

# **OFFICE OF SCALE RESEARCH**

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### **A Social Desirability Bias: A Neglected Aspect of Validity Testing**

by

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A NEGLECTED ASPECT OF VALIDITY TESTING**

The past decade has witnessed a tremendous growth in the use of multi-item scales in consumer-related research. Concurrently, there is increasing concern about the quality of these measures. While the majority of articles now discuss the reliability of the scales administered, fewer address the issue of scale validity. One neglected scale validity issue which should be of particular concern in consumer behavior research is potential social desirability bias associated with scale measures. The purpose of this paper is to discuss the nature of such a bias, the means for testing for it, and ways it can and should be implemented in consumer-related research.

## **SOCIAL DESIRABILITY BIAS: A NEGLECTED ASPECT OF VALIDITY TESTING**

As the field of marketing matures there is increasing attention focused upon the quality of research being conducted by marketing researchers (Arndt 1985; Brinberg and Hirschman 1987; Hunt 1990, Jacoby 1978; Muncy and Fisk 1987; Skipper and Hyman 1987, 1990). In turn, the validity of the operational measures used to generate research data to a large extent determines the validity of the findings reported in that research (Abrams 1971; Churchill 1979; Malhotra 1988; Peter 1979; Rentz 1988).

Among the most widely used measurement techniques in marketing in the last decade is the multi-item, summated scale. In order to be effective in the development of high quality research, such scales must, at the least, be reliable and internally valid. Most researchers would readily admit their desire for valid measures. Yet, previous reviews of scale usage in the marketing literature suggest that little effort is typically expended to assess the validity of these scales (Peter 1981), with discriminant validity being the most commonly neglected component of validity testing (Peter and Churchill 1986).

A potentially important aspect of discriminant validity is social desirability bias. It is the purpose of this paper to discuss the nature of such bias within the context of consumer behavior.' The few occasions when tests for social desirability bias have been conducted in the marketing domain will be described, as will procedures which should be followed in future research to improve the quality of psychometric measures employed in consumer research.

### **REVIEW OF THE SOCIAL DESIRABILITY CONCEPT AND MEASURES**

It has long been recognized that the manner in which subjects respond to experimental stimuli may be influenced by non-test-relevant response determinants (Campbell and Stanley 1963; Cook and Campbell 1979; Nunnally 1967). This problem has particularly plagued personality researchers in the field of psychology. A major source of response distortion identified by researchers in this area was the tendency for subjects to "fake good" or "fake bad" responses to personality test items (Meehl and Hathaway 1946), a tendency which has also been referred to as a "lying factor" (Edwards et al 1962).

The presence of such a factor was considered to be a function of the test behavior of the subject, rather than the tendency of the test items to elicit particular responses. To overcome the effects of this behavioral response on the part of subjects,

personality researchers constructed special validity scales to detect and/or suppress these "faking" tendencies.

In an attempt to broaden the application of this concept to include response bias evoked both by the actual test items as well as by the test behavior of the subject, Edwards (1957) proposed the concept of social desirability. Social desirability is the tendency of subjects to respond to test items in such a way as to present themselves in socially acceptable terms in order to gain the approval of others. Such a response tendency may be evoked by the nature of the experimental or testing setting, the individual subject's motives (e.g., achievement, approval or dependence goals), or the subject's expectancies regarding the evaluative consequences of his behavior.

While a number of social desirability scales have been developed (Cofer, Chance and Judson 1949; Edwards 1957; Wiggins 1959), the measures which have gained the most wide-spread acceptance and use in psychology are the original Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe 1960, 1964) and its short forms (e.g., Greenwald and Satow 1970; Strahan and Gerbasi 1972). SD scales are administered as an aid in establishing the discriminant validity of the primary test instrument being employed (Campbell and Fisk 1959). Determination of SD bias is an equally important validity test for both newly constructed as well as established measures (Fraboni and Cooper 1989).

Today, social desirability bias is considered to be one of the most common sources of bias affecting the validity of experimental and survey research findings in psychology (Nederhof 1985). In fact, the vast majority of research investigations of attitudes, opinions and personality which have been reported in psychology journals in the last three decades have used simultaneous administration of a social desirability scale as part of the validation process. A recently published monograph on scale development for applied social research recommends routinely testing for SD bias during scale construction (DeVellis 1991). The widespread use of SD scales is based on the belief of psychology researchers that it is "essential to discriminate between the effects of item content and the needs of subjects to present themselves in a socially desirable (or undesirable) light" (Crowne and Marlowe 1960, p. 21).

#### **IMPORTANCE OF THE SD MEASURES IN CONSUMER BEHAVIOR RESEARCH**

Clearly, SD measures provide researchers in psychology with an invaluable tool for establishing the internal validity of their test instruments. Since much of the marketing literature - particularly in the area of consumer behavior - reports the use of

multi-item, summated measures to assess attitudinal, personality and behavior-related constructs similar to those employed in the mature social sciences, it would seem that marketing research could also benefit by using this tool to help establish the discriminant validity of scale measures. In his suggested procedure for developing better measures of marketing constructs, Churchill (1979, p. 68) addresses the problem of social desirability bias in marketing research when he admonishes the researcher to "(refine) those questions which contain an obvious 'socially acceptable' response". To accomplish this suggested "refining" necessitates testing for its existence in the first place.

Many areas of consumer behavior could plausibly be affected by social desirability bias. In support of this contention are studies published in psychology journals which have found significant relationships between the Marlowe-Crowne Social Desirability Scale and such areas as attitude change (Bagozzi 1985; Buckhout 1965a, 1966; Goldsmith 1989; Greenbaum 1966; Miller et al 1965), consumer satisfaction (Sabourin et al 1989), dyadic interactions (Buckhout 1965b), innovativeness (Goldsmith 1987), and risk-taking behavior (Kogan 1964; Kogan and Wallach 1967).

Marketing's long standing preoccupation with such areas of interest as information search patterns, attitudes toward products, behavioral activities involved in product purchase, and persuasive communications, coupled with the fact that much of this research is conducted within a laboratory-like environment (which enhances the likelihood of SD bias), would indicate these to be particularly appropriate settings in which to test for SD bias. Moreover, testing for SD bias within the rapidly growing body of literature in ethics and ethical behavior in marketing situations (which often requires self-reports on particularly sensitive issues) would seem not only to be warranted, but mandatory. In fact, any research involving self-reports of the behavioral aspects of consumers or marketers in conjunction with multi-item, summated scales should be suspect with respect to SD bias, and hence should be validated through the use of an SD scale.

#### **TESTING FOR SD BIAS IN EXISTING CONSUMER BEHAVIOR RESEARCH STUDIES**

Given the desire of marketing researchers to implement valid measures in combination with the availability of an appropriate validating tool, it is reasonable to expect that much of the research conducted in consumer behavior would have adopted this validation technique. To investigate testing for SD bias, ten years (1980 -1989) of marketing research published in four rigorous marketing journals (JCR, JMR, JM and JAMS) was reviewed.

Of the more than 1800 articles and notes published in that time period, a scant ten reported testing for SD bias.<sup>2</sup> Considering the fact that the majority of these articles directly examined some aspect of consumer behavior, and the convenient accessibility of a well-established SD instrument, this lack of validity testing is disheartening.

One reason for this lack of emphasis on social desirability may be that individuals conducting research in consumer behavior may not be aware that such a scale exists or under what type of circumstances administration of such an instrument could be beneficial. Furthermore, there may be some confusion regarding interpretation of results obtained from administration of the M-C SDS. In order to illustrate appropriate conditions under which SD bias should be considered a potential threat to the validity of the research, and how it has been administered and interpreted in previous studies obtained through other scales, a review of the few instances where SD testing has been conducted is warranted. An overview of each study is presented below; a summary of all articles is presented in Table 1.

In each of these studies an SD scale was self-administered along with other scales. The M-C SDS consists of a 33 item, true-false summated rating scale. In some cases an abbreviated version of the scale was employed in order to prevent task overload. A high correlation between scores on the scale and another measure suggests that the latter is measuring a respondent's desire to answer in socially desirable ways, and, thereby, seriously weakens its internal validity. Conversely, a low correlation suggests that the measure is relatively free of SD bias. Regression analysis may be used to determine the proportion of variance attributable to SD bias, with an ensuing correction for this distortion by use of either partial correlations (McNemar 1969) or canonical correlation analysis (Greenblatt et al. 1984).

Testing for SD bias was performed in one of two different ways across these studies. First, some studies sought to confirm the discriminant validity of proposed multi-item, summated measures during the construction of these scales. The authors were attempting to eliminate any items which were identified as potential sources of contamination via an SD response bias in order to purify their measures. Second, some studies used the M-C SDS responses as a correlate to their primary scale of interest. In these cases, testing for SD bias was performed in conjunction with a previously developed primary scale (rather than one in the developmental stages) in order to identify behavioral tendencies of the subjects which might contaminate the study's findings. Studies are grouped into categories by type of use in the ensuing discussion.

## Use of M-C SDS During Scale Construction

The first research to employ the M-C SDS during scale construction in the period of interest (1980-1989) was an examination of the relationships between optimum stimulation levels and exploratory behavior, and personality and demographic traits (Raju 1980). The M-C SDS was administered to pre-screen 90 statements to ensure selection of items with low correlation with social desirability. While no actual correlation coefficients or significance levels were reported, several measures eliciting SD bias were eliminated, leaving a pool of items which exhibited little or no SD bias.

The M-C SDS was used in only one stage of a large study reported by Unger and Kernan (1983). The study examined dimensions of the subjective leisure experience in six different scenarios. During the initial construction of a six dimensional scale of leisure, the M-C SD scale was administered as one of several reliability and internal consistency measures. As in the previous study reviewed, no correlation coefficients or significance levels were reported. Unlike the previous study, however, the authors indicated that there was some evidence that SD bias might be present when using the scales. However, the authors chose to interpret the bias as being situation specific and not necessarily inherent in the scales themselves.

The construction of two scales, one for assertiveness and one for aggressiveness, was the focus of a study by Richins (1983). SD bias was evaluated in two ways. First, during initial screening of proposed Likert-type scale items, those which appeared to have a strong potential for eliciting a socially desirable response were removed. Respondents completed both the assertiveness and aggressiveness scales along with a shortened version of the M-C SDS. The correlations between the SD scale and assertiveness and aggressiveness were .13 ( $p > .10$ ) and  $-.28$  ( $p < .01$ ), respectively. While the latter correlation is statistically significant, the author concluded that the magnitude was too small to represent a relevant effect.

Childers et al. (1985) examined several measures of visual and verbal mental imagery. The M-C SDS was administered in order to test the discriminant validity of the primary scale of interest during the scale development process. Unlike the studies summarized above, Childers et al. reported coefficient alphas for each of two groups of subjects. While prior studies have suggested that individual difference measures may be correlated with social desirability (White et al. 1977), none of the scales proposed by Childers et al. were correlated with the social desirability measure.

The purpose of a study by Friedman and Churchill (1987) was to examine how social power behaviors can be effectively employed by physicians. Again, the M-C SDS was used during the scale construction phase of the study in order to assess the discriminant validity of the dependent measures of satisfaction and compliance. Individual, pairwise correlation coefficients were reported, with all values evidencing insignificant correlation ranging from negative to very low positive levels.

The final instance of the administration of the M-C SDS during scale construction was one of the only times in marketing where it was used outside the direct area of consumer behavior. The M-C SDS was administered by Saxe and Weitz (1982) to sales people representing a wide variety of sales positions. The purpose of this study was to construct a scale for measuring a salesperson's customer orientation. Each item on the primary scale of interest was correlated with the M-C SDS scores. While no actual correlation coefficients or significance levels were reported, the authors indicate that "all correlations were small and insignificant" and concluded that the items were not contaminated by a SD factor.

#### **Use of M-C SDS as a Behavioral Covariate**

From 1980 through 1989, only four studies reported employing the M-C SDS in an attempt to identify potential SD response bias when administering scales which had not used the M-C SDS during scale construction. The first of these was a study of the impact of intrapersonal influences on satisfaction/dissatisfaction conducted by Westbrook (1980). The results of testing for SD bias were used in a regression model along with affective and attitudinal variables to assess their explanatory power on satisfaction. Hence, the statistics regarding the application of the M-C SDS reported in the study were standardized beta coefficients and an adjusted  $R^2$  for the whole model. The beta coefficient associated with the SD factor was not significant, indicating that SD bias was not an explanatory factor in the model (i.e., did not affect subjects' responses).

A similar use of the M-C SDS is reported in a study by Westbrook (1987) which examines consumer affective responses to product/consumption experiences and their relationship to various aspects of postpurchase processes. This study employed a pre-existing scale of discreet emotional experiences (DES-II) which had been developed for use in psychological studies. SD bias was assessed during a pilot study prior to administration of the final field study. While no statistics were reported, the author



indicates that "none of the six subscales were correlated with the social desirability response set" (Westbrook 1987, p. 262).

The influence of labeling (e.g., "helpful people like yourself") and dependency (e.g., "depend upon individual contributions") on potential donor attitudes was examined by Moore et al. (1985). The study was based upon complete responses received over three time periods from members of a consumer panel. Correlations of the primary research measures with the M-C SDS were evidently computed but the actual correlation coefficients were not reported. The authors state that "low, nonsignificant Pearson correlations" between the M-C SDS and each of the covariates and dependent measures indicates that these measures were unaffected by SD bias.

Finally, Carlson and Grossbart (1988) investigated the relationship between parental styles and their effects on the manner in which children are socialized with respect to consumption behavior. The primary research instrument included eleven summative indices extracted from prior studies predominantly reported in psychological journals. A shortened (19 item) version of the M-C SDS was used to identify any SD behavioral response tendencies which might exist in the subject pool. Both alpha and beta coefficients were reported, as well as some factor scores from the cluster analysis indicating the presence, direction and strength of the relationship between SD bias and group classification. While some significant but weak relationships between SD and factor scores existed, the authors concluded that SD did not have a major influence on group classification.

Although the preceding review is limited in terms of numbers of studies, these studies represent a wide range of topical areas in consumer behavior. It is worth noting that SD bias is directly evident in 40% of these studies (Raju 1980; Unger and Kernan 1983; Richins 1983; Carlson and Grossbart 1988). In addition, a fifth study employs a scale (DES-II), the original author of which used the M-C SDS to purify the measure during scale construction. Hence, it is reasonable to expect that other studies in these areas of research could be biased by the subject's desire to respond in a socially desirable manner. The conceptual relevance of the bias must be determined by the researcher and those reviewing his or her work.

### **Applications of SD Testing in Marketing Research**

While the strength of the relationships identified in the preceding review of marketing research may not be compelling, the fact that SD bias was present in many of these studies is

provocative. In addition, the general role played by SD bias in suppressing or obscuring relationships among variables and in producing artificial relationships among independent and dependent variables has been widely established in psychological literature (Ballard et al 1988; Crino et al 1983; Dicken 1963; Ganster et al 1983). Hence, testing for SD bias should be strongly considered when marketing research involves subject self-reports regarding their attitudes, opinions or personality traits measured by administration of a multi-item, summated scale.

While the primary focus of this paper has been on the application of the Marlowe-Crowne SDS (or some variant thereof), a number of other scales intended to identify SD bias have been constructed and administered. Newer SD scales include the Martin-Larsen Approval Motivation Scale (Larsen et al 1976), a desirability scale based on attitude opinion items which is particularly intended for use in survey research (Schuessler et al 1978), and the Other-Deception Questionnaire (ODQ) and the Self-Deception Questionnaire (SDQ) both developed by Sackeim and Gur (1978, 1979). While these scales have not been tested or validated as extensively as the M-C SDS, administration of any of the SD scales represents an effort to detect and measure SD bias in collected data.<sup>3</sup>

Methodologically, there are several ways in which SD scales may be utilized as a validation tool. First, SD scales may be used during scale construction in order to evaluate individual scale items for their innate tendency to evoke socially desirable responses from subjects. This would afford the researcher the opportunity to identify such statements and either eliminate them or make appropriate wording changes, hence purifying the scale.

A second application of the SD scale would be as a tool for interpretation of the findings obtained through use of the primary scale(s) of interest. This may be useful in cases where (a) it is not possible to evaluate the primary scale for SD bias before administration, or (2) it is the testing behavior of the subjects (rather than a characteristic of the test items) which is of concern. Hence, the SD scale responses would be examined as a correlate of the subject's response set for the primary research instrument to determine whether or not subject's responses were biased. This would enable the researcher to discriminate between the effects of item content and the needs of subjects to present themselves in a socially desirable light (Crowne and Marlowe 1960).

A third use for SD testing would be as an evaluative tool for the reviewer of the research for publication. By presenting the reviewer with the results of testing for SD bias, the researcher is providing evidence of the discriminant validity of the scales employed in the research. If researchers report actual correlation

coefficients along with their significance levels, indicating the presence, direction and strength of the SD bias, the reviewer is presented with the opportunity to interpret the relevance of the SD bias. In addition, the reviewer may use the SD testing as a cue to the overall quality of the research presented.

#### **SUMMARY AND CONCLUSIONS**

Testing for SD bias is standard operating procedure in psychology both during the construction and implementation of psychometric scales. Yet, for the most part, testing for SD bias has been ignored in the consumer research reported in the major marketing journals. While there may be valid reasons why it should not be examined in some cases, such cases would seem, from this vantage point, to be the exception rather than the rule. Instead of ignoring the possibility of a confounding response bias in a scale, testing should be routinely performed in order to purify the measure and aid in its future usage. Therefore, until such time when testing for SD bias is routine, the findings in much of the consumer researcher literature will have to be accepted with caution. That social desirability influences the responses of consumers to many kinds of measures seems certain. To be unaware of the presence, direction and extent of such a bias represents the riskiest kind of uncertainty.

**TABLE 1**  
**SUMMARY OF ARTICLES REPORTING SOCIAL DESIRABILITY TESTING**  
**(JCR, JMR, JM, JAMS: 1980 - 1989)**

Author (s)	Source	Type of Use	Statistics Reported	Interpretation	Source of Primary Scales
Carlson & Grossbart	JCR 1988	Behavioral bias	Alpha & beta coefficients	SD bias reported	Several existing scale items
Childers et al.	JCR 1985	Scale construction	Coef. Alphas	No SD bias noted	VVIQ (Marks 1973)
Friedman & Churchill	JCR 1987	Scale construction	Correlations	No SD bias noted	New scale
Moore et al.	JCR 1985	Behavioral bias	None reported	No SD bias noted	Items similar to exiting scales
Raju	JCR 1980	Scale construction	None reported	Elimination of measures eliciting SD bias	Robinson and Shaver (1973)
Richins	JCR 1983	Scale construction	None reported	Elimination of measures eliciting SD bias	New scale
		Behavioral bias	Correlations	SD bias noted	Purified scale
Saxe and Weitz	JMR 1982	Scale construction	None reported	No SD bias noted	New scale
Unger and Kernan	JCR 1983	Scale construction	None reported	SD bias noted	New scale
Westbrook	JCR 1980	Behavioral bias	Beta coef., $R^2$	No SD bias noted	Several pre-existing scales
Westbrook	JCR 1987	Behavioral bias	None reported	No SD bias noted	DES-II (Izard 1977)

## FOOTNOTES

1.To make the population of scales under review here more manageable, the sizable number relating directly to assessing advertising were not included. Future papers may address that area separately. A preliminary analysis indicates that SD bias has not been used to validate advertising-oriented scales in any of the journals content-analyzed for this study (i.e., JM, JMR, JCR, and JAMS), nor in the two major advertising journals (JA and JAR).

2.The research reviewed here includes only those studies which employed SD testing in conjunction with the use of multi-item, summated scales. It is also possible that potential SD bias was assessed during the construction of the multi-item scale, but the author(s) chose not to report the findings.

3.In addition to detection of SD bias, a number of methods have been proposed which are designed to prevent or reduce the occurrence of SD bias (Muncy 1985; Nederhof 1985). Although criticized by some (Block 1965), one of the earliest methods developed for coping with SD bias is the use of both forced-choice items and neutral questions (Edwards 1957, 1970; Humm and Wadsworth 1939). A "randomized response technique", which allows the subject to answer one of two randomly selected items, is another technique which was developed to reduce response distortion associated with "threatening questions" i.e., items which are particularly susceptible to SD bias (Sudman and Bradburn 1974). The use of self-administered questionnaires, particularly mail surveys and anonymous mass surveys, have also been suggested (Sudman and Bradburn 1974). When self-administration is not possible, such as in experimental laboratory research, the use of a pseudo-lie detector, called the "bogus pipeline" may be used to convince subjects that the "equipment" can determine whether or not the subject is telling the truth (Jones and Sigall 1971). Finally, the interviewer selected can strongly affect the amount of SD bias evoked. The results of an interview are more likely to be biased when subjects and interviewers are similar with respect to social distance (e.g., Dohrenwend et al 1968).

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