Search And Experience Goods: Evidence From The 1960's And 70's

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ABSTRACT

This paper examines two aspects of search and experience goods: 1) the differences between the levels of retail and national-brand advertising that would be expected for search goods versus experience goods; and 2) differences in advertising intensity between these two types of goods. The ratio of retail to national-brand advertising was found to be greater for search goods than for experience goods. In addition, the ratio of national-brand advertising in newspapers to sales was found to be greater for experience goods than for search goods. The results overall provide considerable support for Nelson's (1970, 1974) work.

1. INTRODUCTION

In "Information and Consumer Behavior," Nelson (1970) defines a search good as one whose qualities can be determined by the consumer before purchase. Likewise, he defines an experience good as one whose qualities cannot be determined before purchase. This paper focuses on two aspects of search and experience goods that were examined in the above article and in a later paper by the same author (Nelson 1974).

The two aspects of search and experience goods that will be examined in this paper are: 1) the differences between the levels of retail and national-brand advertising that would be expected for search goods versus experience goods; and 2) differences in advertising intensity between these two types of goods.

2. BACKGROUND

The seminal work in the economics of information was done by Stigler (1961). In that research, Stigler analyzed the influence of information on market price. He found that price advertising reduced the dispersion of asking prices. Rothschild (1973) surveyed the theoretical literature regarding the effect of incomplete information on market equilibrium. Akerlof (1970) focused on the relationship between information and quality using the automobile market as an example. He found that lack of consumer information led to a reduction in the average quality of used cars and also in the size of the market. The concept of "credence" qualities, i.e., those qualities that cannot be evaluated in normal use, was added to the theory of the economics of information by Darbi and Karni (1973). They show that consumer fraud and related practices result from significant costs involved both in the determination of product quality and in the effective vertical integration of buyer and seller through an exchange of property rights. Spence (1973, 2002) applied the term "market signaling" to the economics of information relating to labor market-hiring decisions. He found that lack of information leads, under certain conditions, to the use of signals such as education to assess prospective employee productivity.[1] Wilde (1980) surveyed theoretical research on consumer information acquisition including both models of individual behavior and market equilibrium.

More recently, using Yellow Pages data, Laband (1986) found that the provision of consumer information for experience goods is greater than that of search goods. Furthermore, he found that because of greater consumer mobility, these advertisements contained more information in the Washington, DC area than in Baltimore, MD, where consumers develop alternative sources of product information. In a subsequent paper, using newspaper advertisements from 1986, Laband (1991) found that seller provided information is a positive function of product price. Using a classification of 1987 magazine advertisements based on survey data, Ford, Smith, and Swasy (1990),

found that consumers are more skeptical of experience good claims than of search good claims. Finally, Mixon (1995) analyzed Yellow Pages advertising in New York City and Los Angeles. His results indicated that sellers respond to consumer search costs by providing product information to minimize these costs.

3. RETAIL VS. NATIONAL-BRAND ADVERTISING

As pointed out by Nelson (1970), the advantages of retail advertising will be greater for stores that sell search goods than for stores that sell experience goods:

Retail advertising can attract customers to a store who would not have been customers for a national brand if it had been advertised. A response to an advertisement need not involve the purchase of the good advertised. If the consumer likes what he sees in an advertisement for a search good, he will make sure that he searches that brand; but nearby brands, whether they were advertised or not, will usually be searched too. The consumer will then buy the best of the set he has examined. The best is likely to be in the store the consumer initially visited, even if it is not the advertised brand. Since the consumer wants to minimize the cost of search, his first searches beyond searching the advertised brand will be in the store to which he initially went in response to the advertisement. By definition, this kind of search cannot be undertaken for experience goods (Nelson 1970, p. 324).

National-brand advertising, on the other hand, will be less advantageous to stores that sell search goods than to stores that sell experience goods, because the market area for search goods is wider than the market area for experience goods. "Since the brand's market area is larger than the store's, there are more potential customers for the brand than for the brand in a particular store" (Nelson 1970, p. 324). In order to test his hypothesis, Nelson examined advertisements in the *New York Times* over seven "scattered" days during 1966-67 and found the ratio of the number of retail advertisements to the number of national-brand advertisements to be much greater for search goods than for experience goods.

To test whether this hypothesis would hold true for different data and different time periods, retail advertising expenditures in five newspapers during 1963 for different product categories was compared with national-brand advertising expenditures in newspapers in 1972 in these categories. The results are shown in table 1. The Akron and Albany newspapers were used simply because they had both daily and Sunday editions and were the first to appear in the data that were presented in alphabetical order. No attempt at random sampling and no inflation adjustment was made. Nevertheless, assuming that the relative intensity of national-brand advertising in the product categories didn't change between 1963 and 1972, there is no reason to believe that the first newspapers listed in alphabetical order would contain data that had any particular bias. The difference in years between the retail and national-brand advertising data is the result of data limitations and is not expected to influence the cross-sectional results.[2] Using Nelson's (1970, p. 325) classification of experience and search goods, the ratio of retail to national-brand advertising by type of good was then calculated.

Two different classification systems of experience and search goods are used. In classification 1, the jewelry, watches, and silverware category is included with the experience goods. In classification 2, this category is included with the search goods. The problem with this particular category has been discussed by Nelson (1970). Watches should be classified as an experience good while jewelry and silverware should be classified as search goods. Because the retail advertising data did not permit a breakdown of this category into its components, the two different classification systems have been used.

A comparison of the geometric mean ratios of retail to national-brand advertising of the experience and search categories for each of the five newspapers was then made. The hypothesis that the difference in the means is equal to zero against the alternative hypothesis that the mean of the search good category is greater than the mean of the experience good category was then tested.[4] The results are shown in table 2 for both classification 1 and classification 2.

Table 1 Retail and national-brand advertising (expenditures in thousands of dollars)

		Retail				
	National	**Akron Beacon Journal Evening**	**Albany Akron Beacon Journal Sun.**	**Knicker-bocker News evening**	**Albany Times Union morning**	**Albany Times Union Sun.**
Experience Goods:						
Liquor	68,685	.072	___	2.362	37.165	1.142
Ratio		.000001	___	.00003	.00054	.00002
Ln Ratio		-13.8155	___	-10.4143	-7.5239	-10.8198
Food	113,385	2,649.531	27.330	2,253.618	1,878.992	502.374
Ratio		.02337	.00024	.01988	01657	.00443
Ln Ratio		-3.7563	-8.3349	-3.9180	-4.1002	-5.4194
Drugs and Toiletries	37,300	636.803	122.978	120.725	233.027	36.187
Ratio		.01707	.00330	.00324	.00625	.00097
Ln Ratio		-4.0704	-5.7138	-5.7322	-5.0752	-6.9382
Auto	181,705	75.867	37.535	78.469	3.619	85.388
Ratio		.00042	.00021	.00043	.00002	.00047
Ln Ratio		-7.7753	-8.4684	-7.7517	-10.8198	-7.6628
Radio, TV, and Phono	17,010	257.929	167.215	106.319	173.831	65.189
Ratio		.01516	.00983	.00625	.01022	.00383
Ln Ratio		-4.1891	-4.6223	-5.0752	-4.5834	-5.5649
Household Equipment and Appliances	20,645	397.175	279.615	190.713	239.812	159.590
Ratio		.01941	.01366	.00932	.01172	.00780
Ln Ratio		-3.9420	-4.2933	-4.6756	-4.4465	-4.8536
Ambiguous Goods:						
Jewelry, Watches, and Silverware	4,125	190.799	131.670	170.822	41.269	47.623
Ratio		.04625	.03192	.04141	.01000	.01154
Ln Ratio		-3.0737	-3.4445	-3.1842	-4.6052	-4.4619
Search Goods:						
Wearing Apparel	26,685	1,974.429	1,173.309	2,408.003	659.360	906.994
Ratio		.07399	.04397	.09024	.02471	.03399
Ln Ratio		-2.6038	-3.1242	-2.4053	-3.7005	-3.3817
Sporting Goods & Cameras	12,990	___	63.809	43.109	17.184	55.400
Ratio		___	.00491	.00332	.00132	.00426
Ln Ratio		___	-5.3165	-5.7078	-6.6301	-5.4585
Household Furniture and Furnishings	5,270	1,795.258	1,630.515	821.680	592.704	1,226.684
Ratio		.34066	.30940	.15592	.11247	.23277
Ln Ratio		-1.0769	-1.1731	-1.8584	-2.1851	-1.4577

Retail advertising expenditures from *Media Records Blue Book, Part 1: Newspapers, 1963*. National advertising expenditures from *Expenditures of National Advertisers in Newspapers*, Newspaper Advertising Bureau, New York, New York, 1972.

Table 2 Mean ratios of retail to national-brand advertising

	Akron Beacon Journal Evening	Akron Beacon Journal Sun.	Albany Knicker-bocker News evening	Albany Times Union morning	Albany Times Union Sun.
CLASSIFICATION 1					
Experience Goods:					
Arithmetic Mean	.01738	.00986	.01151	.00790	.00415
Geometric Mean	-5.8032	-5.8129	-5.8216	-5.8792	-6.5315
Search Goods:					
Arithmetic Mean	.20733	.11943	.08316	.04617	.09034
Geometric Mean	-1.8404	-3.2046	-3.3238	-4.1719	-3.4326
Diff. A[a]	.18995	.10957	.07165	.03827	.08619
Diff. G[b]	3.9628	2.6083	2.4978	1.7073	3.0989
t[c]	3.514****	1.743+	1.51+	1.026	2.085**
CLASSIFICATION 2					
Experience Goods:					
Arithmetic Mean	.01257	.00545	.00653	.00755	.00292
Geometric Mean	-6.2581	-6.2865	-6.2612	-6.0915	-6.8765
Search Goods:					
Arithmetic Mean	.15363	.09755	.07272	.03713	.07064
Geometric Mean	-2.2515	-3.2646	-3.2889	-4.2802	-3.69
Diff. A[a]	.14106	.0921	.06619	.02958	.06772
Diff. G[b]	4.0066	3.0219	2.9723	1.8113	3.1865
t[c]	3.804****	2.40**	.117**	1.187	2.434*

[a]Difference in the arithmetic mean; [b]Difference in the geometric mean; [c]Test result of the hypothesis that Diff. G = 0; **Significant at the one percent level; *Significant at the five percent level; +Significant at the ten percent level

The results in table 2 provide considerable support for Nelson's hypothesis. No matter which classification system is used, the difference in the mean ratios is statistically significant at the ten percent level in four out of the five separate tests. In the other two cases (one in each classification), the differences in the mean ratios are in the right direction, but are not statistically significant.

4. DIFFERENCES IN ADVERTISING INTENSITY

Another aspect of experience and search goods that has been examined by Nelson (1974) is the difference in advertising intensity between the two types of goods. Nelson has shown that the marginal revenue of advertising is greater for producers of experience goods than for producers of search goods. Without repeating his entire argument here, Nelson's basic hypothesis is that there will be more advertising for experience goods than for search goods. The difference in advertising intensity between search and experience goods is a result of the difference in the type of information that advertising provides to the consumer. The information that advertising of experience goods provides to the consumer is mainly that the brand advertises. Besides information that relates a brand with its function, there is little direct information contained in the advertising for experience goods. On the other hand, advertising for search goods provides direct information to the consumer about the qualities of a particular good. Thus "advertising of experience qualities increases sales through increasing the reputability of the seller, while advertising of search qualities increases sales by providing the consumer with 'hard' information about the seller's products" (Nelson 1974, p. 740). In order to test this hypothesis, Nelson looked at advertising to sales ratios for 1957 and found the mean ratio of the experience good category to be greater than the mean ratio of the search good category.

As a further test of this hypothesis, national-brand advertising in newspapers and merchandise line sales for 1972 were examined. Using Nelson's (1970, p. 325) classification of experience and search goods, the ratio of national-brand advertising in newspapers to sales by type of good was then calculated. The results are shown in table 3.

Table 3 National-brand advertising in newspapers/sales, 1972 (expenditures in thousands of dollars)

	Advertising	Sales	Ratio	Ln Ratio
Experience Goods:				
Alcoholic Beverages	76,285	18,591,603	.0041	-5.4968
Food	113,385	86,390,563	.0013	-6.6454
Automotive	181,705	110,257,581	.0016	-6.4378
Tobacco	98,505	6,110,118	.0161	-4.1289
Drugs and Medical Products	15,840	11,169,505	.0014	-6.5713
Toiletries	21,460	4,485,302	.0048	-5.3391
Radio, Television, and Phonographs	17,010	8,176,222	.0021	-6.1658
Household Equipment and appliances	7,338,945	.0028	-5.8781	
Search Goods:				
Wearing Apparel	26,685	48,600,486	.0005	-7.6009
Sporting and Recreational Equipment	4,415	7,244,268	.0006	-7.4186
Household Furniture and Furnishings	5,270	28,402,427	.0002	-8.5172
Lawn and Garden Supplies	16,030	3,958,993	.0040	-5.5215
Hardware, Tools, and Building Materials	4,600.583	20,298,928	.0002	-8.5172

Advertising data from *Expenditures of National Advertisers in Newspapers*. Sales data from *U.S. Bureau of the Census, Census of Retail Trade, 1972, Merchandise Line Sales, United States Summary*, RC72-L.

A comparison of the geometric mean ratios of national-brand advertising in newspapers to sales for the two different categories of goods was then made. A test of the hypothesis that the difference in the means is equal to zero against the alternative hypothesis that the mean of the experience good category is greater than the mean of the search good category gave the results shown in table 4.

Table 4 Mean ratios of national-brand advertising in newspapers to sales, 1972

	Experience Goods	Search Goods	Differences
Arithmetic Mean	.0043	.0011	.0032
Geometric Mean	-5.8329	-7.5151	1.6822
t[a] =	2.958**		

[a]Test result of the hypothesis that the difference in the geometric means is equal to zero
**Significant at the one percent level

The results provide strong support for the hypothesis that there will be more advertising for experience goods than for search goods. The difference in the mean ratios between experience goods and search goods is statistically significant at the one percent level. Because this test uses newspaper advertising data only, while Nelson's test was based on advertising expenditures in all media, these results are not as general. Their comparability to Nelson's results depends on the distribution of advertising expenditures by product category in

newspapers versus that distribution in other media. Nelson's work points out that newspapers are more suited to advertising for search goods, because the consumer will want to refer back to these advertisements. Thus, it is likely that the distribution of advertising expenditures by product category for newspapers would be different than that of television. Nevertheless, a complete analysis of this distribution is beyond the scope of this paper.

5. CONCLUSION

In conclusion, in general, my empirical results agree with Nelson's on the aspects of experience and search goods that have been examined in this paper. The ratio of retail to national-brand advertising has been found to be greater for search goods than for experience goods. In addition, the ratio of national-brand advertising in newspapers to sales has been found to be greater for experience goods than for search goods. Thus, the results overall provide considerable support for Nelson's basic proposition that there is a fundamental difference in the information characteristics of search and experience goods.

6. SUGGESTIONS FOR FUTURE RESEARCH

Recent innovations in consumer information gathering, such as direct mail, the Internet, and television's home shopping channels and info-mercials are likely to affect the intensity of advertising for experience goods more than for search goods.[5] Because there is more advertising for experience goods than for search goods, these substitutes for other advertising media are likely to have a greater impact on the former types of goods. These innovations may change both the consumer's approach to gathering product information and the seller's approach to providing product information. Direct mail and the Internet are more suited to advertising for search goods, because the consumer would be able to refer back to these advertisements. Television's home shopping channels and info-mercials are more suited to advertising for experience goods, because this type of reference is not possible. Nevertheless, for the reasons discussed above, greater advertising intensity would still be expected for experience goods than for search goods. Further research in this area may well prove to be beneficial to the issues examined in this study as well as to other economic implications of consumer information.

The views expressed are those of the author and do not necessarily reflect the views of the Internal Revenue Service.

ENDNOTES

1. A survey of the literature on signaling is contained in Riley (2001).
2. Inflation would affect the size of the ratio of retail to national-brand advertising, but not the relationship between differences in those ratios between product categories. The years 1963 and 1972 were chosen because they were the most recent available at the time this part of the empirical research was done. Although that was some time ago, the object of this research was still satisfied. Namely, there search was designed to see if results similar to Nelson's would hold true for different data and different time periods. Furthermore, if data from the early 1960s and 1970s provide insights into modern retail practices, then the differences between search and experience goods found in this paper would still apply today. Whether or not this is the case depends on how the distribution of retail and national-brand advertising changes over time. An analysis of changes in this distribution is beyond the scope of this paper.
3. The use of the geometric mean reduces the likelihood of bias resulting from a few large observations in the data. It is particularly well suited for measurement of the central tendency of ratios (Brumbaugh and Kellogg 1946, p. 492). Throughout this paper, the geometric mean is expressed in logarithmic form.
4. When jewelry stores were included with the experience goods category, the difference in the ratios was in the right direction but was not significant.
5. Poon (1999), however, finds evidence suggesting that product characteristics have no significant impact on Internet commerce.

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