telephone number. (True)
15	6. If you subscribe to your telephone company's complete "call blocking" service, your telephone number can not be identified by any company you call unless you reveal the number to them. (False)
14	7. When you sign up for the Direct Marketing Association's Mail Preference Service, your name will be removed from some companies' mailing lists. (True)
12	8. If you tell a caller from a nonprofit organization that you do not want to receive any more calls for charitable contributions from his organization, he is legally required to honor your request. (False)
4	9. When you sign up for the Direct Marketing Association's Telephone Preference Service, your name will be added to some companies' calling lists. (False)
2	10. If you write to the publisher of Time Magazine, a general interest magazine, and ask that your name be removed from their mailing list, the publisher is legally required to honor your request. (False)

*Note:* Percentages are based on a sample size of 134. The data were weighted to correct for an over-representation of people with unlisted telephone numbers and an under-representation of people with listed telephone numbers in the sample. At the end of each statement, the correct answer is shown in parentheses.

with listed telephone numbers, and females with unlisted telephone numbers. Each generated list contained 130 names and addresses, resulting in a combined sample of 520 consumers residing throughout the United States. People who were registered with any of the DMA's Preference Services were not screened from the lists. The questionnaire was mailed in April 2000, and a follow-up mailing was conducted 2 weeks after the initial mailing.

## RESULTS

### *Response Rate and Respondents*

Of the 520 questionnaires mailed, 63 were returned as undeliverable, leaving 457 surveys

presumably delivered to the intended respondents. From this group, 137 usable surveys were returned, representing a 30% response rate. The response rate was favorable given the length and complexity of the survey. The sample was fairly evenly distributed in terms of gender and telephone number listing status. Fifty-six percent of the sample was female and 44% was male. Fifty-one percent had listed home telephone numbers, and 49% had unlisted numbers. Ages ranged from 21 to 87, with the average being 48. The income distribution was as follows: 20% under \$25,000; 22% from \$25,000 to \$34,999; 24% from \$35,000 to \$49,999; 13% between \$50,000 and \$74,999; 11% from \$75,000 to \$99,999; and 10% at

**T A B L E 2****Awareness & Protection Scales**

<i>Unaware of Strategy</i>	<i>Aware, but Have Not Used</i>	<i>Have Used Strategy</i>	<i>Strategy</i>
18%	21%	61%	I do not fill out product registration forms.
11%	30%	59%	I screen my telephone calls with an answering machine.
20%	30%	50%	When calling a company to order something, I don't give out my home telephone number unless I think it's absolutely necessary.
21%	32%	47%	I do not have my telephone number printed on my personal checks.
28%	26%	46%	When filling out a purchase form, e.g., a catalog order form or an application for a buyers club, I will check the box at the bottom of the form that tells the company that I do not want to receive coupons, advertisements, or other offers.
22%	32%	45%	I do not enter sweepstakes or contests when I would be required to provide my address and telephone number.
24%	32%	44%	If I feel compelled to give my telephone number to a company selling me a product, I will give them my business number rather than my home number.
16%	42%	42%	I do not participate in surveys that reveal my identity and inquire about the products and services I use.
21%	40%	39%	I do not use store credit cards.
17%	45%	38%	I do not join buying clubs such as the "frequent buyers" club, the "rewards card" club, or the "book buyers" club.
8%	54%	38%	I have "Caller ID," a system that may allow me to identify the number of the person making a telephone call to me.
18%	47%	35%	I do not purchase items by mail.
29%	37%	34%	When I receive a telephone call from an annoying telemarketer, I tell the caller to put my name on the company's "don't call" list.
25%	41%	34%	When buying items in a store, I make a special effort to pay by cash rather than to use a credit card or personal check.
16%	52%	32%	I do not purchase items by telephone.
22%	51%	27%	I have an unlisted telephone number.
46%	32%	22%	When purchasing an item by mail or telephone, I request that information about me and my purchases not be shared with other companies.
29%	50%	21%	I have telephoned or written to companies to have them remove my name from their calling or mailing lists.
35%	48%	17%	Through my local telephone company, I have a "blocking service," which prevents my number from being transmitted to companies that use "Caller ID."
48%	41%	11%	If I feel compelled to give a telephone number to a company selling me a product, I will give them a fake number rather than my real number.
61%	28%	10%	I have asked my credit card company(ies) to not disclose information about my buying patterns to any other companies.
59%	33%	8%	I have asked the Direct Marketing Association (DMA) to have my telephone number removed from companies' calling lists.
58%	34%	8%	I have asked the Direct Marketing Association (DMA) to have my name removed from companies' mailing lists.
53%	43%	4%	My telephone answering machine warns the caller that I do not want to be bothered by telephone solicitors.
65%	31%	4%	I have hired or asked a "Privacy Advocate" to have my name deleted from mailing and telephone lists.
62%	35%	3%	My telephone rings with one tone when a friend is calling me and with a different tone when someone else is calling me.

*Note:* Percentages are based on a sample size of 118. The data were weighed to correct for an over-representation of people with unlisted telephone numbers and for an under-representation of people with listed telephone numbers in the sample.

**T A B L E 3**

Summary Statistics for Scales

<i>Scale</i>	<i>n</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>Kuder-Richardson 20 Reliability Coefficient</i>
Knowledge	134	2.95	1.6	0	8	.40
Awareness	118	17.95	5.3	3	26	.87
Protection	118	7.90	3.9	0	21	.74

*Note:* With the exception of the K-R 20 reliability coefficient, the summary statistics are based on weighted data. The data were weighted to correct for an over-representation of people with unlisted telephone numbers and an under-representation of people with listed telephone numbers in the sample.

\$100,000 or more. Eighty-two percent were Caucasian, 10% were Black, 6% were Hispanic, and 2% were Asian.

With the exception of the telephone number listing status, the sample was quite well matched to the overall population (U.S. Census Bureau, 2000). Data from Survey Sampling, Inc., a firm that provides telephone samples for the marketing research industry, indicates that 73% of U.S. residential telephone subscribers have listed numbers. Since 51% of this study's respondents have listed telephone numbers, the sample was under-represented by people with listed telephone numbers and over-represented by people with unlisted telephone numbers. Thus, prior to calculating frequencies and summary statistics, the raw data were weighted so that the sample results would be representative of the percentage of adults in the U.S. who have listed or unlisted telephone numbers. The statistical tests and analyses, however, were conducted using raw, unweighted data, as the statistical software used (i.e., SPSS) was not designed to properly perform statistical tests with weighted data.

#### *Preference for Direct Marketing Activities*

As mentioned previously, respondents were asked to rate on a scale from -4 to +4 their like or dislike of "receiving catalogs in the mail," "receiving advertisements in the mail," and "receiving calls from telephone solicitors." The results clearly indicate dislike for telephone solicitations. Calls from telephone solicitors received an average rating of -3.97, with 98% of respon-

dents indicating a negative rating. This dislike for telemarketing is similar to that reported by Brezen, Block, and Schultz (1987) and Milne and Rohm (2000). Reactions to catalogs and mail advertisements were more varied. Respondents were slightly negative overall toward receiving mail advertisements, with the average rating being -.42. Forty-three percent of respondents rated mail advertisements as negative and 37% rated them as positive. Respondents gave the most positive average rating (.92) to catalogs.

#### *Scale Descriptions and Analyses*

Three scales were developed, evaluated, and used in this study, hereafter referred to as the *knowledge scale*, the *awareness scale*, and the *protection scale*. On all three scales, items were scored as dichotomous variables, either correct (hit) or not correct (miss). Given the nonmetric nature of the scale data, the Kuder-Richardson 20 reliability coefficient was used to assess scale reliability. Summary statistics for each of the scales are displayed in Table 3.

**The Knowledge Scale.** The knowledge scale was designed to measure respondents' knowledge of direct marketing practices that relate to consumer privacy. As shown in Table 1, the knowledge scale consists of 10 statements. Respondents were asked to indicate whether they thought each statement was true or false, or to indicate that they did not know. A respondent's score on the scale was determined by awarding one point for each correct answer and no points

for incorrect or "don't know" responses. Thus, the possible range of scores was 0 to 10.

The Kuder-Richardson 20 reliability coefficient for the knowledge scale was .40, a value that indicates the scale has low internal consistency. Since the knowledge scale has low reliability, it may not be a good measure of a person's understanding of direct marketing privacy-related practices. Thus, except for the reporting of summary statistics and the proportion of respondents answering each question correctly, the knowledge scale is not used in subsequent analyses.

A total of 134 respondents completed the knowledge scale. As evidenced by the scores, respondents found the questions difficult. Though scores ranged from 0 to 8 questions correct, the average was only 2.95, and 84% of the respondents received a score of 4 or fewer correct answers. Table 1 displays each knowledge scale item along with the percentage of respondents answering it correctly.

The results reveal some interesting contrasts. While 58% of respondents knew that telephone solicitors representing commercial organizations must stop calling consumers who request they do so, only 12% realized that nonprofit organizations are exempt from this rule. Some of the questions with the highest percentages of correct replies were telephone-oriented (800- and 900-numbers, unlisted telephone numbers), yet only a small percentage of respondents correctly answered the item about call blocking. Somewhat disturbing, only 14% and 4%, respectively, correctly answered questions about the DMA's Mail Preference Service and Telephone Preference Service.

**The Awareness Scale.** The awareness scale was developed to measure awareness of strategies designed to protect personal information and consumer privacy. The 26 items that comprise the awareness scale are listed in Table 2. Respondents were asked to indicate the degree to which they were familiar with each strategy ("unaware," "aware but have not used," or "have used"). If the respondent checked either "aware but have not used" or "have used," it was assumed the respondent was aware of the strategy,

and s/he was awarded a point. Thus, a respondent could score from 0 to 26 points on the scale. Scale scores were calculated only for those who responded to all of the scale items.

The Kuder-Richardson 20 reliability coefficient for the awareness scale was .87, suggesting a high degree of internal consistency. Scores on the scale ranged from 3 to 26, with an average score of 17.95. These results indicate a relatively high level of consumer awareness of protective strategies.

**The Protection Scale.** The protection scale was designed to measure respondents' self-reported usage of strategies designed to protect their personal information and consumer privacy. It contains the same items as the awareness scale, but here the focus is on whether respondents have actually used each strategy. Table 2 displays the 26 strategies in order from highest to lowest usage among the respondents. Respondents were awarded one point on the protection scale for each strategy used. Thus, possible scores ranged from 0 to 26. The Kuder-Richardson 20 coefficient of reliability was .74, indicating the scale has a moderate degree of internal consistency.

Among the 118 respondents who completed all scale items, the scores varied widely, from 0 to 21. However, the average score was a relatively low 7.90. Thus, despite the high level of awareness reported by respondents, reported usage of the strategies is quite low.

### *Investigating Consumer Traits That May Affect Awareness*

Standard multiple regression analysis was used to examine the relationships between scores on the awareness scale (as criterion variable) and the mediating predictor variables suggested by the research hypotheses, H1a through H4a. These variables were gender, age, telephone number listing status, and desire to receive telephone solicitations, catalogs, and advertisements in the mail. Gender and telephone number listing status were coded as dummy variables with "female" and "unlisted" coded as "1" and their counterparts coded as "0."

The overall regression model was statistically

significant ( $F_{6, 91} = 4.41, p < .01; R^2 = .23$ ). Gender ( $b = -.24, p < .05$ ) and age ( $b = -.36, p < .01$ ) were the variables most responsible for explaining variation. In other words, males were more likely than females to score higher on the awareness scale; and there was a negative relationship between scores on the awareness scale and age. Thus, the results for gender and age were opposite what was predicted by H1a and H2a. No significant differences were found based on telephone number listing status or attitudes toward receiving direct mail solicitations. Thus, no support was found for H3a or H4a.

#### *Investigating Consumer Traits That May Affect Usage*

Multiple regression analysis was also used to examine the relationship between scores on the protection scale (as criterion variable) and the same predictor variables. The overall model was statistically significant ( $F_{6, 91} = 4.18, p < .01; R^2 = .22$ ). Variance was most explained by age ( $b = -.27, p < .05$ ); "receiving catalogs in the mail" ( $b = -.27, p < .05$ ); and "receiving calls from telephone solicitors" ( $b = -.37, p < .01$ ). In other words, younger consumers were more likely to score higher on the protection scale, as were those who disliked receiving catalogs and calls from telephone solicitors. Thus, the result for age was opposite that predicted by H2b, and no support was found for H1b or H3b, as there were no significant differences for gender or telephone number listing status. H4b was largely supported. As predicted, those who dislike "receiving catalogs" and "receiving calls" scored higher on the protection scale. No significant effect was found for "receiving advertisements in the mail."

### **DISCUSSION AND IMPLICATIONS**

In summary, scores on the knowledge scale were low, scores on the awareness scale were relatively high, and scores on the protection scale were considerably lower than those on the awareness scale. Most of the hypotheses concerning potential mediating factors were not supported. Gender and age were the only fac-

tors found to cause differing scores on the awareness scale, and these differences were opposite of the predicted effects. Age also had opposite the predicted effect on the protection scale. However, as predicted, there was a negative association between desire to receive solicitations from direct marketers and usage of privacy protection strategies. The following sections provide discussion of these findings.

#### *The Knowledge Scale*

First, why were the scores on the knowledge scale so low? One explanation is that consumer knowledge as reported by prior studies was low and, based on these results, little has changed. Earlier studies examining consumer knowledge of specific areas of direct marketing practice and privacy found noteworthy ignorance and misunderstanding (Culnan, 1995; Graeff & Harmon, 2002; Milne & Rohm, 2000; Nowak & Phelps, 1992). However, given the level of consumer concern and the increased media coverage of privacy issues over the past decade, the lack of knowledge is disturbing. A possible explanation is that many of the recent news stories have focused on privacy concerns surrounding the Internet and other computer use rather than the specific topics included on the knowledge scale. The items contained on the knowledge scale all involve telephone, mail, or personal interactions. Future research should examine whether consumers today are relatively more knowledgeable of practices affecting their privacy online.

Another observation that may explain the knowledge scale findings is that the items correctly answered by the highest proportion of respondents were those most mentioned in the media and most likely involving personal experience. For example, the fact that commercial organizations are legally required to honor requests to not call again has received quite a lot of media mention. Much of this coverage has been in conjunction with various states considering or enacting "do not call" lists, and the Federal Trade Commission enacting a nationwide list. It is also probable that many respondents have successfully made this request. On the other hand, most respondents apparently

did not distinguish between the legal obligations of commercial entities and nonprofit organizations, and this is consistent with fewer media reports highlighting the distinction. Approximately half the respondents correctly answered items pertaining to 800- and 900-telephone numbers, product registration forms, and video stores, and it is likely that many had personal experience to contribute to their knowledge. Far fewer correctly answered items pertaining to call blocking or writing to a magazine publisher, areas where information is less prominent and personal experience is less likely. It is somewhat surprising that only 43% knew that telephone solicitors are able to call people with unlisted telephone numbers. Perhaps the efficacy of unlisted numbers is overestimated by those whose numbers are listed.

The small number who correctly answered questions regarding the DMA's Mail Preference Service and Telephone Preference Service is particularly troubling given the importance of these services to industry self-regulation efforts. One explanation is the rather confusing names given these services. The word "preference" is associated with desire or an inclination toward something. However, signing up for either the Mail Preference Service or the Telephone Preference Service is a means to remove oneself from direct marketing lists. If one has not made an effort to investigate the nature of these services or has not had personal experience with them, it would be natural to assume from the name that signing up will result in one's name being added to mail and telephone lists.

We suspect that a higher percentage of respondents were aware of the existence of some sort of do-not-call and do-not-mail lists, but they did not associate the Preference Services with these lists. The DMA might argue that the nature and availability of these services have been widely publicized, and it is true that information about them appears in the popular media (e.g., talk shows and "Dear Abby"). Yet the message does not seem to be resonating with consumers. Evidence of this is provided by the relatively low percentage of consumers who are actually registered with the services. For example, with so many consumers harboring distaste for telemar-

keting calls, enthusiastic use of the Telephone Preference Service might be expected, yet even this list contains only 4.5 million names, approximately 2% of the estimated 211 million adults in the U.S. (Direct Marketing Association, 2002b; U.S. Census Bureau, 2002).

In general, we question whether there exists adequately publicized information on most topics covered by the knowledge scale questions. Responsible publicity informing consumers of available protections and industry self-regulation are likely overshadowed by negative publicity highlighting questionable direct marketing practices. Though the DMA has championed educational and self-regulation efforts, it is doubtful that direct marketing practitioners in general are inclined to vigorously educate consumers about privacy-related issues. Besides being perceived as a questionable use of resources, there is an inherent conflict for many marketers. While marketers do want to avoid wasting money soliciting consumers unlikely to respond, and readily see the value in careful targeting, they are understandably wary of assuming that a consumer will reject direct marketing solicitations altogether simply because s/he professes not to want to receive any. Many who overtly express disinterest in a particular product, or in products marketed through a particular channel, eventually do buy. Direct marketers would rationally want to maintain access to such consumers. Consumer needs and wants are often made more salient by persuasive marketing appeals, and much purchasing is of an unplanned and impulsive nature. Thus, in considering the question of how to more widely and effectively disseminate privacy-related information, we feel it unrealistic to expect that marketers will ever fully embrace such efforts. Information concerning privacy protection might therefore be more appropriately advanced by public and educational entities.

### *The Awareness Scale*

As reported earlier, scores on the Awareness Scale were quite high. Yet, the reported awareness for individual items varied quite dramatically. The highest levels of awareness were associated with strategies promoted in conjunction

with commercial products. For example, 92% of respondents were aware of using "caller ID." Caller ID has been advertised and sold by telephone companies and so consumers do not have to rely either on government involvement or on direct marketing industry self-regulation for information. The high level of awareness for screening calls with a telephone answering machine can be similarly explained.

Several strategies associated with relatively high levels of awareness involve nonparticipation in "everyday" behaviors. These strategies include refraining from filling out product registration forms; withholding home telephone numbers; and avoiding sweepstakes, surveys, buying clubs, credit card purchases, and telephone and mail order purchases. Maintaining an unlisted telephone number and paying in cash also involve familiar behaviors. Respondents were slightly less aware of strategies that require more proactive thought. These include checking boxes at the bottom of order forms to decline additional offers, asking to be placed on a telemarketer's do-not-call list, and writing to companies to be asked to be removed from calling or mailing lists.

Items associated with less awareness are generally those associated with more specific effort, and often little or ineffective publicity. Further, most are not associated with "everyday" activities. The DMA's preference services fall into this category. Nearly 60% of this study's respondents reported being unaware of either the Mail or Telephone Preference Service. These results suggest less awareness of the DMA's services than was found in surveys during the early 1990s (Culnan, 1995; Nowak & Phelps, 1992), and are comparable to results reported by Milne and Rohm (2000) using 1997 data. However, caution should be used in interpreting these differences as representing trends. The samples have quite different characteristics. Our sample size was quite small ( $n = 137$ ) compared with the other studies. Further, while ours was a national quota sample based on gender and telephone number listing status, Nowak and Phelps' findings were based on a regional sample ( $n = 266$ ) contacted by telephone; Milne and Rohm's national study ( $n = 1508$ ) was based on a sampling

frame of households known to purchase by direct mail; and Culnan's study was based on the 1991 *Harris-Equifax Consumer Privacy Survey* which contacted a large national sample.

The fact that 61% of the respondents were unaware of the strategy, "I have asked my credit card company (ies) to not disclose information about my buying patterns to any other companies," is somewhat disconcerting given the information sent to consumers by financial services companies to comply with the Gramm-Leach-Bliley Act of 1999. However, the disclosures and opt-out procedures provided in compliance with that regulation have been widely denounced as confusing, unintelligible, and ineffective ("Confusing," 2001; Wigfield, 2001).

Finally, some strategies such as recording an antisolicitation message on one's answering machine or contacting a privacy advocate are not only unpublicized but require quite aggressively purposeful behavior. Those who become aware of these strategies are probably those who are most motivated to learn about privacy protection.

We also address possible reasons why the hypotheses pertaining to potential mitigating factors were not supported. As reported earlier, men and younger people scored higher on the awareness scale, which was opposite the relationships hypothesized (H1a and H2a). In seeking to explain these findings, we observed more closely the types of publications in which privacy is most frequently discussed. Much of what has been written about privacy in recent years pertains to computer privacy and financial privacy, as discussed in computer and financial/business publications. Computer and technology publications regularly publish articles informing readers how to install firewalls, protect against computer viruses and hackers, forestall against spamming, and the like. Similarly, business and financial publications contain some of the same type of computer-related advice, and also contain articles that focus on avoiding privacy invasions that could place one's property at risk. Males and young adults may be the most avid readers of these types of publications,

which could explain why those groups scored higher on the awareness scale in our survey.

We also did not find any support for the hypotheses that related privacy awareness levels to telephone number status and attitudes toward receiving direct marketing solicitations (H3a and H4a). These results suggest that people who choose to have a listed telephone number and people who like receiving marketing solicitations are just as knowledgeable of privacy strategies as their counterparts. The findings suggest that consumers are generally quite familiar with privacy protection strategies, particularly those that have been most publicized and that involve "every day" behaviors, whether or not they are motivated to use them. The fact that scores on the awareness scale are much higher than scores on the protection scale is consistent with this explanation. Consumers who have not felt the need for an unlisted telephone number and who are more interested in receiving direct marketing solicitations may be somewhat less concerned about at least some aspects of privacy, but are not necessarily unaware of better publicized and more commonly used strategies.

### *The Protection Scale*

As compared with the awareness scale, scores on the protection scale were substantially lower. This is not surprising. First, in order to use a protection strategy, one must first be aware of it. Second, while awareness may be dependent upon motivation to learn about privacy and the ready availability of information, actual use requires more motivation. Consumers must perceive that the benefits from the strategy will exceed the costs of finding, initiating, and using it.

While many of the lesser-used strategies are those that have been least publicized and of which respondents were least aware, this was not always the case. We believe that the level of required effort relative to each consumer's level of motivation provides a plausible explanation. Consumers who are less motivated may be disinclined to implement even the easiest and most widely publicized strategies. Those who are more motivated may be inclined to imple-

ment strategies requiring moderate amounts of effort, but view the payoff as too slight to justify those requiring greater inconvenience and more sustained effort. Finally, strategies requiring the greatest effort and cost will likely attract only those who are highly motivated. The support found for Hypothesis 4b suggests that those who least desire direct marketing solicitations will be most motivated to adopt privacy protection strategies. These types of consumers will be difficult for marketers to target and reach.

Many of the strategies that were most used by respondents require little effort in return for the benefit. Some even save effort. Screening calls with an answering machine, and ignoring registration forms, surveys, and sweepstakes fall into this category. Others require being vigilant to not disclose information, but otherwise involve little effort. The various strategies that involve withholding one's home phone number fall into this category. (Giving out a fake telephone number seems to be the exception. Perhaps it is viewed as dishonest and unethical.) However, some strategies involve forgoing tangible benefits appreciated by consumers. Forgoing the receipt of coupons, passing up the savings associated with rewards club cards, relinquishing the convenience of purchasing with credit cards, and declining the opportunity to purchase by mail may simply be too high a price. Similarly, unlisted telephone numbers, caller ID, and call blocking may be perceived as inconvenient, and they involve some monetary expense. For these strategies, the survey found awareness to be much higher than actual use. Recording an antisolicitation message on one's answering machine may be perceived as having a high social cost. It is doubtful that stepped up publicity with regard to these strategies will result in substantially more use.

What we find most interesting is that many of the least used strategies involve removing one's name from lists or asking marketers not to share information. While these strategies require special effort and forethought, more effort may currently be required to learn about them than to actually use them. Awareness is quite low, but the actual effort required to implement the



strategies is also relatively low. This is where we believe additional publicity would be of most benefit. Educating consumers about their rights and the necessary procedures for being placed on do-not-call lists, for requesting that companies not share information with other companies, for requesting removal from mailing lists, and for registering with the DMA's Preference Services may result in substantially more use of these strategies. Further, awareness of how to use such strategies would render consumers more in control of their information and thus likely alleviate concern about the direct marketing practices.

Except for H4b, pertaining to attitude toward direct marketing, the hypotheses pertaining to possible mitigating factors were not supported. No significantly different scores on the protection scale were found either for gender (H1b) or for telephone number listing status (H3b). Like the results for the awareness scale, the results for age (H2b) were opposite what was predicted.

With regard to gender, though surveys find women reporting the greatest concern about privacy, perhaps this does not translate into stronger motivation to actively implement privacy protection strategies. The fact that one expresses concern does not equate with acting on it. This conclusion is consistent with the findings of Milne and Rohm (2000), Nowak and Phelps (1992), and Phelps, Nowak, and Ferrell (2000). Further, based on the results of the awareness scale, female respondents were less aware of available strategies than were male respondents, and so it follows logically that usage reported on the protection scale would also be less. Regarding telephone number listing status, perhaps those with unlisted telephone numbers have found their unlisted status largely sufficient as a privacy protection strategy and they are not motivated to undertake other strategies. This would be a fruitful area for future research. Finally, the fact that younger people scored higher on the protection scale, though opposite hypothesis (H2b), seems a logical outcome of their higher scores on the awareness scale.

## CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

The study reported in this paper found substantial differences between the degree of reported awareness of privacy protection strategies and reported usage. Overall, the level of awareness as reported on the awareness scale was quite high, with respondents reporting most awareness of well-publicized and readily implemented strategies. If consumers are to gain more control over their personal data, they need to be given information not only on all the protective strategies that are available to them but also on the manner in which the strategies can be easily implemented.

A number of issues require further research. First, the present study was limited in that data were gathered pertaining to telephone, mail, and personal interactions between marketers and consumers. Similar research with respect to knowledge, awareness, and use of privacy protection strategies relevant to e-commerce is needed. Are consumers more aware of privacy protection strategies related to Internet use? Are they more inclined to use them? Second, the present study investigated several potential mediating factors—age, gender, telephone number listing status, and attitude toward receiving direct marketing solicitations. Future research should investigate other potential mediating factors, as well as further explore the reasons underlying age and gender differences. Third, to adequately measure consumer knowledge of direct marketing practices affecting privacy, an internally reliable knowledge scale, involving easier items than used in the current study, as well as items pertaining to on-line privacy, is needed.

Fourth, the present study found that consumers who expressed less desire to receive solicitations from direct marketers also reported more usage of privacy protection strategies. Future research should explore the relationship between actual experience with direct marketing and use of privacy protection strategies. Does experience with direct marketing foster familiarity and trust, leading to less privacy concern? Or does experience with direct marketing lead,

at the least, to more selective desire and thus to more inclination toward using privacy protection strategies to limit exposure to solicitations? Fifth, the present study was motivated by reports that consumers are concerned about privacy. Future research should connect the amount of actual privacy concern reported by specific consumers with their own awareness and usage of privacy protection strategies. Are those consumers who are most concerned about privacy using privacy protection strategies? Or, are consumers who express the most concern those who have not availed themselves of available strategies, and hence feel more vulnerable?

It is logical to assume that those with unlisted telephone numbers would differ from those with listed numbers on privacy issues. Yet, this study revealed no differences between the two groups on awareness or usage of privacy protection strategies. These results suggest that surveys based on telephone directory listings may not suffer any serious bias from omitting households with unlisted telephone numbers. Future research should investigate whether unlisted and listed telephone subscribers exhibit differences in other areas (e.g., demography or life-style).

Finally, the results of the present study suggest that, though efforts have been made to educate consumers about privacy, much of the information presented has not registered with the public. Further research is needed to determine why. Have the publicity efforts been too little and too sporadic? Have they dealt with some aspects of privacy but neglected others? Do consumers simply not find the information interesting or compelling? Are consumers not as concerned as they claim to be? Understanding why consumers fail to adopt strategies to protect their privacy will help to make future privacy campaigns more effective.

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