

AN EXPERIMENTAL DESIGN ON THE SERVICES CHARACTERISTIC-CONSUMER BEHAVIOR RELATIONSHIP

Joseph L. Orsini, California State University, Sacramento
6000 J Street, Sacramento, CA 95819-6088 (916) 278-7124

ABSTRACT

While the services literature widely contends that the unique characteristics of services cause consumers to behave differently in their service purchase than their purchase of goods, little empirical substantiation of this contention is found. This study explores the use of a single service class, in an experimental design, to examine the relationship between two service characteristics and several aspects of consumer behavior. Support for the contention is found for one of the characteristics, with partial support for the other. Recommendations are made for extensions of this research approach.

INTRODUCTION

Whether measured by proportion of the GNP or size of the work force, services now constitute over two-thirds of the American economy. This economic importance is reflected in the marketing, consumer behavior, and management literature: Fisk, Tansuhaj and Crosby (1987) list 3500 works on this topic, the majority of which were written since 1981.

If services were simply intangible goods, then despite their economic importance little unique theory would be applicable. The substantial attention now being paid to services is largely based on the contention that consumers differ in their purchase behavior for services, as compared to goods, because of their reaction to unique services characteristics (e.g. Zeithaml 1981). While a majority of the literature supports this "important differences" concept, a minority does not, contending that any differences which do exist are of degree rather than kind (e.g., Enis and Roering 1981). As Bateson (1985) observes:

The debate over the differences between goods and services has been going on now for many years. There is no simple answer to the question... Whether the differences are of degree or kind may never be resolved. (p. 60)

Unfortunately for the differences contention, the majority of the services literature is conceptual; the lack of empirical verification of the many hypotheses which exist is an acknowledged problem in this literature (e.g., Dubinsky and Levy 1981). The few empirical studies which do exist tend to be correlational (e.g., Orsini 1982) or, if experimental, use different product classes to represent different levels of the characteristics of study (e.g., Davis, et al., 1979), thus confounding the

characteristic of concern with other characteristics possessed by the product (e.g., Perdue and Summers 1986).

The purpose of this study is twofold: to test the contention that "unique" characteristics of services effect consumer behavior; and to explore the utilization of a concept test-based experimental design which manipulates service characteristic levels for a single service class. A questionnaire, asking stated intentions, is used to test subject response to consumer behavior activities related to purchase willingness and information seeking.

The following section briefly reviews the literature on the two service characteristics tested, participation and variability, and the literature on the responses evaluated: service purchase willingness, provider loyalty, information search effort, and professional and word of mouth information helpfulness. The subsequent section details the methodology, followed by a findings section. Finally a conclusions section discusses the implications of the results and suggestions for further research.

LITERATURE REVIEW

The following discussions focus on the particular perceived characteristics of services and types of consumer behavior investigated in this study. The two service characteristics studied, consumer participation in the service production and service variability, were selected based on their importance in the literature and their appearance as being fundamental to services. The types of consumer behavior selected were based on their consideration in the literature, and their applicability to the service characteristics being investigated.

Service Characteristics

The most important unique service characteristic is acknowledged to be intangibility (e.g., Bateson 1979). However, insofar as intangibility is "the lack of a corporeal existence", then levels of intangibility seem conceptually infeasible; i.e., an item either has corporeal existence or it doesn't. While a consumer purchase may be composed of both goods and services (e.g., a meal in a restaurant), the service component of the purchase is still an intangible act rather than a tangible manufactured item (Shostack 1977). Given this situation, two other important service characteristics were investigated: participation by the consumer in the service production, and service variability (heterogeneity).

Consumer participation in the production of the service offering has been contended to be a fundamental characteristic for some time (e.g., Cooke 1970, Eigler and Langeard 1979). The consumer does not usually participate in the production of goods. Even the purchase of "do-it-yourself" goods, such as unfinished furniture, does not involve the customer in the production of the item purchased. The basic cause of the service participation characteristic is the hypothesized perishability of services, which typically require simultaneous production and consumption (e.g., Zeithaml 1981).

Variability (also labeled heterogeneity), defined as the inability of a particular service provider to produce consistent performance and quality, is a characteristic long held to be fundamental to services (e.g., Rathmell 1966). The basic cause is inconsistent human performance, exacerbated when there is interaction between individuals. The combination of labor intensiveness of services, the participation of the consumer in the production process, and service complexity, yields the conceptualized inconsistency of outcome (e.g., Leichy and Churchill 1979, Zeithaml 1981).

Purchase-Related Variables

A major item of interest in consumer behavior is the willingness of consumers to try a new brand. Trial likelihood will be increased as a function of the new brand's relative advantage, compatibility with consumer needs, attitudes, and experiences, observability, simplicity, and ability to be experienced on a trial or sample basis (Rogers and Shoemaker 1971). A brand's (or product form's) relative advantage would be a function of existing levels of dissatisfaction with the

current service, as well as the ability of the consumer to perceive the relative advantages of the new brand. Studies have been inconsistent in their finding of consumer demographic characteristics related to this willingness (Summers 1971).

A related item of interest is brand loyalty, defined as "fidelity or tenacious adherence to a brand on the part of buyers" (Elrod 1987). While typically measured as repeat purchase behavior (e.g., Jacoby and Kyner 1973), the literature suggests that loyalists consciously resist other brands' influence attempts, selectively perceive information which is consistent with their existing preferences, and assimilate their pre-trial expectations into their post-trial evaluations (e.g., Crosby and Taylor 1983). Rothschild (1986) contends that attempts to reduce loyalty by offering a high level of sales promotions, price discounts, coupons, and other incentives have led to a declining level of loyalty in many product classes, particularly where there are few brand differences.

Information-Related Variables

Willingness to expend effort on searching for information to make a brand choice decision has been an item of interest in consumer behavior for some time. In his review of the literature, however, Newman (1977) concluded that many of the early findings were dubious, largely for methodological reasons. Some of the more recent findings have indicated that product class price, perceived differences among available alternatives, and the ability to judge product attributes are all related to willingness to search for product information, while the influence of demographic characteristics resulted in mixed findings (e.g., Duncan and Olshavsky 1982, Jacoby, Chestnut and Fisher 1978).

Many of these findings support the contention that prior knowledge is an important variable, and one exhibiting a more complex relationship with search effort (e.g., Brucks 1985). Consumers with little prior product class knowledge find processing information difficult, and are thereby discouraged from doing so. Consumers with a moderate amount of knowledge are able to process information more efficiently, and are therefore encouraged to do so, while those with a high level of knowledge see little need to obtain more, therefore perform little search. The result is an inverted U-shape to the relationship between search effort and prior product class knowledge.

The helpfulness of word of mouth (WOM) information to consumer purchase decisions received a substantial amount of study in the 1960's and early 1970's. The almost universal finding has been that WOM sources are decisive in the decision process of purchasers (e.g., Robertson 1971). WOM is helpful because of the knowledge and experience of the information provider, as well as the concern of the provider with the welfare of the consumer (e.g., Dichter 1966, Wiener and Mowen 1986). Conditions for greater WOM helpfulness include product newness and visibility, and consumer inability to judge product attributes (Robertson 1971). With respect to consumer attributes, most of the literature has focused on psychological behavior (e.g., Reynolds and Darden 1971), with little indication that demographic characteristics are significant (Arndt 1967).

The use of expert opinion in the purchase of some product classes is widely employed by consumers. Beales, et al. (1981) state that information experts are frequently available for high priced, complex, and infrequently purchased products. For example, home-buyers may use a variety of information brokers, such as architects, house inspectors, and attorneys. Third-party consultants (those not directly participating in the exchange) are most often used for product quality information, general advantages and disadvantages of purchase, or how a particular consumer goal is best attained.

The primary attraction of using the advice of experts in purchase decisions, in addition to their expertise, is their perceived trustworthiness (e.g., Beales, et al., 1981, Wiener and Mowen 1986). Insofar as they are typically paid by the buyer, and their business credibility is based on their trustworthiness, they are perceived to have little incentive to distort the facts or steer the consumer to a particular brand or product (Beales, et al., 1981).

HYPOTHESES

The research cited above indicates that the two characteristics of services, participation and variability, ought to work in similar directions on several consumer variables: willingness to try a new service class and a different brand of that service class, information search effort, and expert and WOM information usage. Because higher participation is more personally involving, it ought to decrease service brand trial willingness, and increase information search and the helpfulness of expert and WOM information sources.

Similarly, high levels of service variability mean that there will be a high level of uncertainty regarding the effectiveness of the use of the service. It will thereby decrease the willingness to try a new product form or new product provider. Similarly, variability should result in decreasing the helpfulness of additional sources of general information and WOM non-expert) sources, and decrease the helpfulness of expert sources. These hypotheses are summarized in Table 1.

TABLE 1

Hypotheses Summary

<u>Behavior</u>	<u>Participation</u>	<u>Variability</u>
Purchase Likelihood - Usual Provider	Decrease(a)	Decrease
Purchase Likelihood - New Provider	Decrease	Decrease
Information Search Efforts	Increase	Decrease
Helpfulness of WOM Information Sources	Increase	Decrease
Helpfulness of Expert Information Sources	Increase	Decrease

(a) To be read as: increasing participation leads to decreasing purchase likelihood.

METHODOLOGY

Research Design

The purpose of this research is to address the problem of the lack of establishment of a causal relationship between services characteristics and consumer behavior. In order to accomplish this, development of a single service 2 X 2 experimental design was undertaken to test the relationship between two widely acknowledged fundamental characteristics of services and several aspects of consumer behavior of interest to researchers.

The purpose of the design was to create a desirable product which would be unfamiliar to consumers, so as to avoid the effects of prior knowledge and experience. The participation and variability characteristics of the product would then be experimentally manipulated into high and low levels, and consumer responses in these four treatment conditions compared to see their effects on statements of anticipated behavior.

A concept testing approach (e.g., Moore 1982, Shocker and Srinivasan 1979) was used to create the treatment conditions. A particular innovative service, a dentist-administered cavity prevention treatment process, was described in a fictitious dental journal article. Four different article versions were written to include the four variations of the two service characteristic variables: high/low participation, and high/low variability.

A new dental procedure setting was employed for several reasons. First, dental services are almost universally used by the age of adulthood, thereby insuring familiarity with the setting and need for the general product class on the part of respondents. Second, recent innovations in the dental industry offered examples of plausible new services (e.g., Engelman 1982, Litke 1988), but assured that all respondents would have no experience with the particular service form examined. Thus, a credible cover story was developed; in fact, debriefing sessions indicated disappointment on the part of many respondents when they found that the described cavity prevention process was fictitious.

Subjects

The subjects were 114 MBA students at a large urban campus of a Western university, who participated on a voluntary basis. They were told that their help was needed in a study being done for the California Dental Association by the School of Business Administration. After random assignment to the treatment condition, they read the article, completed the survey, and were then debriefed on the purpose of the study.

MBA students are widely used in experimental designs (e.g., Park and Smith 1989). In addition to the accessibility advantages of any student group, they possess the maturity and purchase experience of adults. Further, their generally consistent socioeconomic status reduces variability from that source, thus allowing greater testing significance to be observed.

Questionnaire

The first page of the questionnaire contained what was purported to be a reprint from a journal, the American Dentist, describing a new cavity prevention procedure; in actuality, both the article and the journal were fictitious. As conceptualized in the article, a chemical process had been developed which would harden the tooth so as to prevent new cavities. Immediately after reading the article, the students filled out a question-

naire, which asked their anticipated responses pertaining to the cavity prevention procedure, as well as demographic and other relevant information.

Anticipated responses to the product were measured on six point semantic differential scales, for both hypothesized variables and manipulation checks. In order to include covariates in the analysis, i.e., non-treatment variables potentially effecting purchase and information decisions, additional questions were asked. The respondent's age, gender, frequency of treatment for cavities, availability of dental insurance, and attitudes toward their dentist were included. Several versions of the cover story and treatments were pretested in an attempt to be concise while achieving the desired manipulations.

RESULTS

Manipulation Checks

Scale measures of the subjects' perceived level of participation and variability were used as the dependent variable in ANOVA manipulation checks of the four treatment variables. For participation, the effects of the participation treatment were significant ($p = .000$), while the effects of variability and the interaction of participation and variability were not significant. The variability manipulation check produced similar results: significance of variability ($p = .002$), and insignificance of participation and their interaction.

Hypotheses Tests

The results of the ANCOVA hypotheses tests are indicated in Table 2, where three of the ten hypotheses yielded significant findings. The significant results are indicated graphically in Figure 1. It will be observed that variability did tend to generally reduce all purchase factors: alternative provider purchase likelihood, desire for more information, and the helpfulness of WOM information. Also, while there are only the main effects of variability for the information variables, there is a participation-variability interaction effecting alternative provider purchase willingness.

Not indicated in Table 2 are the significance of several covariates in the analysis. The availability of dental insurance to the respondent was significant in the analysis of both the likelihood of using another dentist for treatment ($p = .023$) and helpfulness of WOM information ($p = .011$). Size of the respondent's household and the "bedside manner" of the respon-

dent's dentist were significant ($p = .052$ and $.002$, respectively) in the desire for more information prior to purchase.

TABLE 2

Hypotheses Results

Behavior	Participation	Variability	P x V
Purchase Likelihood - Usual Provider	n.s.	n.s.	n.s.
Purchase Likelihood - New Provider	n.s.	.005	.027
Information Search Effort	n.s.	.040	n.s.
Helpfulness of WOM Information Sources	n.s.	.015	n.s.
Helpfulness of Expert Information Sources	n.s.	n.s.	n.s.

DISCUSSION AND CONCLUSIONS

The purpose of this study was to examine the causal relationship between service characteristics and consumer behavior, as well as the feasibility of using a true experimental design for this investigation. The findings supported both purposes by indicating service variability was significant in effecting three of the five behaviors studied, while service participation had a significant interactive effect on one behavior, with no significant main effects. This study thus lends support to both the basic hypothesis in that "unique" service characteristics do affect behavior, and it is feasible to use the concept testing method in experimental design to investigate the effects of service characteristics.

The "differences" hypothesis actually received stronger support than indicated from the ANCOVA results. Further analysis, using the manipulation checks as the independent variables (rather than the treatments themselves) with the dependent variables, revealed some relevant results. In correlating willingness to undertake the dental treatment, for example, significance was found for both participation ($p = .027$) and variability ($p = .000$). Similar findings were uncovered for the helpfulness of expert information sources ($p = .042$ and $.012$, respectively). These differences in results, between the experimental treatment variables (which were not significant) and their perceptual measures, appears to indicate the need for more extensive pretesting of all measures and treatments.

In summary, this study indicates a moderate level of empirical support for the "services are different" contention in the services literature, and indicates the viability of using of a concept test approach of experimental design in service characteristic investigation. Understandably, the concept test approach does appear to be strongly sensitive to specific wording, and a substantial amount of pretesting may be required prior to instituting a full study.

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