

DIFFERENCES AT THE STAGE OF INFORMATION SEARCHING: MULTIPLE DISCRIMINANT ANALYSIS FOR AUTOMOBILE CONSUMERS

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ABSTRACT

Consumers' information search is the most troubled phase of the purchasing decision process. In this phase, consumers have trouble deciding which information type and information source to approach. In this study, whether consumers differ by their sex, marital status, educational level, age group and ownership of goods in respect to their demand for information type and preferred information source is examined with discriminant analysis. The discriminant analysis results point out that the discriminant functions of sex, marital status, educational level, age group and ownership of goods in respect to their demand for information type and preferred information source account for a meaningful proportion of the differences among the groups.

I. INTRODUCTION

Consumers' behavior has come into marketers' area of interest after 1970s. Today, consumers' behavior has become the focus for marketer's all actions. One of its most important subjects is how consumers advance through the purchasing decision processes, for goods and services to satisfy their needs. The answers of questions such as how consumers make pass their purchasing decisions processes, and how consumers are affected by which factors, and the direction and intensity of their effect will guide marketers.

It could be thought that all problems about consumers' information seeking behavior were analyzed in the available research. However, there are some subjects remaining about information seeking behavior. For example, it's an important question whether consumers' importance of information types and sources are different in respect to their demographics, socio-cultural properties, and whether the search is for using goods or services. If there are differences, it's not a realistic supposition what all consumers are homogenous by stated factors. On the other hand, on all phases of consumers' purchasing behavior, consumers' attitudes and behaviors are different in respect to their cultural and personal characteristics. Past research points out that consumer' cultural and personal characteristics have an important role on purchasing decision process (Solomon, Bamossy and Askegaard, 2002, 241-245).

Marketers who know well and evaluate every phases of the purchasing decision process could increase their performance by implementing the marketing mix at right time and right amount (Tek, 1997, 212). For an important subject for marketers are to offer right information which will form the basis to customers decision process. In order to offer right information to consumers, marketers have to select information type and source that consumers want to use (Mattila and Wirtz, 2002, 214-230). A business that helps consumers' information search efforts better than others can gain a competitive advantage. Knowing which information search source at the information search phase of consumers' purchasing decision process is preferred whether consumers get information actively or passively from these information sources, and whether consumers differ in respect to experiences on goods or services, sex, age, education, and income, etc. is of importance.

In this study, we are seeking the answers for these questions; do consumers differ by sex, marital status, educational level, age group and automobile ownership in their choice of information type and information source?

II. FINDINGS

Labeling the Discriminant Functions for the Knowledge Type (KT) Data

The structure matrixes for discriminant analyses give the simple correlation between the attributes and the discriminant scores (Table I and Table II). The higher the loading of a given variable (or attribute) on a function, the more representative a function is of that attribute. *KT15* (%39.4), *KT13* (%36.8), *KT14* (%35.5), *KT20* (%34.2) and *KT18* (%31) have a significant (high) loading on the discriminant function where the dependent variable is sex and therefore this function is labeled “**design and security**” to represent the design and security of the car (Table I). Note that the attribute descriptions used in this study are given in Appendix I.

Similarly, the discriminant function where the dependent variable is marital status is labeled “**capacity and services**”. The discriminant functions where the dependent variable is educational level are labeled “**guarantee and services opportunity**” and “**design, services and selling facility**” respectively. The first and the second discriminant functions where the dependent variable is age group are labeled “**fuel consumption, external design and guarantee**” and “**spare part and durability**” respectively. The discriminant function where the dependent variable is ownership of automobile is labeled “**selling facilities and durability**” (Table I).

Labeling the Discriminant Functions for the Knowledge Source Data

The structure matrix for the knowledge source data is given in Table II. *KS10* (%58.3), *KS11* (%57.3), *KS09* (%52.5), *KS08* (%41.4), *KS04*

(%40.9) and *KS07* (%36.6) have a significant (high) loading on the first discriminant function where the dependent variable is sex and therefore this function is labeled “**sales representative, television, newspaper and magazines**” to represent the importance of those attributes. (Table II).

TABLE I: STRUCTURE MATRIX FOR KNOWLEDGE TYPE (KT) DATA

Code	Sex	Marital Status		Educational Level		Age Group			Ownership		
	<i>F-1</i>	Code	<i>F-1</i>	Code	<i>F-1</i>	<i>F-2</i>	Code	<i>F-1</i>	<i>F-2</i>	Code	<i>F-1</i>
<i>KT15</i>	,394	<i>KT19</i>	,495	<i>KT05</i>	,543	,119	<i>KT02</i>	,374	-,079	<i>KT06</i>	,449
<i>KT13</i>	,368	<i>KT11</i>	-,397	<i>KT04</i>	,542	,091	<i>KT18</i>	-,371	,071	<i>KT12</i>	,348
<i>KT14</i>	,355	<i>KT18</i>	-,361	<i>KT03</i>	,419	,013	<i>KT05</i>	,368	-,050	<i>KT19</i>	-,332
<i>KT20</i>	,342	<i>KT02</i>	,310	<i>KT12</i>	,379	,295	<i>KT19</i>	,343	-,004	<i>KT18</i>	,331
<i>KT18</i>	,310	<i>KT03</i>	,300	<i>KT02</i>	,375	,055	<i>KT03</i>	,289	,140	<i>KT07</i>	,316
<i>KT19</i>	,292	<i>KT23</i>	-,265	<i>KT06</i>	,349	,204	<i>KT11</i>	-,255	,063	<i>KT15</i>	,286
<i>KT10</i>	,242	<i>KT22</i>	,258	<i>KT10</i>	,310	,204	<i>KT23</i>	-,227	-,086	<i>KT05</i>	,282
<i>KT06</i>	,239	<i>KT15</i>	-,252	<i>KT19</i>	,235	,033	<i>KT01</i>	,212	,056	<i>KT17</i>	,230
<i>KT01</i>	,237	<i>KT20</i>	,251	<i>KT13</i>	,133	,127	<i>KT20</i>	,211	-,117	<i>KT11</i>	,207
<i>KT21</i>	,231	<i>KT05</i>	,201	<i>KT15</i>	,117	,090	<i>KT13</i>	,199	,176	<i>KT14</i>	-,198
<i>KT16</i>	,204	<i>KT17</i>	-,190	<i>KT08</i>	,064	,046	<i>KT21</i>	-,194	-,135	<i>KT22</i>	-,189
<i>KT12</i>	-,191	<i>KT21</i>	-,166	<i>KT07</i>	,103	,633	<i>KT09</i>	,192	,044	<i>KT13</i>	,188
<i>KT11</i>	,159	<i>KT12</i>	,165	<i>KT09</i>	,141	,514	<i>KT22</i>	,173	-,099	<i>KT01</i>	-,183
<i>KT09</i>	,147	<i>KT04</i>	,145	<i>KT16</i>	-,125	,416	<i>KT14</i>	,169	,120	<i>KT10</i>	,166
<i>KT02</i>	,140	<i>KT09</i>	,143	<i>KT11</i>	,249	,359	<i>KT17</i>	-,167	,058	<i>KT09</i>	,156
<i>KT17</i>	,137	<i>KT01</i>	,103	<i>KT17</i>	,249	,346	<i>KT15</i>	-,132	,097	<i>KT20</i>	,120
<i>KT23</i>	-,132	<i>KT13</i>	,099	<i>KT18</i>	,127	,299	<i>KT07</i>	-,091	,000	<i>KT04</i>	,067
<i>KT07</i>	,108	<i>KT07</i>	,095	<i>KT21</i>	,174	,251	<i>KT04</i>	,255	,534	<i>KT23</i>	,047
<i>KT22</i>	,093	<i>KT10</i>	-,095	<i>KT23</i>	,143	,230	<i>KT12</i>	,166	,299	<i>KT03</i>	,045
<i>KT03</i>	,089	<i>KT14</i>	,089	<i>KT14</i>	-,017	,211	<i>KT10</i>	,035	,295	<i>KT16</i>	,037
<i>KT05</i>	-,073	<i>KT08</i>	-,089	<i>KT20</i>	-,047	,176	<i>KT16</i>	-,034	-,255	<i>KT02</i>	-,035
<i>KT08</i>	,063	<i>KT16</i>	-,081	<i>KT01</i>	-,109	,110	<i>KT08</i>	,163	-,201	<i>KT21</i>	-,011
<i>KT04</i>	-,007	<i>KT06</i>	,075	<i>KT22</i>	,024	,106	<i>KT06</i>	,047	-,084	<i>KT08</i>	,005

TABLE II: STRUCTURE MATRIX FOR KNOWLEDGE SOURCE (KS) DATA

Code	Sex	Marital Status		Educational Level		Age Group			Ownership		
	<i>F-1</i>	Code	<i>F-1</i>	Code	<i>F-1</i>	<i>F-2</i>	Code	<i>F-1</i>	<i>F-2</i>	Code	<i>F-1</i>
<i>KS10</i>	,583	<i>KS05</i>	,541	<i>KS13</i>	-,371	-,239	<i>KS01</i>	-,483	,215	<i>KS01</i>	,483
<i>KS11</i>	,573	<i>KS03</i>	,483	<i>KS12</i>	-,360	-,079	<i>KS11</i>	,449	-,002	<i>KS03</i>	,364
<i>KS09</i>	,525	<i>KS01</i>	,440	<i>KS15</i>	,326	-,216	<i>KS03</i>	-,438	,344	<i>KS15</i>	-,363
<i>KS08</i>	,414	<i>KS14</i>	-,267	<i>KS01</i>	,323	,030	<i>KS14</i>	,435	,402	<i>KS10</i>	-,272
<i>KS04</i>	,409	<i>KS11</i>	-,263	<i>KS11</i>	,170	-,120	<i>KS15</i>	,336	-,037	<i>KS06</i>	-,261
<i>KS07</i>	,366	<i>KS09</i>	-,223	<i>KS14</i>	-,125	-,056	<i>KS05</i>	-,277	-,132	<i>KS11</i>	-,254
<i>KS13</i>	,285	<i>KS08</i>	-,206	<i>KS07</i>	,123	,103	<i>KS10</i>	,235	-,065	<i>KS07</i>	-,158
<i>KS03</i>	-,260	<i>KS06</i>	,169	<i>KS09</i>	-,104	,034	<i>KS09</i>	,183	,012	<i>KS14</i>	,146
<i>KS06</i>	,222	<i>KS02</i>	,141	<i>KS06</i>	,082	,068	<i>KS02</i>	,091	,511	<i>KS08</i>	-,073
<i>KS14</i>	,181	<i>KS12</i>	-,140	<i>KS05</i>	,333	,545	<i>KS04</i>	,156	,388	<i>KS04</i>	-,063
<i>KS01</i>	-,178	<i>KS04</i>	,111	<i>KS04</i>	-,135	,322	<i>KS06</i>	,287	,329	<i>KS02</i>	,058
<i>KS02</i>	,159	<i>KS15</i>	-,100	<i>KS08</i>	-,170	,277	<i>KS12</i>	,221	,296	<i>KS05</i>	-,027
<i>KS12</i>	,155	<i>KS07</i>	,087	<i>KS02</i>	-,010	-,233	<i>KS08</i>	,181	,241	<i>KS09</i>	-,021
<i>KS05</i>	-,100	<i>KS13</i>	-,042	<i>KS10</i>	,170	,211	<i>KS07</i>	,072	,236	<i>KS13</i>	,020
<i>KS15</i>	-,022	<i>KS10</i>	-,028	<i>KS03</i>	,069	,137	<i>KS13</i>	,212	,212	<i>KS12</i>	-,011

Correspondingly the discriminant function where the dependent variable is marital status is labeled “**service persons, accumulation and experiences**”. The discriminant functions where the dependent variable is educational level are labeled “**internet, web pages**” and “**showroom and experiences**” respectively. The first and the second discriminant functions where the dependent variable is age group are labeled “**experiences, televisions and showrooms**” and “**friends, relatives and neighborhoods**” respectively.

The discriminant function where the dependent variable is ownership of automobile is labeled “**experiences and accumulation**” (Table II).

III. CONCLUSION

Consumers’ information seeking behavior is very important for marketers. Consumers deeply seek in formations to minimize risks of their decisions at information seeking phase of the purchasing decision process. However, marketers posit that consumers are homogeneous and do not differ by demographic, psychological, and social factors in their promotion mix. But, consumers may have different attitudes and behaviors by their seeking information type and information source. As things stand, prepared promotion program will not incur same effects on all target consumers. If consumers are different by their sex, marital status, educational level, age group and ownership of automobile for seeking information type and source, then these differences must be considered in preparing promotion mix to get competitive advantage. Thus, consumers may get information type which they just want through information source which they prefer and may easily pass the information seeking phase with an eye to minimize their risks.

The discriminant analysis results for the knowledge type data show that the most important attributes for grouping variables of sex, marital status, educational level, age group and ownership of automobile are related with “**design and security;**” “**capacity and services;**” “**guarantee and services opportunity;**” “**design, services and selling facility;**” “**fuel consumption, external design and guarantee;**” “**spare part and durability**” and “**selling facilities and durability**” respectively.

On the other hand the discriminant analysis results for the knowledge source data show that the most important attributes for grouping variables of sex, marital status, educational level, age group and ownership of automobile are related with “**sales representative, television, newspaper and magazines;**” “**service persons, accumulation and experiences;**” “**internet and web pages;**” “**showrooms and experiences;**” “**experiences, televisions and showrooms**” and “**friends, relatives and neighborhoods**” and “**experiences and accumulation**” respectively.

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APPENDIX I

	Code	Description of Attributes (Variables)
Grouping At.	<i>N01</i>	Sex (Male, Female)
	<i>N02</i>	Marital Status (Married, Unmarried)
	<i>N03</i>	Educational Level (Primary, Middle, High)
	<i>N04</i>	Age Group (Under 30, 30-40, Upper 40)
	<i>N05</i>	Ownership of Automobile (Yes, No)
Knowledge Type Attributes (KT)	<i>KT01</i>	Information about price
	<i>KT02</i>	Information about fuel consumption
	<i>KT03</i>	Information about spare part price
	<i>KT04</i>	Information about spare part availability
	<i>KT05</i>	Information about guarantee opportunities
	<i>KT06</i>	Information about payments facilities
	<i>KT07</i>	Information about the ability of selling in used markets
	<i>KT08</i>	Information about technological attributes
	<i>KT09</i>	Information about services opportunities
	<i>KT10</i>	Information about horsepower
	<i>KT11</i>	Information about services attributes
	<i>KT12</i>	Information about durability
	<i>KT13</i>	Information about usage facility
	<i>KT14</i>	Information about model
	<i>KT15</i>	Information about color
	<i>KT16</i>	Information about services type
	<i>KT17</i>	Information about internal design
	<i>KT18</i>	Information about external design
	<i>KT19</i>	Information about baggage capacity
	<i>KT20</i>	Information about security attributes
	<i>KT21</i>	Information about comfort
	<i>KT22</i>	Information about passenger capacity
	<i>KT23</i>	Information about accessory
Knowledge Source Attributes (KS)	<i>KS01</i>	Information obtained from experiences
	<i>KS02</i>	Information obtained from friends
	<i>KS03</i>	Information accumulation
	<i>KS04</i>	Information obtained from relatives
	<i>KS05</i>	Information obtained from repairman and service persons
	<i>KS06</i>	Information obtained from neighborhoods
	<i>KS07</i>	Information obtained from advertisement brochures
	<i>KS08</i>	Information obtained from magazines
	<i>KS09</i>	Information obtained from newspaper
	<i>KS10</i>	Information obtained from sales representatives
	<i>KS11</i>	Information obtained from televisions
	<i>KS12</i>	Information obtained from web pages
	<i>KS13</i>	Information obtained from internet
	<i>KS14</i>	Information obtained from showrooms
	<i>KS15</i>	Information obtained from test driving