RETAIL IMAGE DIMENSIONS AND CONSUMER PREFERENCES

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Abstract

This research attempted to determine the dimensionality of the retail image construct and how consumer preferences were related to retail image. The procedure was to collect similarities and preference data on shopping center image. Also, respondents were asked to rate each shopping center on fifteen image attributes. Multidimensional scaling (MDS) and matrix fitting techniques were used for evaluation.

The major results of this study include a confirmation of the multidimensional character of the retail image construct. The major dimension is an "ideal retail mix" dimension composed of attributes such as "Quality" of Stores," "Merchandise Quality," "Product Selection," "General Price Level," "A Fashion Center," "Special Events and Exhibits," and "Variety of Stores." Consumer preference was found to be a one-dimensional construct that is congruent with this dimension.

The second dimension was a "collateral convenience in shopping" dimension, composed of attributes that are not essential to the exchange process but would be desirable to shoppers when present ("Parking Facilities, Comfort Areas, and Availability of Lunch/Refreshments").

Several attributes, commonly accepted in the literature, are not unidimensional con- structs. These were "Special Sales/ Promotions, Layout of Center, Store Personnel, Great Place to Spend Hours, and A Conservative Center."

Introduction

Retail image research seeks to resolve the question of what draws shoppers to one store rather than another. Early researchers emphasized mass and distance as the forces that determine patronage and developed "gravity models" that stressed convenience to the consumer. Later researchers pointed to the importance of intangible factors in the consumer's decision making process and do not find convenience to be the overwhelming factor determining the consumer's patronage choices (Doyle and Fenwick 1974-75). Research on retail image is generally considered to have begun with Martineau (1958), who first conceptualized many of the major components of retail image theory.

Consumers, retailers and scholars agree that there is a something called retail image, of what that something is composed remains unclear. How to research, operationally define, measure, and validate the image variable is a matter of disagreement and concern among marketing scholars (Doyle and Fenwick 1974-75, Berkowitz, Deutscher and Hansen 1978, Nevin and Houston 1980).

Berkowitz, Deutscher and Hansen (1978) have stated:

> Interestingly enough, the number one priority for image research lies in the area of developing better measures of image. This is true in spite of the fact that most of the previous image work has been done in this area. The fact remains, however, that until the image concept is thoroughly and rigorously operationalized, image research will continue to be a series of one-shot problem-specific research efforts adding little to the understanding of the general issues of image measurement.

Similarly, Doyle and Fenwick (1974-75) see two central problems in measuring shopper perceptions of store characteristics. "The first is to isolate in an unambiguous and parsimonious fashion the salient dimensions shoppers actually use in evaluating alternative outlets.... The second problem is to meaningfully segment consumers." The measurement of retail image has frequently relied on the use of the semantic differential as a data collection device, and the determination of the relevant attributes to be measured has usually been based on researcher intuition and reference to the marketing literature (Kunkel and Berry 1968, Lindquist 1974-75, Berkowitz et al 1978, Nevin and Houston 1980). This predetermination of the image attributes to be measured has been questioned because the researcher is, in effect, selecting attributes without true knowledge of their saliency in the consumer's perceptions. Thus, the results of the research, though statistically significant, may be merely artifacts of the research process (Nevin and Houston 1980).

In reference to the use of semantic differentials in image research, Kunkel and Berry (1968) have said:

> ...people are encouraged to respond to characteristics that do not necessarily comprise the image they have of the store being studied. For

example, respondents might be asked to evaluate a store on the basis of whether it has a pleasant atmosphere. The problem is that the consumer may or may not think of "atmosphere" when he thinks about a particular store. When he is required to make an evaluation of such characteristics, they become a part of the image of the store that he is concluded to have. The resulting "image" then is likely to be more highly correlated with the instrument than with reality.

In other words, the use of the semantic differential may measure store attributes without regard to their importance to the consumer, thus giving a biased view of the image actually held by the consumer. Attempts to overcome this limitation have included having the respondent scale the importance (valence) of each attribute measured (Myers and Alpert 1968, Green and Rao 1972). Nonetheless, researcher bias is still introduced into the work through the researcher's predetermination of which attributes will be considered and which will be excluded from the study. Use of this information by the retailer as a basis for decisions intended to improve the store's image could lead to expensive and unproductive actions (Kunkel and Berry 1968).

Research Design

Previous research efforts have failed to deal with the methodological problems inherent in any technique that predetermines what characteristics (attributes) are selected for the research. Even those research efforts which have employed factor analysis to group attributes into image dimensions have used the semantic differential to select the attributes to be measured, and thus suffer from the same methodological problem (Nevin and Houston 1980).

Noteworthy in the more recent work on retail image is a study by Nevin and Houston (1980), who utilized factor analysis in an attempt to discover salient shopping center image attributes. In this study, Nevin and Houston generated a list of sixteen attribute items to represent the domain of shopping center image. These attributes had been drawn from the literature on retail store image, and then had been either limited or modified to those that would be applicable to the image of shopping centers. Factor analysis of the sixteen image attributes found fourteen to be significant. Table I lists these attributes and their respective semantic differential scale anchor descriptors. The two attributes found to be non-significant were, "Atmosphere" and "Easy to take children." "A Fashion Center" was added due to researcher interest in this attribute.

TABLE I
SHOPPING CENTER IMAGE ATTRIBUTE ITEMS

ATTRIBUTES	ANCHOR DESCRIPTORS
Quality of stores.	high-low
Variety of stores.	excellent-poor
Merchandise quality. . . .	excellent-poor
Product selection.	excellent-poor
General price level. . . .	fair-unfair
Special sales/promotions .	attractive-unattractive
Layout of area	convenient-unconvenient
Parking facilities . .	adequate-inadequate
Availability of lunch/ refreshments.	adequate-inadequate
Comfort areas.	adequate-inadequate
Special events/exhibits. .	attractive-unattractive
Store personnel. . . .	helpful-not helpful
Great place to spend hours.	agree-disagree
A conservative center. . .	agree-disagree
A fashion center	agree-disagree

These fifteen shopping center image attributes form the hypotheses for the present study.

Hypotheses

H(1): Consumer perceptions of retail image consist of two or more dimensions.

Each of the following listed individual attributes is congruent with and is a component of a dimension of retail image.

H(2): Quality of Stores.
H(3): Variety of Stores.
H(4): Merchandise Quality.
H(5): Product Selection.
H(6): General Price Level.
H(7): Special Sales/Promos.
H(8): Layout of Center.
H(9): Parking Facilities.
H(10): Availability of Refreshments.
H(11): Comfort areas.
H(12): Special Events/Exhibits.
H(13): Store Personnel.
H(14): Great Place to Spend Hours.
H(15): A Conservative Center.
H(16): A Fashion Center.

Further, the importance or saliency of the dimensions of retail image in the consumer's image-forming process was determined by matching them with consumer preferences.

Method

The basic procedure used in this research project was to collect similarities and preference data about retail shopping center images from a sample of shoppers (n = 181) interviewed at five shopping

centers in Dallas. In addition, the questionnaire asked the respondents to rate each of the shopping center stimuli on fifteen image attributes. Seven-point intensity scales were employed (Green and Rao 1970).

In response to the problems inherent in the use of the semantic differential, researchers have searched for alternate methods for measuring retail image. Among these has been the use of multidimensional scaling (MDS) to build graphic perceptual maps of various retail store images.

Multidimensional scaling is a set of mathematical techniques which enable a researcher to uncover or disclose the "hidden structure" in a data base by locating the research stimuli in an n-dimensioned spatial configuration or "map." Once the stimuli points are located in the multidimensional space, the researcher seeks to determine the theoretical meaning of this spatial representation of stimuli (Kruskal and Wish 1978).

Multidimensional scaling appears to be advantageous for retail image research because the image dimensions are elicited only from the respondent's judgments of the similarities perceived among the stimuli, and there is no predetermination by the researcher of image attributes. How well or how poorly the resulting configuration fits the data can be determined through the use of the concept of "stress," which is a measure of the goodness of fit between the observed ranked data and the derived interpoint distances for a given configuration in a given dimensionality. The better the fit, the smaller the stress value. This measure is derived through a monotone regression of the observed ranked data against the derived interpoint distances for a given configuration (Singson 1975, Kruskal and Wish 1978).

Multidimensional scaling and a matrix fitting technique were used to determine:

1. The number of dimensions in the similarities data. The results of this step were used to test the first hypothesis, which requires a determination of the dimensionality of the consumer's perceived retail image.

2. The MDS configuration of the preference data. This configuration was used as a test for saliency when compared to the other configurations.

3. Congruency between the dimensions discovered in the similarities data and the preference configuration. Here the saliency of the discovered dimensions is determined.

4. Congruency among the fifteen image attribute configurations. This step groups the attributes.

5. Congruency between the dimensions discovered in the similarities data and the fifteen image attribute configurations. This step determined whether or not the attributes were artifacts, groups them according to dimension, and tests the other hypotheses.

An MDS perceptual map was prepared for each attribute. Each attribute map was individually compared with the primary perceptual map through the use of a matrix fitting technique. These matrix comparisons were then used to ascertain whether or not each individual attribute may have been merely an artifact of previous research projects. Lack of congruency with a dimension in the primary perceptual map would be evidence of this problem.

Findings

Table II displays the stress values in various dimensions for the multidimensional scaled maps of all the variables. There is a clear cut separation between variables that scaled well in one dimension with stress values equal to or less than .010 and variables that scaled at much higher stress values.

The primary shopping center image MDS map scaled poorly in one dimension (stress = .432), scaled acceptably well in two dimensions (.143) and scaled best in three dimensions (.009), thus confirming the multidimensional character of the retail image construct (Hypothesis #1). The shopping center preferences variable scaled well in all dimensions including one dimension (stress = .007), leading to the conclusion that the respondent's shopping center preferences form a unidimensional construct.

Scaling of the fifteen attributes produced two distinct groups. The first group of ten attributes (Quality of Stores, Variety of Stores, Merchandise Quality, Product Selection, General Price Level, Parking, Availability of Lunch/Refreshments, Comfort Areas, Special Events/Exhibits, and A Fashion Center) all scaled well in one dimension with stress values measuring under 010. Ten of the attributes reached stress values of less than .010 in one dimension, suggesting that these ten are one dimensional constructs. The second group of five attributes did not scale well in one dimension. These five, "Special Sales/Promotions" (stress =.410), "Layout of Center" (stress =.356), "Store Personnel" (stress = .347), "Great Place

To Spend Hours" (stress = .262), and "A Conservative Center" (stress =.410), all reached noticeably higher stress values when scaled in one dimension. However, all five achieved acceptable stress values of .010 or less when scaled in two dimensions, suggesting that these five attributes are not pure unidimensional constructs, but are actually two-dimensional constructs (See **TABLE II**).

TABLE II
MDS STRESS VALUES BY DIMENSIONS

	NUMBER OF DIMENSIONS				
	1	2	3	4	5
Shopping Center Image	.432*	.143*	.009	.010	.010
Shopping Center Preferences	.007	.006	.000	.001	.000
ATTRIBUTES					
Qual. of Stores	.003	.002	.004	.000	.000
Var. of Stores	.007	.000	.000	.004	.000
Merch. Quality	.009	.000	.007	.000	.004
Gen. Price Level	.005	.008	.000	.001	.006
Spec. Sales/Promo	.410*	.005	.002	.010	.000
Layout of Center	.356*	.008	.007	.000	.000
Parking Facilit's	.005	.000	.010	.000	.000
Avail. of Lunch/ Refreshments	.007	.008	.000	.003	.000
Comfort Areas	.005	.007	.001	.009	.000
Special Events/ Exhibits	.003	.000	.010	.000	.000
Store Personnel	.347*	.005	.006	.000	.000
To Spend Hours	.262*	.004	.000	.008	.008
Conserv. Center	.410*	.007	.004	.000	.002
A Fashion Center	.007	.010	.000	.000	.000

* Indicates Stress Value greater than .010

The results suggest that predetermination of research attributes by previous researchers has not been supported in indentifying them as salient factors. Five attributes that neither scaled well in one dimension nor were congruent with either consumer preferences or perceptions may well be indications of the problem Kunkel and Berry (1968) referred to when they stated, "The resulting 'image' then is likely to be more highly correlated with the (semantic differential) instrument than with reality." These attributes evidently are multidimensioned constructs in themselves, and therefore, in line with the definition of attributes proposed earlier, are not "attributes." These five were "Special Sales/Promotions," "Layout of the Center," "Store Personnel," "Great Place to Spend a Few Hours," and "A Conservative Center." These multidimensional constructs deserve future study so as to reduce them to their components.

Implications

1. The basic economic forces of the exchange function are still primary to the consumer. The retailer should be especially aware of the consumer's feelings of value received for value given and the consumer's resulting image of his store will reflect that feeling. Retailer's should stress value in the components of their retail mix offerings which the consumer sees as salient.

2. The "Fashion" attribute deserves fuller consideration by retail researchers. The consumer finds "Fashion" to be part of the value received in the exchange process.

3. Shopping center managements should not only be aware of the need for clients who place proper emphasis on their marketing mix values but also should be concerned with 'hygiene' factors such as "Parking," "Layout," and "Refreshment and Comfort" areas.

4. Other attributes selected through researcher or retailer intuition as being of interest in retail image research should be tested through MDS or some other non-predetermining methodology to prevent the development of research artifacts.

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