

AUTOMOBILE OWNERS IN TERMS OF THEIR
SIMILARITIES AND DIFFERENCES

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
Robert Lincoln Sterling
1957





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AN INVESTIGATION OF CERTAIN PREFERENCES
OF AUTOMOBILE OWNERS IN TERMS OF THEIR
SIMILARITIES AND DIFFERENCES

By

Robert Lincoln Sterling

A THESIS

Submitted to the College of Science and Arts
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1957

The purpose of this study was to investigate, by way of a mail questionnaire, automobile owner preferences in terms of their similarities and differences.

There were two forms of the questionnaire, A and B, of which 400 of each form were sent to each of the two samples selected at random from the Motor Vehicle Registrations for 1956 of Ingham County, Michigan. Form B was utilized in this study.

This questionnaire consisted of six sections which were as follows: (1) Present Car, (2) Next Car, (3) Trends, (4) Safety, (5) Features, and (6) Statements. Each of these sections contained what was considered to be a representative sampling of items relevant to automotive design and construction.

The respondents were to designate on the scales provided, their satisfaction with their present car; what they would like to find in their next car; their approval of current trends in the automobile; the degree to which they felt various features contributed to safety; the importance of one of a pair of items, for each pair listed; and their agreement with each of a number of statements. Upon completion, the questionnaire was to be returned in a self-addressed, stamped envelope which was enclosed with each

questionnaire.

One hundred two Form B questionnaires were returned which were complete in every detail; thirteen others which were returned could not be used because of omissions, or a failure to follow the directions in answering.

Appropriate scoring procedures were devised for each section of the questionnaire. Nonparametric statistics were utilized throughout the analysis of the data, as no assumptions of normality could be made.

The owner variables investigated were as follows:
(1) age, (2) height, (3) weight, (4) distance driven, (5) intent to purchase, and (6) make, model, and year of last car, present car, and probable next car.

The findings of this study indicated that there were statistically significant relationships between the various respondent characteristics and their responses to the features in each of the six sections of the questionnaire. Preferences for certain features were related to owner characteristics, and differences as well as similarities in these preferences were found to exist.

ACKNOWLEDGMENTS

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INTRODUCTION

INTRODUCTION

The purpose of this investigation was to determine what owner preferences were for specific features of the automobile in terms of owner similarities and differences.

For the purposes of this investigation, the owners could be classified in terms of the following: (1) age, (2) sex, (3) height, (4) weight, (5) marital status, (6) average distance driven per year, (7) make, model, and year of last, present, and next car, and (8) intent to purchase. The features investigated were divided into six sections in the questionnaire. These were: (1) Present Car, (2) Next Car, (3) Trends, (4) Safety, (5) Features, and (6) Statements. These various breakdowns were considered sufficient to provide a large enough range in differences for the respondents in terms of the analysis, and to provide a satisfactory coverage of automotive design and construction.

Today, automobiles are no longer produced in small quantities; the goal set by the industry for 1957 was six million automobiles (16). It is self evident that with production at such a high level, individual differences in preference cannot be catered to; the car produced must be some sort of a compromise in terms of these potential owner differences. The result of this is the seeming variety of

automobiles available today. That is, the manufacturers have, to compensate for individual differences, attempted to produce what could be termed cheap cars, expensive cars, fast cars, slow cars, long cars, short cars, and etc., in the hopes that any individual could purchase a car that would satisfy his needs. This plan has, it seems, convinced the average driver that he is somewhat different from any other driver and requires a particular model or make to provide for these differences. However, these differences which are reputed to exist by the manufacturers may be more the result of autistic thinking on the part of the owner, than any genuine engineering and/or design differences.

If this is the situation, then there would be little reason to anticipate any differences in response for any one specific feature or group of features, but if the responses given for any one specific feature or group of features varied from owner to owner and from make to make, there would be reason to believe that the differences found were related to owner and/or automobile characteristics. Information of this type could prove to be of value to the manufacturer.

Some of the implications for the manufacturer might be a more realistic view of consumer demands, which could be of value with reference to advertising and remotely to the various aspects of production and design.

The mania for change which has encompassed the manufacturers in their never ending battle for sales supremacy is an expensive proposition, both for the manufacturers and the consumer. Perhaps this constant change is not, in reality, the most important factor in the determination of whether or not the public decides to purchase. Other reasons of a more practical nature may be the deciding factor and it is possible that these reasons may be unknown to the manufacturers. Further, changes of any type may be directed, in terms of what group or segment of the population actually purchases the majority of the new cars, away from that segment of the population which seldom, if ever, purchases one.

There are many other ramifications and implications for the manufacturer which will be considered in the latter chapters.

BACKGROUND

BACKGROUND

A survey of the literature was made in an effort to secure information pertinent to the subject of automobile surveys. To the best of this writer's knowledge there was a very real paucity of information available on this subject. An article by Weaver (17) was about the extent of the findings, and the information in this article was vague with respect to the results obtained, and the methodology employed. One factor was mentioned, however, in this article which may to some extent provide the rationale as to why survey information of this type has been seldom published. Weaver suggested that very little, if any, of the obtained data were used for practical purposes because of certain technical problems and their related cost factors. This would suggest then, that surveys of this type are for public relations purposes or as a check on changes that have already been introduced, rather than as a source of data to assist in the determination of future changes or modifications.

A review of the literature was also conducted to secure information relative to the development and structuring of the mail questionnaire. Also of interest were the various statistical methods and scaling procedures applicable to an investigation of this kind. Information concerning the composition

of respondents to mail questionnaires was reviewed in an effort to determine what could be anticipated with reference to the representativeness of the population studied.

Mail surveys have not always been viewed as the best possible method for obtaining data. However, the choice of this type of survey for this investigation was presumed to be the most adequate in terms of the data sought, the population considered, the time aspect, and the financial limitations. Another facet of the mail questionnaire which seemed appropriate was its impersonal nature and the fact that responses are usually given more freely (2, 8). The risk of interviewer bias was also eliminated, and while the subject matter was not extremely controversial, there existed the possibility of personal involvement.

Despite these advantages there are, on the other hand, certain disadvantages connected with a survey of this type. Several authors (2, 15, 8, 12) have indicated that by utilizing a mail questionnaire to obtain data, you do not know who the people are who answer; the returns could be a biased selection of the original addressees; it is difficult to determine the representativeness of the respondents in terms of the non-respondents; and personal data information are occasionally omitted.

These authors also pointed out that, in general, the respondents to mail questionnaires have more education, are

articulate or at least more so than the average, and are joiners. This point was qualified, however, with respect to the subject matter of the questionnaire. Individuals who might not normally take the time to fill out the questionnaire often will, if the subject matter is of interest to them. Bauer (1) suggested that the greatest bias was introduced by differences of interest in the subject matter of the questionnaire. This bias would evidence itself to a greater degree if the returns are small, especially on a subject of interest to only a part of the sample. The subject matter used in this study was felt to be of interest to all, as it was sent only to automobile owners and in this way, while it was evident that not all would respond, the possibility of receiving a fairly representative sample was increased. Frazen and Lazarsfeld (8) while indicating that there are consistent and statistically significant biases in a mail questionnaire sample, state that for most practical purposes the biases are not (with reference to their study) large and can be corrected to eliminate distortion of the data.

Reid and others (13, 5, 14) suggest that there is a difference between respondents and non-respondents; a bias. To compensate for this, a follow-up questionnaire should be utilized to correct for any bias in the responses of the original sample. Some estimate of the probable answers of the non-respondents can then be inferred from these two groups.

As it was impractical to use a follow-up questionnaire in this study, a second questionnaire fairly similar to this form was sent out and some of the limitations of a single questionnaire compensated for.

A cut-off date, two weeks after the date of mailing, was decided upon due to certain time limitations, and for the most part the major portion of the replies were received by that date. According to Manfield (10) there is a pattern of response to mail questionnaires, about nine-tenths of the questionnaires to be ultimately returned will be received by the end of the tenth day. The four additional days used here were thought sufficient time beyond the ten day period to insure a fairly complete return.

Stanton (15) found in a study he conducted that the late returns are not significantly different from the early returns. Thus, there is no real need to wait for the remainder of replies before analyzing the returned data. To wait for the later returns could delay the completion of the survey for an overlong period of time.

The format of the questionnaire and its contents are discussed at length by several authors (12, 7, 3) and in summary, they have indicated or outlined what should or should not be done in the production of a mail questionnaire. Such things as concern for overall length, placement of the questions,

phrasing of the questions, and the relationship of the responses to one proposition as influenced by another, are a few of the precautions mentioned. Other factors to be cognizant of are: the intellegibility of the questions; elimination of any bias or emotional content in the questions; general appearance; enclosure of a letter of transmittal; and even such a seemingly insignificant thing as the color of the postage stamp (11). Within the limitations of the questionnaire utilized in this study, an effort was made to comply with the information obtained. In terms of length, there seemed to be no way, at least at the time, to reduce the length of the questionnaire.

The questionnaire was to be anonymous and it was thought that by keeping it this way, the number of respondents might be increased. The virtues of anonymity have been debated, and Corey (4) has found that this factor had little influence over the responses of his subjects. However, to be on the safe side, the requirement that the respondents identify themselves was not employed.

The statistics utilized to analyze the responses were chosen because no assumptions could be made with respect to the normality of the distribution and in a situation such as this, nonparametric or distribution-free methods are advisable (7). Also the inability to do anything other than assign ranks to the data had to be considered. The coefficient of

concordance and the rank order correlation as described by Edwards (6) were the principal statistics used in this study.

HYPOTHESES

HYPOTHESES

1. The relationship between the three owner age groups and their rankings of the items on Present Car, Next Car, Trends, Safety, Features, and Statements will not be significantly other than zero.
2. The relationship between the three height groups and their rankings of the items on Present Car, Next Car, Trends, Safety, Features, and Statements will not be significantly other than zero.
3. The relationship between the three distance-driven groups and their rankings of the items on Present Car, Next Car, Trends, Safety, Features, and Statements will not be significantly other than zero.
4. The relationship between the four present car-age groups and their rankings of the items on Present Car, Next Car, Trends, Safety, Features, and Statements will not be significantly other than zero.
5. The relationship between whether or not there was a change of make from the last car to the present one, and owner rankings of the items on Present Car, Next Car, Trends, Safety, Features, and Statements will not be significantly other than zero.

6a. The relationship between responses and height, with weight held constant will not be significantly other than zero for the following items: 4, 27, 28, 38, 43, 52, 80, and for each of the five features for Sets A and B of the Features Section of the questionnaire. See Appendix D for an interpretation of these, and the other symbols.

b. The relationship between responses and weight, with height held constant will not be significantly other than zero for the above listed items.

7a. The relationship between responses and company, with model held constant will not be significantly other than zero for the following items: 4, 27, 38, 51, 52, 80, 84, and for each of the five features for Sets A and B of the Features Section of the questionnaire.

b. The relationship between responses and model, with company held constant will not be significantly other than zero for the above listed items.

8a. The relationship between responses and make of car, with model held constant will not be significantly other than zero for the following items: 1, 15, 19, 34, 57, 70, and for each of the five features for Sets A and B of the Features Section of the questionnaire.

b. The relationship between responses and model, with make of car held constant will not be significantly other than zero for the above listed items.

9a. The relationship between responses and distance driven, with age of respondents held constant will not be significantly other than zero for the following items: 1, 4, 10, 19, 23, 27, 34, 38, 52, 57, 80, and for each of the five features for Sets A and B of the Features Section of the questionnaire.

b. The relationship between responses and age of respondents, with distance driven held constant will not be significantly other than zero for the above listed items.

10. The relationship between the rankings of car owners who plan to buy versus those who do not plan to buy, matched on the age of the car now owned will not be significantly other than zero for the following items: 1, 4, 19, 27, 34, 38, 46, 52, 57, 60, 80, and for each of the five features for Sets A and B of the Features Section of the questionnaire.

METHOD AND PROCEDURE

METHOD AND PROCEDURE

The Questionnaire

The questionnaire used in this study was designed by the investigators to give a maximum amount of information about car owners' opinions on various features and trends in the development of cars, with a minimum of effort on the part of the respondent. The features inquired about were drawn from a list obtained by surveying advertisements, articles, and other sources of information on recent and proposed trends in automotive construction and design. From this list twenty-four features were drawn which were considered most relevant to cars manufactured between 1946 and 1956. These features were listed on the Present Car Section, and the respondent asked to check how satisfied he was with this feature as it appeared on his present car, and how important this feature was to him. It was felt that the opinion of a car owner about a feature would be a function of the importance of that feature to him. That is, satisfaction or dissatisfaction with a feature thought to be important would indicate a stronger opinion than with a feature thought to be unimportant.

On the Next Car Section, twelve of the features in the Present Car Section were listed in terms of changes in that feature, along with twelve features or trends mentioned in

the sources as current or proposed changes in cars. The respondent was asked to check whether he wanted each feature on his next car, and how important it was that he have each feature on his next car. The attempt was made to use features on this and the next two sections which would represent changes from the features found on the respondent's present car.

On the Trends Section, the same twelve features were again listed in terms of possible changes in that feature, along with twelve new features mentioned in the sources as currently popular trends in automotive construction and design. The respondent was asked to check whether he liked or disliked each trend, and how important the trend was to him.

On the Safety Section, the twelve present-car features were again listed in terms of changes from the present, along with twelve additional features or trends from the sources mentioned as contributing to the safety aspect of driving. The respondent was asked to check whether he felt each feature increased or decreased safety, and how important he felt each feature was in terms of safety.

The features were then divided into two forms A and B, each form containing in each section eight of the twelve features carried through all of these sections and eight of the twelve features unique to each section. This allowed an overlap of four of the features in each of the groups on each

section on both forms, so that a comparison of the respondents to each form could be made. Thus each form contained in each of these sections four features common to both forms and carried through all four sections; four features common to both forms, but unique to each section; four features unique to each form, but carried through all four sections; and four features unique to each form and each section. This made it possible to trace the consistency of responses to the features appearing on all four sections, and the consistency with which the respondents on the two different forms responded to the common items.

To provide additional checks on the consistency of response, both by groups and by individuals, two additional sections were prepared. The Features, or paired-comparison section was composed of two sets of five features each taken from the Present Car Section. Each feature was paired with every other feature in its set, and the respondent was asked to check the member of each pair which he liked the best (Form A) or which he thought was most important (Form B). The same pairs appeared on both forms, so that the order of the features in terms of liking and in terms of importance could be compared between the groups responding to the two forms.

The Statements Section was composed of features drawn from the first four sections, and put into statements with

which the respondents were asked to indicate how strongly they agreed or disagreed. Twelve of these statements were common to both forms, the remainder unique to each form.

The Questions Section was included to provide additional information on the features which were most important to the respondents, and as a source of additional features for revising the questionnaire. This section was the same on both forms.

The first page of the questionnaire was composed of questions concerning those characteristics of the respondent and his present car which were desired for the analysis. Although much more information would have been desirable, it was felt that a minimum of personal questions should be asked, to avoid unduly antagonizing any of the respondents. These questions were the same on both forms. The questionnaire used in this study was Form B.

The Sample

The population chosen for this investigation consisted of the registered car owners of Ingham County, Michigan. The 1956 Motor Vehicle Registrations list was obtained and a random sample of 800 private passenger car owners was drawn from this list, using a table of random numbers. Two lists of 400 owners each were compiled from this master list. One

form of the questionnaire (either Form A or Form B) was sent to each one of the 400 owners on each list. While it was not considered that the population sampled was necessarily representative of car owners in general, it was considered to be reasonably heterogeneous in respect to the characteristics studied. Also, as it was not presumed that the returns would be of sufficient quantity to allow the claim of random sampling in terms of the respondent group, it did not matter too much what differences existed between this population and the total population of car owners. It was felt that getting sufficient heterogeneity for a meaningful analysis would provide enough information to indicate whether or not a more adequate technique of sampling would be worthwhile.

Scoring Methods

The questionnaire consisted of six sections which were as follows: (1) Present Car, (2) Next Car, (3) Trends, (4) Safety, (5) Features, and (6) Statements. Rankings for the first four sections of the questionnaire were based upon a scoring system which consisted of the following scheme, using the items on Present Car as an example.

For each of the possible combinations of responses for the satisfaction and importance of any single item, a composite score taking both of these factors into consideration could be achieved. Numbers nine through one were used to

indicate this composite satisfaction and importance score. A score of nine symbolized the responses of Satisfied and Important for any one particular item under Present Car, whereas a score of one symbolized the responses of Dissatisfied and Important. The entire scale was as follows:

Satisfied and Important 9	Satisfied and Questionable 8
Satisfied and Unimportant 7	Questionable and Important 6
Questionable and Questionable 5	Questionable and Unimportant 4
Dissatisfied and Unimportant 3	Dissatisfied and Questionable 2
Dissatisfied and Important 1	

For each of the sixteen items under Present Car, the individual item scores for the total sample were tabulated and a mean score derived from this total. Each mean score was then ranked with respect to all of the items in the section. The highest or greatest mean ranked as one (indicating in this example the greatest satisfaction) and so on until all sixteen items were ranked.

The Features Section was scored by obtaining the number of first choices for each item in each of the two sets (A and B). The features were then ranked from one to five for each set. A rank of one indicated that the feature was selected over every other feature with which it was paired a greater

number of times than was any other feature in that set.

The section on Statements was scored by the mean score method, assigning to responses for each statement values from one to five; one for Strongly Disagree or most unfavorable response, to five for Strongly Agree or most favorable reply. Each statement was ranked with reference to all other statements in terms of the mean score for each statement.

Procedure for Testing Hypotheses

The relationships between rankings of the features on each of the six sections of the questionnaire and the respondent's age, height, distance driven, and the age of his car (Hypotheses 1, 2, 3, and 4) were tested by finding the coefficients of concordance (corrected for continuity). The mean value of the possible rank correlation coefficients and the reliability of the mean ranks were also computed (6).

The relationship between owners who did or did not change makes from the last car to the present one and their rankings of the six sections of the questionnaire (Hypothesis 5) was tested by finding the rank order correlation coefficient (corrected for ties) (6).

Hypotheses 6a and b, the relationships between owner responses and height, with weight held constant as well as those between owner responses and weight, height held constant,

for items 4, 27, 28, 38, 43, 52, 80, and for each of the five features for Sets A and B of the Features Section was tested by finding the coefficients of concordance (corrected for continuity) (6).

Hypotheses 7a and b, the relationships between owner responses and company, with model held constant as well as those between owner responses and model, company held constant, for items 4, 27, 38, 51, 52, 80, 84, and for each of the five features for Sets A and B of the Features Section was tested by finding the coefficients of concordance (corrected for continuity).

Hypotheses 8a and b, the relationships between owner responses and make of car, with model held constant as well as those between owner responses and model, make of car held constant, for items 1, 15, 19, 34, 57, 70, and for each of the five features for Sets A and B of the Features Section was tested by finding the coefficients of concordance (corrected for continuity).

Hypotheses 9a and b, the relationships between owner responses and distance driven, with age of respondents held constant as well as those between owner responses and age of respondents, distance driven held constant, for items 1, 4, 10, 19, 23, 27, 34, 38, 52, 57, 80, and for each of the five features for Sets A and B of the Features Section was tested

by finding the coefficients of concordance (corrected for continuity).

The relationship between the rankings of car owners who plan to buy versus those who do not plan to buy, matched on the age of car now owned, for items 1, 4, 19, 27, 34, 38, 46, 52, 57, 60, 80, and for each of the five features for Sets A and B of the Features Section (Hypothesis 10) was tested by finding the rank order correlation coefficient (corrected for ties).

Composition of the Sample

For this form of the questionnaire (B) 115 questionnaires were returned. Of these 115, thirteen of them were incomplete in some respect and, as a result, could not be included in the final sample. Essentially then, 102 of the returned questionnaires were satisfactorily completed in every respect and these were included in the study. For a complete description of the sample in terms of the five general information questions, review Tables I-VII in Appendix B.



RESULTS

RESULTS

The results given in this section follow from analyses of the data that are summarized in Tables XV to CXXXVI in Appendices C and D.

1. The hypothesis that the relationship between the three respondent age groups and their rankings of the items on Present Car, Next Car, Trends, Safety, Features, and Statements would not be significantly other than zero was untenable. The way in which owners ranked the items on Next Car, Trends, Safety, Features, and Statements varied with the age of the owner; a relationship significantly other than zero at the one per cent level of confidence. The way in which owners ranked the items on their present cars varied with the age of the owner; a relationship significantly other than zero at the five per cent level of confidence.

2. The hypothesis that the relationship between the three height groups and their rankings of the items in each of the six sections of the questionnaire would not be significantly other than zero was untenable. The way in which owners ranked the items on Next Car, Trends, Safety, Features, and Statements varied with the height of the owner; a relationship significantly other than zero at the one per cent

level of confidence. The way in which owners ranked the items on their present cars varied with the height of the owner; a relationship significantly other than zero at the two per cent level of confidence.

3. The hypothesis that the relationship between the three distance-driven groups and their rankings of the items in each of the six sections of the questionnaire would not be significantly other than zero was untenable. The way in which owners ranked the items on Next Car, Trends, Features, and Statements varied with the distance driven by the owner; a relationship significantly other than zero at the one per cent level of confidence. The way in which owners ranked the items on their present cars and Safety varied with the distance driven by the owner; a relationship significantly other than zero at the five per cent level of confidence.

4. The hypothesis that the relationship between the four present car-age groups and their rankings of the items in each of the six sections of the questionnaire would not be significantly other than zero was untenable. The way in which owners ranked the items on Next Car, Trends, Safety, Features, and Statements varied with the present car-age of the owner; a relationship significantly other than zero at the one per cent level of confidence. The way in which owners ranked the items on their present car varied with the present car-age of

the owner; a relationship significantly other than zero at the two per cent level of confidence.

5. The hypothesis that the relationship between the changed-unchanged make groups and their rankings of the items in each of the six sections of the questionnaire would not be significantly other than zero was untenable. All rank order coefficients of correlation were significant at the one per cent level of confidence.

6a. The hypothesis that the relationship between responses and height, with weight held constant would not be significantly other than zero for items 4, 27, 28, 38, 43, 52, 80, and for each of the five features for Sets A and B of the Features Section was untenable for Features E (Luggage Space), and F (Acceleration). In every other instance the hypothesis was tenable. The way in which owners ranked Features E, and F varied with the height of the owners when weight was held constant; a relationship for E significantly other than zero at the ten per cent level of confidence; for F, a relationship significantly other than zero at the five per cent level of confidence.

The responses to Feature E (Luggage Space), with reference to the other four features in Set A of the Features Section, were given the rankings of 3 for the short group; 3.5 for the medium group; and 4 by the tall group. In terms of

importance to these three height groups, luggage space was most important to the short group and least important to the tall group.

The responses to Feature F (Acceleration), with reference to the other four features in Set B of the Features Section, were given the rankings of 5 by the short group; 4.5 by the medium group; and 4 by the tall group. In terms of importance to these three height groups, acceleration was most important to the tall group and least important to the short group.

b. For these same items with height held constant and weight varying, the hypothesis was untenable for Features F (Acceleration), and G (Low Purchase Price). Both of these had relationships with weight significantly other than zero at the ten per cent level of confidence. For all others, the hypothesis was tenable.

The responses to Feature F (Acceleration), with reference to the other four features in Set B of the Features Section, were given the rankings of 4 by the light group; 4.5 by the medium group; and 5 by the heavy group. In terms of importance to these three weight groups, acceleration was most important to the light group and least important to the heavy group.

Feature G (Low Purchase Price) was, in terms of importance to the three weight groups, most important to the heavy group and of least importance to the light group.

7a. The hypothesis that the relationship between responses and company, with model held constant would not be significantly other than zero for items 4, 27, 38, 51, 52, 80, 84, and for each of the five features for Sets A and B of the Features Section was untenable for items 4 (Horsepower, Present Car), and 80 (Ease of Ride, Statements); Features B (Head Room), and I (Power Steering). In every other instance the hypothesis was tenable. The way in which owners ranked items 4, and 80; Features B, and I varied with the company when model was held constant; a relationship for item 4 significantly other than zero at the ten per cent level of confidence; a relationship for item 80 significantly other than zero at the five per cent level of confidence. For Features B, and I, both had relationships with company significantly other than zero at the ten per cent level of confidence.

The owners of Chrysler automobiles were most satisfied and the Ford owners the least satisfied with item 4 (Ease of Ride, Present Car). For item 80 (Ease of Ride, Statements) agreement with the statement was highest for the owners of Chrysler automobiles, next for General Motors owners, and

least for Ford owners. The responses to Feature B (Head Room), with reference to the other four features in Set A of the Features Section, were given the ranking of 1.33 by the General Motors owners; 1.16 by the Chrysler owners; and 1 by the Ford owners. In terms of importance to these three groups, head room was most important to the Ford owners and least important to the General Motors owners. In Set B, Feature I (Power Steering) was given the ranking of 3.66 by the General Motors owners; 3.83 by the Chrysler owners; and 4 by the Ford owners. In terms of importance to these three groups, power steering was most important to the General Motors owners and least important to the Ford owners.

b. For these same items, with company held constant and model varying the hypothesis was untenable for item 52 (Smoother Ride, Safety), and Feature I (Power Steering). Both of these had relationships with model significantly other than zero at the ten and five per cent levels of confidence respectively. For all others, the hypothesis was tenable.

The owners of other than two door or four door sedans felt that item 52 (Smoother Ride, Safety) contributed to safety to a greater degree than did owners of the two and four door sedans. Two door sedan owners felt that item 52 contributed the least to safety, in terms of the three groups responses.

The responses to Feature I (Power Steering), with reference to the other four features in Set B of the Features Section, were given the rankings of 3.33 by the four door owners; 3.83 by the "others" owners; and 4.66 by the two door owners. In terms of importance to these three model groups, power steering was most important to the four door group and least important to the two door group.

8a. The hypothesis that the relationship between responses and make of car, with model held constant would not be significantly other than zero for items 1, 15, 19, 34, 57, 70, and for each of the five features for Sets A and B of the Features Section was untenable for Feature G (Low Purchase Price), and item 1 (Horsepower, Present Car). In every other instance the hypothesis was tenable. The way in which owners ranked Feature G, and item 1 varied with make of car when model was held constant; a relationship for both Feature G and item 1 significantly other than zero at the five per cent level of confidence.

The responses to Feature G (Low Purchase Price), with reference to the other four features in Set B of the Features Section, were given the rankings of 2.25 by Oldsmobile owners; 1.75 by Buick owners; 1.50 by Chevrolet owners; 1.38 by Pontiac owners; and 1.25 by Ford owners. In terms of importance to these owners, low purchase price was most important to Ford

owners, then to Pontiac owners, Chevrolet owners, Buick owners, and least important to Oldsmobile owners.

For item 1 (Horsepower, Present Car), Chevrolet owner responses indicated the greatest satisfaction, with Buick owners next, followed by Oldsmobile, Pontiac, and Ford owners.

b. For these same items with make of car held constant and model varying, the hypothesis was tenable in every instance.

9a. The hypothesis that the relationship between responses and distance driven, with age of respondents held constant would not be significantly other than zero for items 1, 4, 10, 19, 23, 27, 34, 38, 52, 57, 80, and for each of the five features for Sets A and B of the Features Section was untenable for items 4, 19, 27, and 38. In every other instance, the hypothesis was tenable. The way in which owners ranked items 4 (Ease of Ride, Present Car), and 27 (Easier Ride, Next Car) varied with distance driven when age of respondents was held constant; a relationship for both items 4 and 27 significantly other than zero at the ten per cent level of confidence; both items 19 (More Horsepower, Next Car) and 38 (Smoother Ride, Trends) had relationships with distance driven significantly other than zero at the five per cent level of confidence.

Satisfaction with item 4 (Ease of Ride, Present Car) was the greatest for the owners in the 15,000 mile and up group, and was least for the owners in the 0-9,999 mile group. Item 27 (Easier Ride, Next Car) was the converse of the above distance-driven groups, with the low distance-driven group expressing the greatest desire for an easier ride in their next cars. The trend in the direction of smoother rides (item 38) was best liked by the low distance-driven group and least liked by the high distance-driven group. The desire for more horsepower in terms of the next car purchased (item 19) varied for the distance-driven groups. The low distance group was more receptive to this trend than were the other two groups. The high distance-driven group was least receptive to this trend.

b. For these same items with distance driven held constant and age of respondents varying, the hypothesis was untenable for items 4, 10, 19, 34, 52, 80, and Features H and J. Items 4 (Ease of Ride, Present Car), 10 (Luggage Space, Present Car), 34 (Higher Horsepower, Trends), 52 (Smoother Ride, Safety), 80 (Ease of Ride, Statements), and Features H (Power Brakes), and J (Trouble Free Operation) all had relationships with age of respondents significantly other than zero at the ten per cent level of confidence. Item 19 (More Horsepower, Next Car) had a relationship with age of respondents significantly other than zero at the five per cent

level of confidence. For all others, the hypothesis was tenable.

Satisfaction with ease of ride with reference to items 4, and 80 indicated that the oldest age group was the most satisfied, while the young age group was the least satisfied. This relationship was also true for item 52 (Smoother Ride, Safety). The old group indicated the most satisfaction with luggage space (item 10) in their present car, while the medium group expressed the least. For item 19 (More Horsepower, Next Car), the young group expressed the greatest desire for this; the old group expressed the least. The trend toward higher horsepower (item 34) was viewed in a favorable light by the young group, while the medium age group expressed themselves as being against this trend.

Feature H (Power Brakes), in terms of importance to the three age groups was most important to the young group and least important to the medium age group. Feature I (Trouble Free Operation), was most important to the young group and least important to the old group.

10. The hypothesis that the relationship between the rankings of car owners who plan to buy versus those who do not plan to buy, matched on the age of the car now owned would not be significantly other than zero for items 1, 4, 19, 27, 34, 38, 46, 52, 57, 60, 80, and each of the five features for

Sets A and B of the Features Section was untenable for item 46. Item 46 (Sports-car Handling, Trends), was negatively significant at the eight per cent level of confidence. The hypothesis was tenable in every other instance.

Owners who indicated an intention to buy viewed the trend toward sports-car handling in a positive manner, while those who did not plan to buy were negative in their views.

CONCLUSIONS AND DISCUSSION

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The determination of owner preferences in terms of their similarities and differences was the major purpose of this study and it is believed that the evidence as presented, has indicated a considerable number of these. Such owner characteristics as age, height, weight, and other such variables as distance driven, the intent to purchase a new car, and the make, year, and model of the presently owned car have been shown to have a significant relationship with the rankings of the various features and items considered.

A number of the findings are not new, but they do tend to substantiate some of the "common-sense" beliefs about automobile owners and automobiles in general. However, some of the findings are of considerable interest and could lead to much speculation in terms of why the relationships were as indicated. One such finding was that acceleration was more important to the light-weight owner group, than to either of the two other weight groups. Several theories could be logically espoused as to why this relationship existed, but without additional personal data information to work with, any such theories would of necessity have to be speculative. Another relationship of this type was the finding that owners of two or four door sedans felt that a smoother ride contributed to



safety to a lesser degree than did the owners of other model cars. Along with these "interesting" relationships, there were many relationships which could have considerable meaning for the manufacturers, and possibly the sales personnel at the local dealership level. It would be presumptuous to assume, at this time, that the findings of this study are irreproachable, but nonetheless some cues could be advanced which might, upon further study, prove of value.

With respect to owner characteristics, for example, low purchase price was most important to the heavy owner group; the medium-age owner group expressed the least satisfaction with luggage space, while the old owner group seemed satisfied with this feature; the medium-age owner group was not in favor of higher horsepower, whereas, the young owner group was. Another finding was that trouble-free operation was important to the young owner group and of little importance to the old owner group.

Information of this type could be utilized by the sales personnel in evaluating the potential customer in terms of what features to stress and/or play down.

For the manufacturer, there are a number of implications contained within this study. Ford owners, for example, were least satisfied with the ease of ride of their present car. They were also more concerned about head room than were the

owners of Chrysler, and General Motors Products. For the Ford Motor Company, these findings could mean that ease of ride and head room should be investigated and something concrete done about them. Rather than devote time and money to the development of larger and lower cars, their time might be better spent in the development of an easier ride and additional head room.

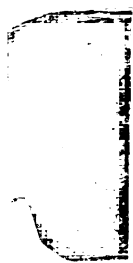
Low purchase price was found to be more important to Ford owners than to any other group of owners studied. Here again, it might be that Ford has overlooked certain attitudes of the consumer. In other words, the marketing techniques of the Ford Motor Company may be entirely distorted with respect to the potential Ford buyer. Instead of developing a medium-priced automobile, the Edsel, Ford might find they would be better able to advance, sales wise, if the addition to their line had been a low priced automobile.

Pontiac owners were also concerned with low purchase price, more so than were the Chevrolet owners. This could be indicative of a trend which could be of some importance to General Motors in terms of advertising their respective products in a different way. That is, if this trend is true then stressing the economies of the Chevrolet, and the "big-car" value of the Pontiac would be incorrect; the converse correct.

Chevrolet owners expressed the greatest satisfaction with the horsepower of their present car, followed by Buick owners, Oldsmobile owners, and Pontiac owners, with Ford owners expressing the least satisfaction. Again this information could provide some valuable cues for the manufacturers in their sales campaigns and possibly in the future development of their respective automobiles. These then, are some of the major implications for the manufacturer.

Evidence has been presented that automobile owners do have certain preferences and that a relationship does exist between owner characteristics and attitude with reference to these preferences. A more comprehensive study of this type could be conducted by the automobile manufacturers to evaluate what the various owners desire in their future cars, as well as what they do not want. Further, it might be that the determination of who comprises the active purchasing group could prove valuable in terms of the features to which they are most receptive. These features could be more fully exploited in advertising techniques and in actual production to the benefit of both the manufacturer and the consumer.

COMMENTS



COMMENTS

Essentially, this present investigation was a form of pilot study in that no pre-testing of the questionnaire had been accomplished prior to its distribution. Despite this fact, the questionnaire did accomplish the purposes for which it was designed and at the same time has provided much information which could prove of value if further studies of this type were to be conducted.

There were, however, a number of inadequacies found in the questionnaire at the completion of this study. In several sections of the questionnaire, the selection of features were not as discriminating as thought to be. The paired-comparisons, or Features Section, contained features which were too dissimilar, i.e., there were two features of major importance to all owners in each of the two sets. In Set A these were head room and leg room, while in Set B they were trouble free operation and low purchase price. The result of this was that invariably, the two features were ranked numbers one and two by almost all of the respondents. Features in this section, if revised, should be as nearly equal in importance as possible. This would eliminate the top-heavy ranking and provide a greater spread in the responses.

Negatively worded statements should be replaced with neutral statements in the Statement Section and, if possible, the number of statements included should be reduced. Again, the comment of greater equality could apply in this section.

For the other sections, those items which failed to elicit a satisfactory range of responses could be eliminated. A reduction in the number of features might prove beneficial in terms of reducing the length of the total questionnaire.

Perhaps the inclusion in the first four sections of the response of importance could have been eliminated. A significant relationship was found between the responses given by the respondents to the importance scale and the satisfied, like, want, and contributes to, scales. A relationship significant at the one per cent level of confidence was found between the responses to the importance scale and the other possible response scales for the sections on Next Car, Trends, and Safety. The section on Present Car had a negatively significant relationship at the five per cent level of confidence. These relationships with minor variation, were also found by Hemingway (9).

The general information page of the questionnaire could have been more comprehensive in coverage. Several important items were omitted which might have contributed to the analysis and the conclusions drawn, e.g., occupation, income, purchase

of used cars exclusively, and perhaps some information on education. A relationship is known to exist between education, occupation, and income level, and as such, the inclusion of the three items might be thought of as superfluous. However, the relationships of these variables with reference to automobile owner preferences may not function in a similar manner and so, are worthy of consideration.

Thus far nothing has been mentioned about the last page of the questionnaire, the Questions page. A word or two should be mentioned to at least acknowledge its presence. This page was included to provide the respondents with the opportunity of making comments, adding to or explaining the reasons why they had responded as they had, and also to provide the investigators with a list of items which may have use in a future study. An inspection of this list indicated that there were a number of aspects or features of the automobile which had been overlooked in this investigation. In the main, these features were restricted to owner complaints. Four of the most frequently mentioned were: (1) the poor quality of the paint, (2) the poor quality of the chrome, (3) body rust, and (4) the lack of durability of the exhaust system. More miles per gallon was included by almost all of the respondents, as was better craftsmanship. The other responses were varied, some being of a rather technical nature. This may suggest that items and/or questions of a slightly more technical

nature may not be inconsistent with the purposes of a questionnaire of this type.

Follow-up methods might have been utilized, but at the time were not considered to be worthwhile. A larger sample could have been used, but the sample was probably large enough for this type of investigation.

There are several possible alternatives that could be used in terms of the sample in future studies. Obviously larger samples could be utilized, but there is the possibility that as much data could be obtained by using a selected sample. This would insure an adequate distribution of the sample in terms of the various owner and automobile characteristics under investigation. As the total n in such a survey would be fairly small, personal interviews could be conducted in this instance if desired.

Mention should be made about the consistency of the findings between the two studies. While the possibilities in this area were not explored exhaustively, some comparisons were made wherever possible. A check on the number of significant and similar findings for the common items found on both forms A and B of the questionnaire was made. This revealed five significant and similar items for both forms of the questionnaire. These items were as follows: low purchase price (weight varying - height constant); head room (company

varying - make constant); easier ride (distance driven varying - age of respondent constant); power brakes and smoother ride (age of respondent varying - distance driven constant). In terms of the large number of common items tested this finding in itself was not significant, but it does suggest that if the sample had been such that a greater number of classifications had been possible, a higher degree of consistency between the two forms might have been found. Further, the fact that no more than five significant findings were found for the common items may have been related to the analysis used, rather than to a lack of relationships. Inspection of the raw data (after scoring and classifying) revealed that there were a proportionate number of similar responses for each of the common items. The samples of both forms were also very similar as to the distribution of age, makes of cars, sex, height, weight, and distances driven.

The findings of this investigation have indicated a number of areas which have as yet to be fully explored. One of primary interest to this writer has already been mentioned; personal characteristics in terms of sales. To further investigate this area and to obtain additional information which may be related, a form of personality inventory could be included with the questionnaire. The combination of results could then be explored for significant relationships pertinent to the sales area.

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BIBLIOGRAPHY

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2

APPENDIX A

MICHIGAN STATE UNIVERSITY

OF AGRICULTURE AND APPLIED SCIENCE • EAST LANSING

DEPARTMENT OF PSYCHOLOGY

April 1, 1957.

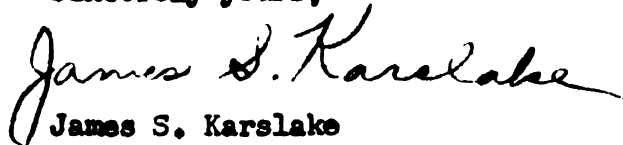
Dear Sir:

The Industrial Section of the Psychology Department at Michigan State University is conducting a survey of the opinions of automobile owners. We think you will enjoy this opportunity to indicate how you feel about some of the features of your automobile.

Please fill out the enclosed questionnaire in accordance with the directions at the top of each page. When completed, please mail it back to us in the enclosed return envelope.

Thank you for your cooperation.

Sincerely yours,

A handwritten signature in cursive script that reads "James S. Karslake". The signature is written in dark ink and is positioned above the printed name and title.

James S. Karslake
Associate Professor

JSK:RS
Enc.

CONSUMER ATTITUDE SURVEY
Department of Psychology
Michigan State University

General Information

Please answer the following questions to the best of your ability.
Thank you,

1. Age____ Sex _____ Married?_____ Height_____ Weight_____
2. Approximately, how far do you drive your car in a year?_____
3. Present car: Make_____, Model_____, Year_____
4. Last car: Make_____, Model_____, Year_____
- (e.g., 2-door sedan, etc.)
- 5a. Do you plan to purchase a new car within the next 2 or 3 years?
Yes____ No____. (If yes, answer 5b)
- 5b. Probable Make _____, Model_____, Year_____

(If you own more than one automobile, consider the one with which you are most familiar when answering this questionnaire.)

PRESENT CAR

Listed below are 16 features of your present car. These are to be rated by you according to the indicated scales. Rate all of the features on one scale first, then rate them on the other scale.

On this scale indicate the degree to which you are satisfied with each one of the features listed below. Check the column which best indicates how satisfied you are with each of these features of your present car.

On this scale indicate the degree of importance to you of each one of the features listed below. Check the column which best indicates how important you consider each of these features of your present car.

Satisfied	?	Dissatisfied		Important	?	Unimportant
___	___	___	horsepower	___	___	<u>1*</u>
___	___	___	windshield design	___	___	<u>2*</u>
___	___	___	shifting	___	___	<u>3*</u>
___	___	___	ease of ride	___	___	<u>4*</u>
___	___	___	brakes	___	___	<u>5</u>
___	___	___	steering	___	___	<u>6</u>
___	___	___	headlights	___	___	<u>7</u>
___	___	___	leg room	___	___	<u>8</u>
___	___	___	seat comfort	___	___	<u>9*</u>
___	___	___	luggage space	___	___	<u>10*</u>
___	___	___	ease of parking	___	___	<u>11*</u>
___	___	___	location of spare tire	___	___	<u>12*</u>
___	___	___	upholstery	___	___	<u>13</u>
___	___	___	ease of getting in or out	___	___	<u>14</u>
___	___	___	miles per gallon	___	___	<u>15</u>
___	___	___	trouble free operation	___	___	<u>16</u>

*Items, features, or statements common to both Forms A and B of the questionnaire.



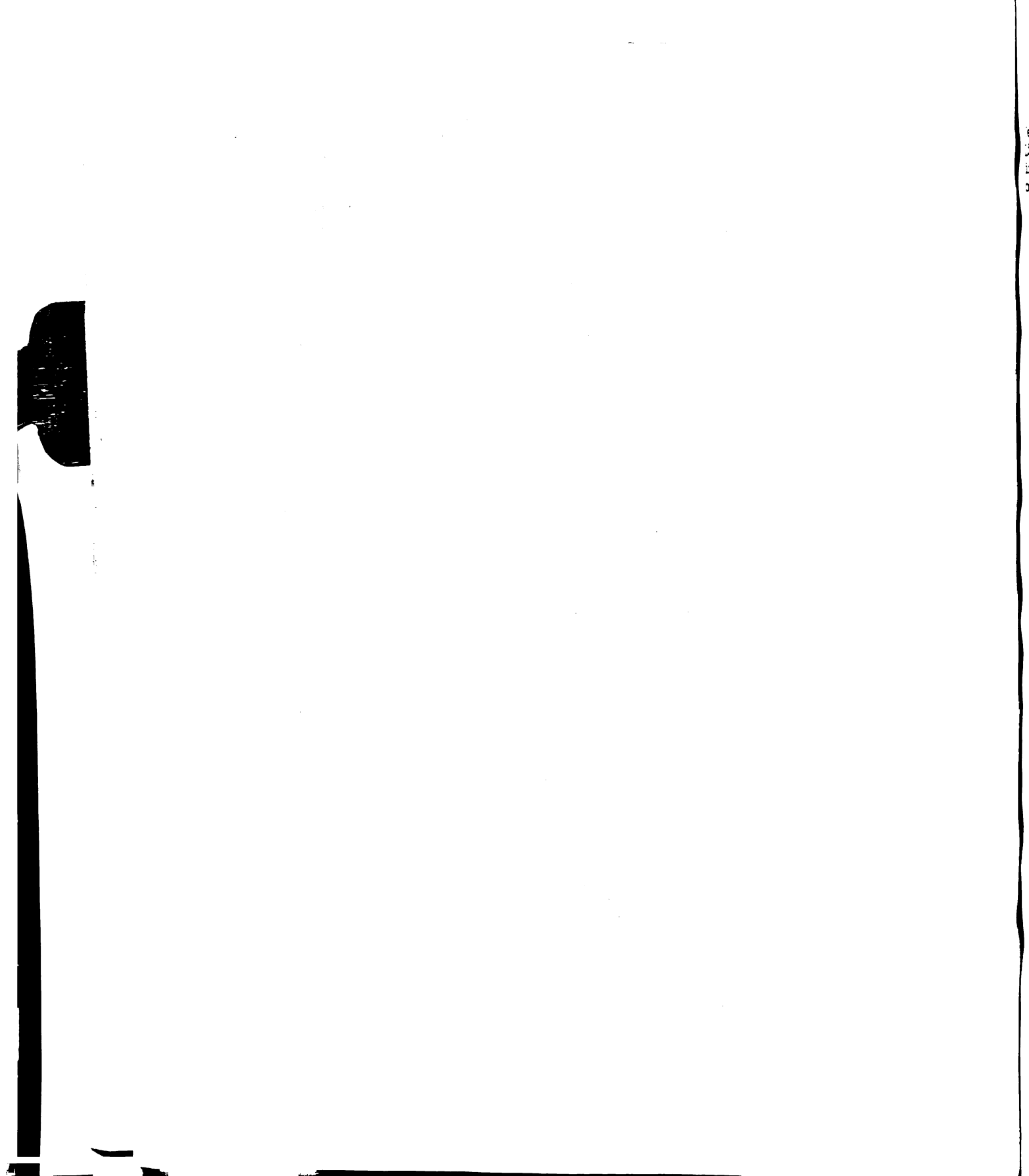
NEXT CAR

Listed below are 16 possible features of your next car. These are to be rated by you, according to the indicated scales. Rate all of the features on one scale first, then rate them on the other scale.

On this scale indicate whether or not you want each feature on your next car.

On this scale indicate how important it is to you that you have each feature on your next car.

Want	?	Don't Want		Important	?	Unimportant
___	___	___	fuel injection	___	___	<u>17</u>
___	___	___	fiberglass body	___	___	<u>18</u>
___	___	___	more horsepower	___	___	<u>19*</u>
___	___	___	larger gas tank	___	___	<u>20</u>
___	___	___	push-button shifting	___	___	<u>21*</u>
___	___	___	easier to read dials	___	___	<u>22</u>
___	___	___	power brakes	___	___	<u>23</u>
___	___	___	more miles per gallon	___	___	<u>24*</u>
___	___	___	manual gear shift	___	___	<u>25*</u>
___	___	___	wrap-around windshield	___	___	<u>26*</u>
___	___	___	easier ride	___	___	<u>27*</u>
___	___	___	more leg room	___	___	<u>28</u>
___	___	___	automatic windows	___	___	<u>29*</u>
___	___	___	power steering	___	___	<u>30</u>
___	___	___	four headlights	___	___	<u>31</u>
___	___	___	power seats	___	___	<u>32*</u>



TRENDS

We are interested in your opinions about current trends in automotive design. Listed below are 16 trends which are to be rated by you, according to the indicated scales. Rate all of the features on one scale first, then rate them on the other scale.

On this scale indicate
how you feel about each
trend.

On this scale indicate
the importance of each
trend to you.

Like	?	Dislike		Important	?	Unimportant
_____	_____	_____	more safety features	_____	_____	<u>33</u>
_____	_____	_____	higher horsepower	_____	_____	<u>34*</u>
_____	_____	_____	longer cars	_____	_____	<u>35*</u>
_____	_____	_____	more headlights	_____	_____	<u>36</u>
_____	_____	_____	more accessories	_____	_____	<u>37*</u>
_____	_____	_____	smoother ride	_____	_____	<u>38*</u>
_____	_____	_____	push-button shifting	_____	_____	<u>39*</u>
_____	_____	_____	larger rear fenders	_____	_____	<u>40*</u>
_____	_____	_____	4-door hardtops	_____	_____	<u>41</u>
_____	_____	_____	power steering	_____	_____	<u>42</u>
_____	_____	_____	lower cars	_____	_____	<u>43*</u>
_____	_____	_____	wrap-around windshields	_____	_____	<u>44*</u>
_____	_____	_____	power brakes	_____	_____	<u>45</u>
_____	_____	_____	sports-car handling	_____	_____	<u>46</u>
_____	_____	_____	rear engines	_____	_____	<u>47</u>
_____	_____	_____	less leg room	_____	_____	<u>48</u>

SAFETY

Safety in the automobile is important to all of us and the manufacturers claim many advances in this area. However, we are interested in obtaining your opinions as to the contribution and the importance to safety, for each of the features listed below. Rate all of the features on one scale first, then rate them on the other scale.

On this scale indicate
the contribution to
safety of each feature.

On this scale indicate
the importance of each
feature in terms of safety.

Increases Safety	?	Decreases Safety	Important	?	Unimportant
_____	_____	_____	_____	_____	49
_____	_____	_____	_____	_____	50*
_____	_____	_____	_____	_____	51
_____	_____	_____	_____	_____	52*
_____	_____	_____	_____	_____	53
_____	_____	_____	_____	_____	54*
_____	_____	_____	_____	_____	55*
_____	_____	_____	_____	_____	56*
_____	_____	_____	_____	_____	57*
_____	_____	_____	_____	_____	58
_____	_____	_____	_____	_____	59
_____	_____	_____	_____	_____	60*
_____	_____	_____	_____	_____	61*
_____	_____	_____	_____	_____	62
_____	_____	_____	_____	_____	63
_____	_____	_____	_____	_____	64

FEATURES

For each of the following pairs of features check the one which is most im-
portant to you. Do this for every pair.

_____ leg room	or	_____ head room	_____
_____ acceleration	or	_____ low purchase price	_____
_____ exterior design	or	_____ push-button shifting	_____
_____ power brakes	or	_____ power steering	_____
_____ luggage space	or	_____ leg room	_____
_____ trouble-free operation	or	_____ acceleration	_____
_____ head room	or	_____ exterior design	_____
_____ low purchase price	or	_____ power brakes	_____
_____ push-button shifting	or	_____ leg room	_____
_____ power steering	or	_____ acceleration	_____
_____ luggage space	or	_____ exterior design	_____
_____ trouble-free operation	or	_____ power brakes	_____
_____ head room	or	_____ push-button shifting	_____
_____ low purchase price	or	_____ power steering	_____
_____ leg room	or	_____ exterior design	_____
_____ acceleration	or	_____ power brakes	_____
_____ push-button shifting	or	_____ luggage space	_____
_____ power steering	or	_____ trouble-free operation	_____
_____ luggage space	or	_____ head room	_____
_____ trouble-free operation	or	_____ low purchase price	_____

SET A

Leg room A
Head room B
Exterior design .. C
Push-button shift . D
Luggage space E

SET B

Acceleration F
Low purchase price . G
Power brakes H
Power steering I
Trouble-free operation J



1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40

41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80

STATEMENTS

Indicate how strongly you agree or disagree with each of the following statements by encircling the appropriate symbol in front of each statement. The symbols indicate degrees of agreement as listed below:

SA - Strongly Agree
A - Agree
? - Neither Agree nor Disagree
D - Disagree
SD - Strongly Disagree

SA	A	?	D	SD	Adding safety features has not reduced accident injuries.	65*
SA	A	?	D	SD	The advantages of smaller cars outweigh their disadvantages	66*
SA	A	?	D	SD	The interior of my present car is very well designed.	67*
SA	A	?	D	SD	A car with the engine in the rear would be a great improvement.	68*
SA	A	?	D	SD	Automatic turn signals do not make driving any safer.	69*
SA	A	?	D	SD	The newer the car, the more any needed repairs will cost.	70*
SA	A	?	D	SD	I would like a larger gas tank in my next car.	71*
SA	A	?	D	SD	Experienced drivers would welcome sports-car handling.	72*
SA	A	?	D	SD	I will demand better craftsmanship in my next car.	73*
SA	A	?	D	SD	The spare tire in my present car is easy to get at.	74
SA	A	?	D	SD	It's a manual gearshift for me, in my next car.	75
SA	A	?	D	SD	The seat comfort of my present car is just right.	76
SA	A	?	D	SD	Night driving is difficult with the headlights on my present car.	77
SA	A	?	D	SD	I want more miles per gallon in my next car.	78
SA	A	?	D	SD	Lower cars are OK for some people, but not for me.	79
SA	A	?	D	SD	When it comes to ease of ride, I will take my present car.	80
SA	A	?	D	SD	The design of the windshield in my present car is good.	81
SA	A	?	D	SD	I hope fuel injection is available on my next car.	82
SA	A	?	D	SD	My present car has very inefficient brakes.	83
SA	A	?	D	SD	My next car should make my present car look obsolete.	84*
SA	A	?	D	SD	I will insist on a complete demonstration before choosing a new car.	85*
SA	A	?	D	SD	The dashboard controls and dials on my next car should be less complex.	86*

QUESTIONS.

In answering the following questions, do not limit yourself to the features mentioned in the questionnaire. Include anything that you feel is relevant to the question. Be as specific as possible. (Use the back of this page if you need additional space.)

1. Ignoring the cost, what features would you like in your next car?

2. What features of today's cars do you think need the most improvement?

3. What features do you like most in your present car?

4. What features do you like least in your present car?

5. How did you like this questionnaire? Make any comments you wish.

THANK YOU FOR YOUR COOPERATION

*All questions common to both Forms A and B of the questionnaire.

APPENDIX B



TABLE I
AGE AND SEX DISTRIBUTION
OF SAMPLE

	Age in Years												
	15	20	25	30	35	40	45	50	55	60	65	70	
Sex	19	24	29	34	39	44	49	54	59	64	69	74	
Male	1	7	19	11	10	13	11	7	4	6	5	1	
Female		1		1	1			2		1			

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TABLE II
HEIGHT DISTRIBUTION
OF SAMPLE

Height in Inches													
Sex	63	64	65	66	67	68	69	70	71	72	73	74	75
Male			1	9	8	7	20	17	12	15	4	2	1
Female	1	1	1	2		1							

TABLE III

WEIGHT DISTRIBUTION
OF SAMPLE

		Weight in Pounds															
Sex		110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	
		119	129	139	149	159	169	179	189	199	209	219	229	239	249	259	
Male		1	3	8	17	15	19	14	6	4	3	1	2	1	2		
Female		2	1	2				1									

TABLE IV

MILEAGE DISTRIBUTION
OF SAMPLE

		Mileage in Thousands														
Sex		0	5	10	15	20	25	30	35	40	45	50	55	Not Listed		
		4	9	14	19	24	29	34	39	44	49	54	59			
Male		3	15	54	12	4	3	3				1				1
Female			2	3	1											

TABLE V
PRESENT CAR MAKE, YEAR, AND MODEL

Make	Year												Model							
	48	49	50	51	52	53	54	55	56	57	1*	2	3	4	5	6	7	8		
Buick			1			4	2	2	4	1	8		3	3						
Cadillac									2			1		1						
Chevrolet	1		1	1	1	3	6	4	6	2	8		11		1	1		4		
Chrysler						1	1	1			2						1			
De Soto			1					1			2									
Dodge			1					1			1			1						
Ford			1	1	1	3	3	1	3		5		3	1	2	1	1			
Lincoln					1				1		2									
Mercury							1							1						
Nash							1													1
Oldsmobile			2	1	2	5	3	1	4	2	7	1	6	3		2		1		
Plymouth				1			1	3	1		3		2		1					
Pontiac				1	1	2	3	1		1	3		3	1			1	1		
Studebaker			1		1						2									

*Figures 1-8 symbolize the following: four door sedans, four door hard-tops, two door sedans, two door hard-tops, two door coupes, convertibles, station wagons, and models not listed respectively.

TABLE VI
LAST CAR MAKE, YEAR, AND MODEL

Make	46"	Year										Model							
		47	48	49	50	51	52	53	54	55	56	1*	2	3	4	5	6	7	8
Buick	1	1	1		1	3		1		1		6		2	1				
Chevrolet	2			3	2	4	1	4		3	1	5		12		2		1	
Chrysler	1	1					1			1		1		1				2	
De Soto				1								1							
Dodge	1				2			2				2		2		1			
Ford	3	1		1	2		2	3	1	1		2		12			1		
Kaiser						1								1					
Lincoln									1						1				
Mercury					1							1							
Nash		1						2	2			2		2					1
Oldsmobile		2		3	1	2	1	1		4		7		4	2	1			
Packard								1		1		1							1
Plymouth	2				1	1	1	1	1			3		3					1
Pontiac					2	2		2				1		4	1				
Studebaker	1				1		3					2		1					2

"Includes all 1946 and older cars.

*Figures 1-8 symbolize the following: four door sedans, four door hard-tops, two door sedans, two door hard-tops, two door coupes, convertibles, station wagons, and models not listed respectively.

TABLE VII
PROBABLE NEXT CAR, MAKE, AND MODEL

Make	Model							
	1*	2	3	4	5	6	7	8
Buick	4		2					
Cadillac	2			1				
Chevrolet	3		4	2	1	1		7
De Soto	1							
Dodge	1							1
Ford	3		2			1		3
Lincoln	1							
Mercury	1			1				
Nash								2
Oldsmobile	5		2	4		2		2
Plymouth	1		2					
Pontiac			1	1				
Studebaker				1				
Foreign			2					
Corvette							1	

*Figures 1-8 symbolize the following: four door sedans, four door hard-tops, two door sedans, two door hard-tops, convertibles, station wagons, domestic sports-cars, and models not listed.

TABLE VIII

PRESENT, NEXT, TRENDS, AND SAFETY ITEMS
AS RANKED BY THE TOTAL SAMPLE

Present		Next	
Item	Rank	Item	Rank
Horsepower	7	Fuel injection	8
Windshield design	7	Fiberglass body	10
Shifting	7	More horsepower	15
Ease of ride	13	Larger gas tank	11
Brakes	1	Push button shifting	9
Steering	14	Easier to read dials	4
Headlights	7	Power brakes	5
Leg room	2.5	More miles per gallon	1
Seat comfort	11	Manual gear shift	13
Luggage space	7	Wrap around windshield	3
Ease of parking	15	Easier ride	2
Location of spare tire	2.5	More leg room	7
Upholstery	10	Automatic windows	16
Ease of getting in or out	4	Power steering	6
Miles per gallon	16	Four headlights	12
Trouble free operation	12	Power seats	14
Trends		Safety	
Item	Rank	Item	Rank
More safety features	1	Auto. headlight dimmers	6
Higher horsepower	12	Seat belts	4
Longer cars	15	Multiple headlights	13
More headlights	11	Smoother ride	7
More accessories	13	Power brakes	8
Smoother ride	2	Smaller wheels	15
Push button shifting	7	Tinted windshields	9
Larger rear fenders	14	Wrap around windshields	5
Four-door hard tops	9	Higher horsepower	16
Power steering	5	Recessed door handles	10
Lower cars	8	Power steering	11
Wrap around windshields	3	Push button shifting	14
Power brakes	4	Padded dashboards	2
Sports-car handling	6	Door locks	3
Rear engines	10	Outside rear view mirrors	1
Less leg room	16	Adj. steering columns	12

NOTE: The items listed in this table follow the listings as found in the questionnaire.

TABLE IX

RANKS BASED UPON THE NUMBER OF TIMES EACH FEATURE
WAS CHOSEN FIRST OVER ANY OTHER FEATURE
WITH WHICH IT WAS PAIRED

Set A		
Features	Number of First Choices*	Rank
A. Leg room	323	1
B. Head room	280	2
C. Exterior design	181	3
D. Push button shift	74	5
E. Luggage space	163	4
Set B		
F. Acceleration	97	5
G. Low purchase price	257	2
H. Power brakes	150	3
I. Power steering	146	4
J. Trouble free operation	371	1

*All features in each set were paired with every other feature in the set.

TABLE X
DISTRIBUTION OF RESPONSES
FOR STATEMENT SECTION

Statements	Responses*					Rank
	SA	A	?	D	SD	
1. Safety features	13	24	18	34	13	12
2. Smaller cars	11	28	24	29	10	14
3. Interior	23	53	14	9	3	6
4. Rear engine	8	11	46	21	16	19
5. Turn signals	3	6	3	24	66	1.5
6. New car repairs	9	23	16	38	16	17.5
7. Larger gas tank	6	12	33	32	19	20
8. Sports-car handling	8	20	49	18	7	13
9. Craftsmanship	18	42	30	11	1	8.5
10. Spare tire	19	67	9	7	0	5
11. Manual shift	8	9	15	25	45	22
12. Seat comfort	11	53	14	18	6	10
13. Headlights	5	12	8	60	17	7
14. Miles per gallon	55	36	10	0	1	1.5
15. Lower cars	11	39	20	27	5	11
16. Ease of ride	5	37	30	22	8	16
17. Windshield design	9	67	10	12	4	8.5
18. Fuel injection	7	16	44	25	10	15
19. Brakes	5	7	9	42	39	4
20. Obsolete	10	19	22	37	14	21
21. Demonstration	39	44	11	7	1	3
22. Dash controls	6	11	36	46	3	17.5

*The possible responses for each statement were as follows: SA, Strongly Agree; A, Agree; ?, Neither Agree nor Disagree; D, Disagree; SD, Strongly Disagree.

TABLE XI

PRESENT CAR RANKINGS BY MAKE

Items	Make of Car												
	Buick	Cad.	Chev.	Chry.	De Soto	Dodge	Ford	Linc.	Merc.	Nash	Olds.	Ply.	Pont.
1.*	4	12.5	1	5	6.5	12.5	15	7	3	7	11.5	5.5	6
2.	7	6	3	5	6.5	15.5	12.5	7	3	7	1	11.5	15
3.	7	6	3	12.5	6.5	9	11	7	3	7	3.5	13	10.5
4.	1	6	15	5	6.5	12.5	14	7	16	7	3.5	5.5	13
5.	14	6	9.5	10	6.5	4	2	7	10.5	14	6	15	1
6.	7	6	9.5	12.5	6.5	4	5.5	7	10.5	15.5	6	5.5	13
7.	4	6	6.5	12.5	6.5	4	9	7	10.5	7	15	11.5	6
8.	7	15	6.5	5	6.5	4	3	7	10.5	7	8.5	5.5	6
9.	4	15	13	5	6.5	4	12.5	7	10.5	7	2	5.5	10.5
10.	2	6	11.5	5	6.5	12.5	9	7	10.5	7	11.5	15	6
11.	15	6	6.5	15	15	9	5.5	7	10.5	15.5	11.5	5.5	13
12.	12.5	6	11.5	12.5	13.5	9	1	7	3	7	6	5.5	6
13.	7	6	6.5	5	13.5	15.5	9	7	10.5	7	11.5	5.5	6
14.	12.5	15	3	5	6.5	4	5.5	15	10.5	7	8.5	5.5	2
15.	16	12.5	16	16	16	12.5	16	15	10.5	7	16	15	16
16.	6	6	14	5	6.5	4	5.5	15	3	7	14	5.5	6

*Numbers 1-16 represent the items on present car as listed in the questionnaire.

TABLE XII
NEXT CAR RANKINGS BY MAKE

Items	Make of Car												
	Buick	Cad.	Chev.	Chry.	De Soto	Dodge	Ford	Linc.	Merc.	Nash	Olds.	Ply.	Pont.
1.*	10	8	7.5	12.5	10.5	12.5	5	9.5	6	10.5	10.5	8.5	10.5
2.	12.5	13.5	11	4.5	10.5	12.5	11	9.5	6	2.5	8	6.5	13
3.	14	3.5	14	15	14.5	5	11	9.5	14	2.5	16	15.5	13
4.	9	15.5	10	9.5	14.5	8.5	8	14.5	6	10.5	14	10	10.5
5.	8	8	6	9.5	10.5	5	13	14.5	6	2.5	10.5	8.5	7
6.	7	11	4	4.5	4	8.5	6.5	9.5	14	2.5	4	4.5	5
7.	4.5	3.5	7.5	4.5	7	8.5	2	2.5	6	10.5	6	6.5	7
8.	1.5	8	1	1	1.5	2	1	5.5	6	10.5	1	1	3
9.	15	15.5	12	15	10.5	12.5	11	14.5	14	10.5	14	4.5	16
10.	3	3.5	3	4.5	4	2	4	9.5	6	10.5	3	3	2
11.	1.5	11	2	4.5	1.5	2	3	2.5	6	10.5	2	2	4
12.	6	3.5	5	9.5	14.5	5	14	2.5	6	10.5	7	12	7
13.	16	3.5	16	15	14.5	12.5	15.5	5.5	6	10.5	12	15.5	1
14.	4.5	3.5	9	9.5	4	8.5	6.5	9.5	6	10.5	5	12	9
15.	12.5	13.5	13	4.5	7	15.5	9	14.5	14	10.5	9	12	13
16.	11	11	15	12.5	7	15.5	15.5	2.5	14	10.5	14	14	15

*Numbers 1-16 represent the items on next car as listed in the questionnaire.

TABLE XIII
TREND RANKINGS BY MAKE

Items	Make of Car												
	Buick	Cad.	Chev.	Chry.	De Soto	Dodge	Ford	Linc.	Merc.	Nash	Olds.	Ply.	Pont.
1.*	2.5	3	1	1	1	2.5	1	2.5	4.5	2.5	2	2	3
2.	11.5	12.5	14	13.5	12	10	13.5	6	11.5	11	13	13.5	10.5
3..	13	12.5	14	13.5	15.5	13.5	15	6	11.5	11	16	13.5	8.5
4.	11.5	12.5	11	7	8	13.5	11	13	11.5	11	10.5	12	10.5
5.	15	12.5	12	13.5	15.5	13.5	12	6	11.5	11	13	13.5	15
6.	1	6.5	2	3.5	4	2.5	2	2.5	4.5	5	1	1	1.5
7.	8	6.5	4	7	12	6.5	10	13	4.5	11	9	5.5	4.5
8.	14	12.5	16	7	12	13.5	13.5	13	11.5	11	13	11	13
9.	9.5	3	9.5	2	8	2.5	6	13	15.5	11	8	9.5	13
10.	5	3	7	7	4	6.5	4.5	9	4.5	11	4	7.5	6.5
11.	7	12.5	9.5	13.5	8	10	7	9	11.5	2.5	6	9.5	4.5
12.	2.5	3	3	7	4	2.5	4.5	9	4.5	11	3	3.5	1.5
13.	4	3	5.5	3.5	4	6.5	3	2.5	4.5	11	5	5.5	6.5
14.	6	8	5.5	10	4	10	8	2.5	4.5	2.5	7	3.5	8.5
15.	9.5	12.5	8	13.5	12	6.5	9	13	4.5	2.5	10.5	7.5	13
16.	16	12.5	14	13.5	12	16	16	16	15.5	11	15	13.5	16

*Numbers 1-16 represent the items on trends as listed in the questionnaire.

TABLE XIV
SAFETY RANKINGS BY MAKE

Items	Make of Car												
	Buick	Cad.	Chev.	Chry.	De Soto	Dodge	Ford	Linc.	Merc.	Nash	Olds.	Ply.	Pont.
1.*	4.5	4	5.5	6	15.5	4	5	3.5	14	4.5	9	10	5
2.	10.5	4	4	3	4	4	2	9.5	6	4.5	6	10	2
3.	15	15	12	12	11	14	13	13	14	11	14	15	14.5
4.	4.5	10.5	8.5	8.5	11	12.5	11	9.5	6	4.5	5	4	11
5.	4.5	4	10	8.5	4	12.5	6.5	3.5	6	11	10.5	6.5	8.5
6.	13.5	10.5	15	14	11	14	14	15	14	15	13	10	14.5
7.	10.5	10.5	7	3	11	4	9.5	15	6	11	10.5	13	8.5
8.	7	4	5.5	12	4	4	8	9.5	6	11	4	6.5	5
9.	16	15	16	15.5	11	16	16	9.5	6	15	16	16	16
10.	12	10.5	8.5	8.5	4	12.5	6.5	3.5	14	4.5	8	6.5	8.5
11.	9	4	13.5	15.5	11	12.5	12	9.5	6	11	7	13	8.5
12.	13.5	15	11	12	15	14	15	15	6	15	15	13	13
13.	2	4	1	3	4	4	1	9.5	6	4.5	1.5	2	2
14.	4.5	10.5	3	3	4	4	3.5	3.5	6	4.5	3	3	5
15.	1	4	2	3	4	4	3.5	3.5	6	4.5	1.5	1	2
16.	8	10.5	13.5	8.5	11	12.5	9.5	3.5	14	4.5	12	6.5	12

*Numbers 1-16 represent the items on safety as listed in the questionnaire.

APPENDIX C

TABLE XXXII
DEGREE OF AGREEMENT AMONG DISTANCE GROUPS
FOR THE STATEMENTS

Miles	Statements										
	1*	2	3	4	5	6	7	8	9	10	11
0' 9	7	10.5	8.5	12.5	22	14	19.5	15.5	4.5	3	21
10 14	13	12	4	15	22	14	18	8.5	5	3	20
15 +	15.5	9	3	15.5	22	18	13	11	6	5	19
Σ	35.5	31.5	15.5	33	66	46	50.5	35	15.5	11	60

$$W_c = .895 \quad p_{.01} \quad \bar{r}' = .842 \quad r_{\bar{x}\bar{x}} = .941$$

*Numbers 1-22 represent the statements as listed in the questionnaire.

¹Miles in thousands.

NOTE: The figures in the body of the table are rank orders (of items) across rows.

TABLE XXXVII

DEGREE OF AGREEMENT AMONG PRESENT CAR AGE GROUPS
AND THE ITEMS ON FEATURES

Year	Set A					Set B				
	A*	B	C	D	E	F	G	H	I	J
1952 & Older	1	2	3	5	4	5	2	4	3	1
1953 & 1954	1	2	3	5	4	5	2	3	4	1
1955	1	2	3	5	4	5	2	3	4	1
1956 & 1957	1.5	1.5	3	5	4	5	2	4	3	1
Σ	4.5	7.5	12	20	16	20	8	14	14	4

 $Wc = .972$ $p < .01$
 $\bar{r}' = .963$ $r_{\bar{x}\bar{x}} = .990$
 $Wc = .932$ $p < .01$
 $\bar{r}' = .909$ $r_{\bar{x}\bar{x}} = .975$

*Letters A-J represent the items on features as listed in the questionnaire.

TABLE XXI
DEGREE OF AGREEMENT AMONG HEIGHT GROUPS AND THE ITEMS ON PRESENT CAR

Ht.	Item															
	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
60"	9.5	9.5	1	4.5	4.5	8	2.5	6	2.5	7	15	14	12	11	16	13
67"																
68"	14	8.5	6.5	12	2	8.5	3	6.5	5	11	15	13	10	4	16	1
71"																
72"	10	8	14	7	1.5	1.5	10	3	10	15	4	12	13	6	16	5
+																
Σ	33.5	26	21.5	23.5	8	18	15.5	15.5	17.5	33	34	39	35	21	48	19

$$Wc = .637 \quad p .02 \quad \bar{r}' = .456 \quad r_{\bar{x}\bar{x}} = .716$$

*Numbers 1-16 represent the items on present car as listed in the questionnaire.
NOTE: The figures in the body of the table are rank orders (of items) across rows.

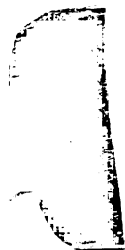


TABLE XIX

DEGREE OF AGREEMENT AMONG AGE GROUPS
AND THE ITEMS ON FEATURES

Age	Set A					Set B				
	A*	B	C	D	E	F	G	H	I	J
15	1	2	3	5	4	5	2	3	4	1
29										
30	1	2	3	5	4	5	2	4	3	1
49										
50	1	2	4	5	3	5	2	3	4	1
+										
Σ	3	6	10	15	11	15	6	10	11	3
$Wc = .924$ $p < .01$ $\bar{r}' = .886$ $r_{xx} = .959$										
$Wc = .924$ $p < .01$ $\bar{r}' = .886$ $r_{xx} = .959$										

*Letters A-J represent the items on features as listed in the questionnaire.

TABLE XXVI (continued)

Ht.	Statements										
	12	13	14	15	16	17	18	19	20	21	22
60"	6	19	1	10	7	5	14	20.5	17	3	12
67"											
68"	7	20	1	8	10	5	12.5	21	16.5	2	16.5
71"											
72"	5	18	1	8	12	6	10	20	11	2.5	17
+											
Σ	18	57	3	26	29	16	36.5	61.5	44.5	7.5	45.5

TABLE XXXII (continued)

Miles	Statements											
	12	13	14	15	16	17	18	19	20	21	22	
$\frac{0}{9}$	4.5	17.5	1	6	12.5	8.5	17.5	19.5	10.5	2	15.5	
$\frac{10}{14}$	7	19	1	8.5	10	6	11	21	16	2	17	
$\frac{15}{+}$	7	20	1	10	8	4	13	21	17	2	13	
Σ	18.5	56.5	3	24.5	30.5	18.5	41.5	61.5	43.5	6	45.5	

TABLE XXXIII

DEGREE OF AGREEMENT AMONG PRESENT CAR AGE GROUPS AND THE ITEMS ON PRESENT CAR

Item

Year	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1952 & Older	14	13	9	12	4	10	7.5	1	5.5	5.5	15	7.5	11	3	16	2
1953 & 1954	7	9	2	6	1	11	12	5	3	14.5	14.5	10	13	4	16	8
1955	11	12.5	15	8.5	3.5	6	8.5	3.5	7	12.5	5	14	10	1	16	2
1956 & 1957	12.5	3	7	6	5	1	2	12.5	10	11	4	15	8	14	16	9
Σ	44.5	37.5	33	28.5	13.5	28	30	22	22.5	43.5	38.5	46.5	42	22	64	21

$$w_c = .467 \quad p < .02 \quad \bar{r}' = .289 \quad r_{xx} = .619$$

*Numbers 1-16 represent the items on present car as listed in the questionnaire.

NOTE: The figures in the body of the table are rank orders (of items) across rows.

TABLE XXXVIII (continued)

Year	Statements											
	12	13	14	15	16	17	18	19	20	21	22	
1952 & Older	7	18	1	4	11	10	16.5	20	6	2	15	
1953 & 1954	7	19	1	8	12.5	6	11	21	12.5	2	18	
1955	6	19	1	8	9	4	14	20	17.5	5	12.5	
1956 & 1957	7	19	1	10	8	3	10	20	18	4.5	13.5	
Σ	27	75	4	30	40.5	23	51.5	81	54	13.5	59	

TABLE XXXIX

AGREEMENT AMONG CAR OWNERS CHANGING MAKES, AND NOT CHANGING MAKES
FOR THE ITEMS ON PRESENT CAR

		Item															
Make		1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Yes'	9@	14	14	8	10	4.5	2	4.5	1	7	11	13	12	15	3	16	6
No"	15	6	6	2	5	1	3	7	8	9.5	13	12	14	11	9.5	16	4

$r^1 = .61$ $p > .01$

*Numbers 1-16 represent the items on present car as listed in the questionnaire.
 †Yes indicates a change of make from last car to the present.
 "No indicates the same make from last car to the present.
 @Ranks; mean scores have been omitted.

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TABLE XL

AGREEMENT AMONG CAR OWNERS CHANGING MAKES, AND NOT CHANGING MAKES
FOR THE ITEMS ON NEXT CAR

		Item															
Make		1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Yes'	9@	10	10	15	11	8	6	4	1	14	3	2	7	16	5	12	13
No"	9	10	10	16	11	8	4	5	1	13	3	2	7	15	6	12	14

$r^1 = .987$ $p < .01$

*Numbers 1-16 represent the items on next car as listed in the questionnaire.
 NOTE: See footnote, TABLE XXXIX for legend.

Item

Make	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Yes'	1@	13	15	11	12	2	7	14	8	5	9	3	4	6	10	16
No"	1	12	13	11	14	2	8	15	9	5	7	3	4	6	10	16

r' = .979 p<.01

*Numbers 1-16 represent the items on trends as listed in the questionnaire.
NOTE: See footnote, TABLE XXXIX for legend.

TABLE XLII

AGREEMENT AMONG CAR OWNERS CHANGING MAKES, AND NOT CHANGING MAKES
FOR THE ITEMS ON SAFETY

Item

Make	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Yes'	6@	5	13	9	8	15	7	4	16	11	10	14	2	3	1	12
No"	8	4	14	5	7	15	10	6	16	9	11	13	2	3	1	12

r' = .946 p<.01

*Numbers 1-16 represent the items on safety as listed in the questionnaire.
NOTE: See footnote, TABLE XXXIX for legend.

TABLE XLIII
 AGREEMENT AMONG CAR OWNERS CHANGING MAKES,
 AND NOT CHANGING MAKES FOR
 THE ITEMS ON FEATURES

Make	Set A				Set B			
	A*	B	C	D	E	F	G	H
Yes'	1@	2	3	5	4	5	2	4
No"	1	2	3	5	4	5	2	3

$r' = 1.00$ $p.008$

$r' = .90$ $p.04$

*Letters A-J represent the items on features as listed in the questionnaire.

NOTE: See footnote, TABLE XXXIX for legend.

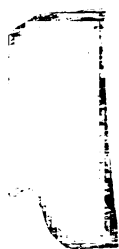


TABLE XLIV
AGREEMENT AMONG CAR OWNERS CHANGING MAKES,
AND NOT CHANGING MAKES FOR
THE STATEMENTS

Statements											
Make	1*	2	3	4	5	6	7	8	9	10	11
Yes [†]	15@	12	4	13.5	22	16	18	9	6	3	20
No [‡]	9	10	3	15	22	17.5	16	12	6	3	20

$r^1 = .921$ p4.01

NOTE: The figures in the body of the table are rank orders (of items) across rows.

*Numbers 1-22 represent the statements as listed in the questionnaire.

NOTE: See footnote, TABLE XXXIX for legend.

TABLE XLIV (continued)

Statements												
Make	12	13	14	15	16	17	18	19	20	21	22	
Yes	7	19	1	8	10.5	5	13.5	21	10.5	2	17	
No	7	19	1	11	8	5	14	21	17.5	3	13	

APPENDIX D

THE FOLLOWING TABLES, XLV-LXI ARE NONPARAMETRIC
ANALYSES OF VARIANCE, UTILIZING A TWO-WAY
CLASSIFICATION FOR THE VARIABLES,
HEIGHT, AND WEIGHT*

TABLE XLV

ITEM 4, EASE OF RIDE, PRESENT CAR

	Height in Inches							
Weight	60-67		68-71		72-+		Σ	
	1		3		1		5	
100-159	8.38	2	6.06	3	9.00	1		
	2		2		3		7	$Wc = .048$
160-179	7.20	1	7.14	2	6.63	3		
	3		1		2		6	
180-+	5.00	3	7.95	2	8.64	1		
Σ	6		7		5			
$Wc = .048$								C

*Tables where C appears in lower right corner cover items common to forms A and B of the questionnaire.

NOTE: The ranks above each mean score are the column ranks, while those to the right of each mean score are the row ranks.

TABLE XLVI

ITEM 27, EASIER RIDE, NEXT CAR

Weight	Height in Inches						Σ
	60-67		68-71		72-+		
100-159	2 7.94	2	3 7.81	1	1 9.00	1	6
160-179	3 6.60	3	2 7.62	2	1 7.63	3	6
180-+	1 9.00	1	3 6.57	3	2 8.64	2	6
Σ		6		6		6	

C

TABLE XLVII

ITEM 28, MORE LEG ROOM, NEXT CAR

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
100-159	2 5.50	2	2 5.44	3	1 9.00	1	5
160-179	1 5.60	1	3 4.62	2	3 4.38	3	7
180-+	3 3.00	3	1 5.52	2	2 7.36	1	6
Σ		6		7		5	

Wc = .048

Wc = .048

TABLE XLVIII
ITEM 38, SMOOTHER RIDE, TRENDS

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
100-159	2 8.63	2	3 7.81	3	1 9.00	1	6
160-179	3 8.20	1	1 8.10	2	3 7.88	3	7
180-+	1 9.00	1	2 8.00	3	2 8.64	2	5
Σ		4		8		6	
Wc = .350							
C							

Wc = .048

TABLE XLIX
ITEM 43, LOWER CARS, TRENDS

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
100-159	2 6.00	2	1 5.38	3	1 6.50	1	4
160-179	1 6.20	1	3 4.81	2	3 3.75	3	7
180-+	3 3.00	3	2 5.19	1	2 5.18	2	7
Σ		6		6		6	

Wc = .251

TABLE L
ITEM 52, SMOOTHER RIDE, SAFETY

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
100-159	3 6.56	1	3 6.25	3	1 6.50	2	7
160-179	1 8.00	1	2 7.14	2	2 6.38	3	5
180-+	2 7.50	2	1 7.57	1	3 4.10	3	6
Σ	4		6		8		
We = .350							
C							

Wc = .048

TABLE LI
ITEM 80, EASE OF RIDE, STATEMENTS

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
100-159	1 3.69	1	3 2.50	3	1 3.00	2	5
160-179	2 3.20	1	2 3.19	2	2 2.88	3	6
180-+	3 3.00	2	1 3.24	1	3 2.73	3	7
Σ		4		6		8	

Wc = .350

Wc = .048

TABLE LII

Weight	Height in Inches						Σ
	60-67		68-71		72-+		
100-159	1 3.19	2	1 3.44	1	3 3.00	3	5
160-179	2.5 2.00	3	2 3.24	2	2 3.50	1	6.5
180-+	2.5 2.00	3	3 2.81	2	1 3.73	1	6.5
Σ		8		5		5	

Wc = .024

Wc = .251

C

TABLE LIII

Weight	Height in Inches						Σ
	60-67		68-71		72-+		
100-159	2 2.25	3	3 2.31	2	1 3.50	1	6
160-179	1 3.40	1	2 2.86	3	3 2.88	2	6
180-+	3 2.00	3	1 3.00	1.5	2 3.00	1.5	6
Σ		7		6.5		4.5	
Wc = .135							C

TABLE LIV

ITEM C, EXTERIOR DESIGN, FEATURES

Height	Height in Inches						Σ	Wc = .048
	60-67		68-71		72-+			
100-159	2	2	2	3	1	1	5	
160-179	2.00	1	1.69	3	2.50	2	6	
180-+	3	2	1	1	3	3	7	
Σ		5		7		6		
Wc = .048								C

TABLE LV

ITEM D, PUSH BUTTON SHIFT, FEATURES

Weight	Height in Inches						Σ
	60-67		68-71		72-+		
100-159	2 1.00	1	1 .88	2	2 .50	3	5
160-179	3 .60	3	2 .66	1	1 .63	2	6
180-+	1 2.00	1	3 .57	2	3 .45	3	7
Σ		5		5		8	

Wc = .048

Wc = .251

C

TABLE LVI
ITEM E, LUGGAGE SPACE, FEATURES

Weight	Height in Inches						Σ	
	60-67		68-71		72-+			
100-159	3 1.50	2	2 1.69	1	3 .50	3	8	Wc = .251
160-179	2 1.80	2	1 1.86	1	2 1.00	3	5	
180-+	1 2.50	1	3 1.62	2	1 1.45	3	5	
Σ	5		4		9			
Wc = .65	p.10						C	

TABLE LVII
ITEM F, ACCELERATION, FEATURES

Weight	Height in Inches						Σ	
	60-67		68-71		72-+			
100-159	1 1.13	2.5	1 1.13	2.5	1 2.00	1	3	Wc = .703 p.10
160-179	2 .60	3	3 .76	2	2 1.13	1	7	
180-+	3 0	3	2 .86	2	3 1.00	1	8	
Σ	8.5		6.5		3			
Wc = .748 p.05								C

TABLE LVIII

ITEM G, PURCHASE PRICE, FEATURES

Weight	Height in Inches						Σ
	60-67		68-71		72-+		
100-159	3 2.06	2	3 2.31	1	3 2.00	3	9
160-179	2 2.60	2	2 2.48	3	1 2.75	1	5
180-+	1 3.00	1.5	1 3.00	1.5	2 2.36	3	4
Σ		5.5		5.5		7	

Wc = .028

Wc = .65
p.10

TABLE LIX

ITEM H, POWER BRAKES, FEATURES

Weight	Height in Inches						Σ
	60-67		68-71		72-+		
100-159	2	1	3	2	6		6
160-179	3	1	2	3	6		6
180-+	2	3	1	6			6
Σ	6	6	6				

TABLE LX
ITEM I, POWER STEERING, FEATURES

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
100-159	2 1.81	1	3 1.13	2	3 1.00	3	8
160-179	1 2.20	1	1 1.57	2	2 1.25	3	4
180-+	3 1.50	2	2 1.19	3	1 1.55	1	6
Σ	4		7		7		
Wc = .251							
C							

Wc = .350

TABLE LXI
ITEM J, TROUBLE FREE OPERATION, FEATURES

	Height in Inches						
Weight	60-67		68-71		72-+		Σ
	3		3		2		8
100-159	3.44	3	3.63	1	3.50	2	
	2		1		1		4
160-179	3.60	3	3.81	1	3.75	2	
	1		2		3		6
180-+	4.00	1	3.71	2	3.36	3	
Σ		7		4		7	
Wc = .251							C

Wc = .350

THE FOLLOWING TABLES, LXII-LXXIII ARE NONPARAMETRIC ANALYSES OF VARIANCE, UTILIZING A TWO-WAY CLASSIFICATION FOR THE VARIABLES, COMPANY, AND MODEL*

TABLE LXII

ITEM 4, EASE OF RIDE, PRESENT CAR

Model	Company						Σ
	G.M.		Ford		Chrysler		
4 drs.	1 8.04	1	2 6.00	3	3 8.00	2	6
2 drs.	3 7.33	2	1 7.00	3	1.5 9.00	1	5.5
Others	2 7.57	2	3 5.50	3	1.5 9.00	1	6.5
Σ		5		9		4	
Wc = .650 p.10							C

*Tables where C appears in lower right corner cover items common to forms A and B of the questionnaire.

NOTE: The ranks above each mean score are the column ranks, while those to the right of each mean score are the row ranks.

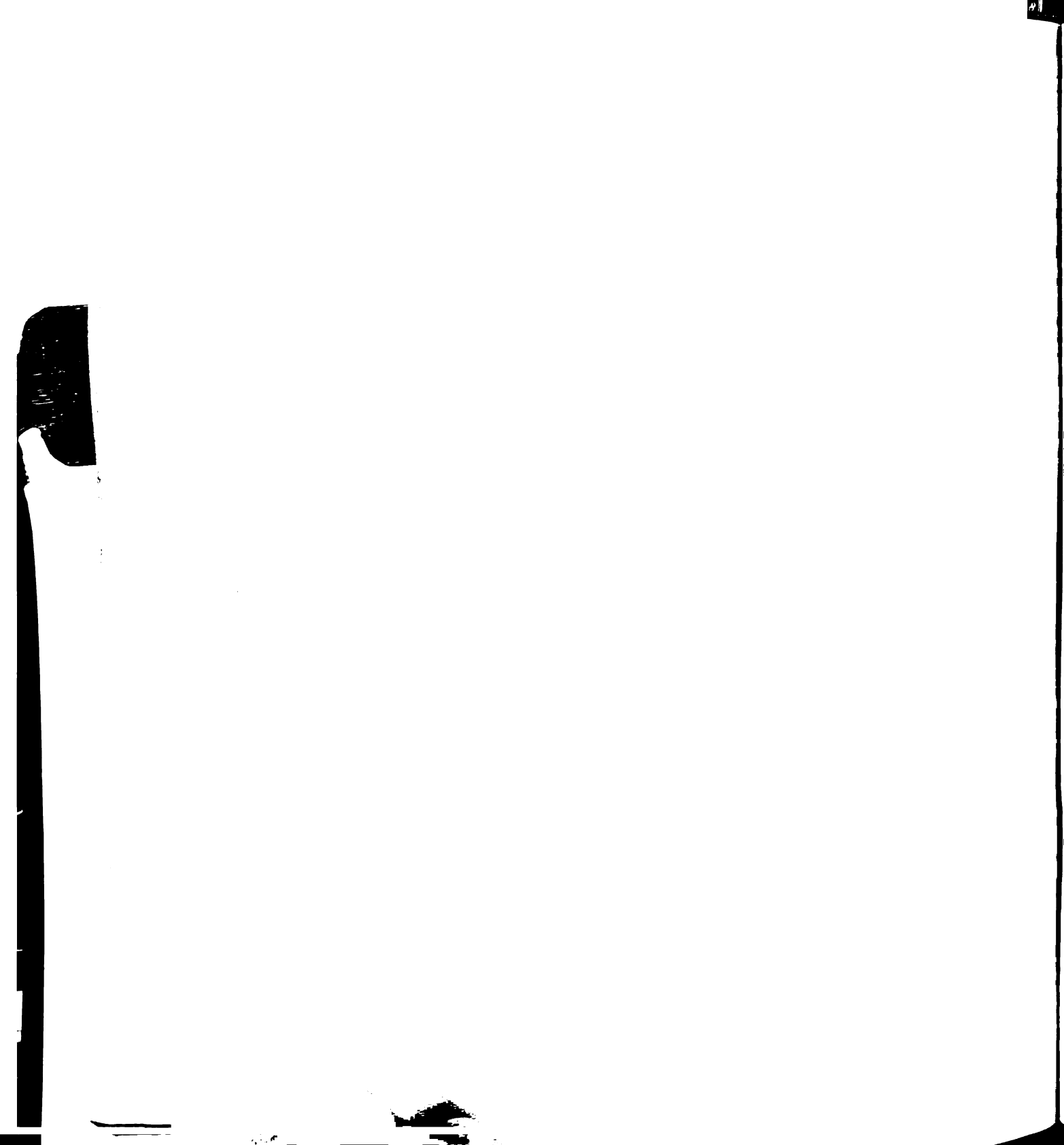


TABLE LXIII
ITEM 27, EASIER RIDE, NEXT CAR

Model	Company						Σ
	G.M.		Ford		Chrysler		
4 drs.	2 7.56	2	2 7.43	3	2 7.88	1	6
2 drs.	3 7.38	2	3 6.40	3	1 9.00	1	7
Others	1 8.28	1	1 8.00	2	3 5.00	3	5
Σ		5		8		5	

$W_c = .251$

C

Wc = .048

C

TABLE LXIV
ITEM 38, SMOOTHER RIDE, TRENDS

Model	Company						Σ
	G.M.		Ford		Chrysler		
4 drs.	3 8.04	3	2 8.43	1	2 8.38	2	7
2 drs.	1 8.29	2	3 7.00	3	1 9.00	1	5
Others	2 8.07	2	1 9.00	1	3 5.00	3	6
Σ		7		5		6	
$W_c = .048$							

Wc = .048

C

TABLE LXV
ITEM 51, MULTIPLE HEADLIGHTS, SAFETY

Model	Company						Σ
	G.M.		Ford		Chrysler		
4 drs.	1 5.24	2	2 5.57	1	1.5 5.00	3	4.5
2 drs.	2 4.66	1	3 4.20	3	3 4.33	2	8
Others	3 4.50	3	1 5.75	1	1.5 5.00	2	5.5
Σ		6		5		7	

$W_c = .297$

$W_c = .048$

TABLE LXVI
ITEM 52, SMOOTHER RIDE, SAFETY

Model	Company						Σ	
	G.M.		Ford		Chrysler			
4 drs.	2 7.36	1	1 6.86	2	2 6.38	3	5	Wc = .650 p.10
2 drs.	3 7.29	1	3 4.80	3	3 6.00	2	9	
Others	1 7.71	2	2 6.25	3	1 9.00	1	4	
Σ		4		8		6		
Wc = .350								C

TABLE LXVII
ITEM 80, EASE OF RIDE, STATEMENTS

Model	Company						Σ
	G.M.		Ford		Chrysler		
4 drs.	2 3.40	2	1 2.71	3	2 3.62	1	5
2 drs.	3 2.79	2	2 2.20	3	3 3.00	1	8
Others	1 3.50	2	3 2.00	3	1 4.00	1	5
Σ		6		9		3	

$W_c = .251$

$W_c = .852$ $p < .05$

TABLE LXVIII
ITEM 84, OBSOLETE APPEARANCE, STATEMENTS

Model	Company						Σ
	G.M.		Ford		Chrysler		
4 drs.	3 2.68	2	2 2.71	1	2 2.38	3	7
2 drs.	1 3.12	2	1 3.20	1	3 2.33	3	5
Others	2 2.78	1	3 2.00	3	1 2.50	2	6
Σ		5		5		8	

$W_c = .048$

$W_c = .251$

C

ITEM A, LEG ROOM, FEATURES

Model	Company						Σ	
	G.M.		Ford		Chrysler			
4 drs.	3 3.04	1	2.5 3.00	2	3 2.88	3	8.5	
2 drs.	1 3.33	2.5	1 3.40	1	2 3.33	2.5	4	$W_c = .515$
Others	2 3.14	2	2.5 3.00	3	1 4.00	1	5.5	
Σ		5.5		6		6.5		

ITEM B, HEAD ROOM, FEATURES

Model	Company						Σ	
	G.M.		Ford		Chrysler			
4 drs.	2 3.04	1	1 2.28	3	2.5 3.00	2	5.5	$W_c = .127$
2 drs.	1 3.33	1.5	3 1.20	3	1 3.33	1.5	5	
Others	3 2.64	2	2 2.25	3	2.5 3.00	1	7.5	
Σ		4.5		9		4.5		

$W_c = .677$ $p .10$ C

TABLE LXXI

Model	Company						Σ	
	G.M.		Ford		Chrysler			
4 drs.	3 1.44	2	3 1.71	1	2 1.00	3	8	$W_c = .350$
2 drs.	2 1.88	3	1 2.80	1	1 2.00	2	4	
Others	1 2.43	1	2 2.25	2	3 .50	3	6	
Σ		6		4		8		
$W_c = .350$								C

TABLE LXXII

Model	Company						Σ	
	G.M.		Ford		Chrysler			
4 drs.	1 1.00	1.5	3 .57	3	1.5 1.00	1.5	5.5	
2 drs.	2 .71	2	2 .80	1	3 0	3	7	$W_c = .028$
Others	3 .21	3	1 1.25	1	1.5 1.00	2	5.5	
Σ		6.5		5		6.5		

TABLE LXXIII
ITEM E, LUGGAGE SPACE, FEATURES

	Company							
Model	G.M.		Ford		Chrysler		Σ	
4 drs.	2 1.48	3	1 2.43	1	1 2.12	2	4	Wc = .350
2 drs.	3 1.21	3	2 1.80	1	3 1.33	2	8	
Others	1 1.57	1	3 1.25	3	2 1.50	2	6	
Σ		7		5		6		
Wc = .048								C

TABLE LXXIV
ITEM F, ACCELERATION, FEATURES

	Company							
Model	G.M.		Ford		Chrysler		Σ	
4 drs.	2.5 1.00	2	2 1.28	1	3 .50	3	7.5	
2 drs.	2.5 1.00	3	1 1.40	1	1 1.33	2	4.5	$Wc = .188$
Others	1 1.07	1	3 .50	3	2 1.00	2	6	
Σ		6		5		7		
$Wc = .048$								C

TABLE LXXVII I

Model	Company						Σ	
	G.M.		Ford		Chrysler			
4 drs.	1	1	1	1	1	1	3	$W_c = .852$ $p < .05$
2 drs.	1.76	1	1.28	3	1.38	2	9	
Others	3	1	3	2	3	3	6	
Σ	1.29	1	.80	2	.33	3		
	2	1	2	2	2	3	6	
Σ	1.50	3	1.25	7	1.00	8		
$W_c = .703$							$p .10$	C

TABLE LXXVIII

	Company						
Model	G.M.		Ford		Chrysler		Σ
4 drs.	2 3.68	2	3 .43	3	1.5 4.00	1	6.5
2 drs.	1 3.79	2	2 3.60	3	1.5 4.00	1	4.5
Others	3 3.36	3	1 3.75	1	3 3.50	2	7
Σ		7		7		4	

Wc = .135

Wc = .251

C

THE FOLLOWING TABLES, LXXIX-XCIV ARE NONPARAMETRIC ANALYSES
OF VARIANCE, UTILIZING A TWO-WAY CLASSIFICATION
FOR THE VARIABLES, MAKE AND MODEL*

TABLE LXXIX
ITEM I, HORSEPOWER[PRESENT CAR

Model	Make				Σ
	Buick	Chev.	Ford	Olds.	Pontiac
4 drs.	3 7.25	2 7.57	1 5.40	5 6.44	4 7.00
	2	3	2	3	2
2 drs.	1.5 8.00	2 8.00	1 6.00	4 8.25	3 5.66
	4	1	3	1	1
Others	1.5 8.00	9.00	3.66	8.50	8.50
	4	1	5	2.5	2.5
Σ	8.5	4.5	14	7.5	10.5

Wc = .636 p>.05

C

*Tables where C appears in lower right corner cover items common to forms A and B of the questionnaire.

NOTE: The ranks above each mean score are the column ranks, while those to the right of each mean score are the row ranks.

Wc = .293
-115-

TABLE XXC

ITEM 15, MILES PER GALLON, PRESENT CAR

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	¹ 5.00	³ 3.29	¹ 4.20	³ 3.33	^{2.5} 3.66	10.5
2 drs.	² 3.66	² 4.50	² 3.40	² 4.50	^{2.5} 3.66	10.5
Others	³ 1.00	¹ 7.00	³ 1.00	¹ 5.00	¹ 5.00	9
Σ	9	7.5	11.5	8	9	

Wc = .111

Wc = .01
1116-

TABLE XXCI

ITEM 19, MORE HORSEPOWER, NEXT CAR

Model	Make				Σ
	Buick	Chev.	Ford	Olds.	
4 drs.	¹ 3.75	³ 3.14	³ 4.00	³ 2.55	³ 4.33
2 drs.	² 3.33	² 3.83	¹ 5.40	² 3.00	² 5.00
Others	³ 2.33	¹ 6.50	² 4.66	¹ 6.50	¹ 6.00
Σ	12	8.5	7	11.5	6
$W_C = .304$					
C					

 $W_C = .250$

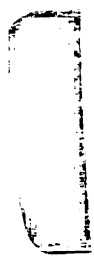


TABLE XXCII
ITEM 34, HIGHER HORSEPOWER, TRENDS

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	¹ 5.13 1	³ 3.29 3	³ 3.00 5	² 3.22 4	^{2.5} 4.33 2	11.5
2 drs.	² 3.33 4	² 3.92 2	² 3.80 3	³ 3.13 5	^{2.5} 4.33 1	11.5
Others	³ 2.66 5	¹ 6.50 1	¹ 4.00 4	¹ 5.00 3	¹ 6.00 2	7
Σ	10	6	12	12	5	
Wc = .475						
C						

Wc = .252

TABLE XXCIII
ITEM 57, HIGHER HORSEPOWER, SAFETY

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	¹ 4.35 2	² 3.57 4	³ 3.20 5	² 4.11 3	^{1.5} 5.00 1	9.5
2 drs.	^{2.5} 3.33 3	³ 3.08 4	¹ 5.40 1	³ 2.88 5	^{1.5} 5.00 2	11
Others	^{2.5} 3.33 4	¹ 6.50 1	² 4.66 3	¹ 5.00 2	³ 3.00 5	9.5
Σ	9	9	9	10	8	
$W_c = .011$						C

$W_c = .018$

TABLE XXCIV

ITEM 70, REPAIR COST, STATEMENTS

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	¹ 3.13	² 2.43	¹ 3.20	³ 2.55	² 2.66	9
2 drs.	^{2.5} 2.66	¹ 2.58	² 2.80	¹ 3.13	³ 1.66	9.5
Others	^{2.5} 2.66	³ 2.00	³ 2.66	² 3.00	¹ 4.00	11.5
Σ	8.5	14	6.5	7	9	

Wc = .381

C

Wc = .051

TABLE XXCV

ITEM A, LEG ROOM, FEATURES

Model	Make				Σ
	Buick	Chev.	Ford	Olds.	Pontiac
4 drs.	² 3.13 2	³ 2.86 3	³ 2.60 5	³ 2.66 4	¹ 3.66 1
2 drs.	¹ 4.00 1	² 3.33 4	¹ 3.40 3	¹ 3.75 2	² 2.66 5
Others	³ 2.66 3.5	¹ 3.50 1.5	² 2.66 3.5	² 3.50 1.5	³ 2.50 5
Σ	6.5	8.5	11.5	7.5	11
$Wc = .234$					
C					

Wc = .250

TABLE XXCVI

ITEM B, HEAD ROOM, FEATURES

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	¹ 3.25 2	¹ 3.14 3	^{1.5} 2.00 3	² 3.33 1	³ 2.00 4.5	8.5
2 drs.	³ 1.66 4	² 2.66 3	³ 1.20 5	³ 2.88 2	¹ 3.33 1	12
Others	² 3.00 2	³ 1.00 5	^{1.5} 2.00 4	¹ 3.50 1	² 2.50 3	9.5
Σ	8	11	13.5	4	8.5	
$W_c = .547$						
C						

Wc=.111

TABLE XXCVII
ITEM C, EXTERIOR DESIGN, FEATURES

Model	Make				Σ
	Buick	Chev.	Ford	Olds.	
4 drs.	³ 1.38 4	³ 1.29 5	³ 1.60 3	² 1.77 1	² 1.66 2
2 drs.	² 2.00 3	² 1.66 4	¹ 2.80 1	¹ 2.50 2	³ 1.33 5
Others	¹ 2.66 2.5	¹ 3.50 1	² 2.66 2.5	³ 1.50 5	¹ 2.00 4
Σ	9.5	10	6.5	8	11
$W_c = .142$					
C					

$W_c = .250$

TABLE XXCVIII
ITEM D, PUSH BUTTON SHIFT, FEATURES

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	2 .88	2 .86	2 .80	1 .88	1 1.66	8
2 drs.	1 1.00	3 .58	3 .40	2 .13	2 1.33	11
Others	3 0	1 1.50	1 1.00	3 0	3 0	11
Σ	8.5	8	11	11.5	6	
$W_c = .216$						
C						

$W_c = .096$
-124-

TABLE XXCIX

ITEM E, LUGGAGE SPACE, FEATURES

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	² 1.38 3	¹ 1.86 2	¹ 3.00 1	² 1.33 4	³ 1.00 5	9
2 drs.	³ 1.00 4.5	² 1.75 2	² 2.50 1	³ 1.00 4.5	² 1.33 3	12
Others	¹ 1.66 2.5	³ .50 5	³ 1.66 2.5	¹ 1.50 4	¹ 3.00 1	9
Σ	10	9	4.5	12.5	9	
$Wc = .421$						
C						

Wc = .096

-125-

TABLE XC
ITEM F, ACCELERATION, FEATURES

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	2 .75 4	3 .71 5	2 .80 3	3 1.11 2	1 1.66 1	11
2 drs.	1 1.00 3.5	2 1.00 3.5	1 1.40 1	2 1.13 2	3 .66 5	9
Others	3 .66 4	1 2.00 1	3 .33 5	1 1.50 2	2 1.00 3	10
Σ	11.5	9.5	9	6	9	
$W_C = .160$						C

$W_C = .019$
-126-

TABLE XCI
ITEM G, LOW PURCHASE PRICE, FEATURES

Model	Make				Σ
	Buick	Chev.	Ford	Olds.	Pontiac
4 drs.	3 1.88 4	1 3.43 2	2.5 3.00 3	3 1.44 5	1 3.66 1
2 drs.	1.5 2.66 3	2 2.83 2	2.5 3.00 1	1 2.38 4	3 1.66 5
Others	1.5 2.66 3	3 2.50 4	1 3.35 1	2 2.00 5	2 3.00 2
Σ	10	9	5	14	8
Wc = .652 p>.05 C					



TABLE XCII
ITEM H, POWER BRAKES, FEATURES

Model	Make				Σ
	Buick	Chev.	Ford	Olds.	Pontiac
4 drs.	2 1.38	3 .86	1 1.60	1 1.66	3 .66
				1	5
2 drs.	1 2.00	2 1.42	2 1.20	2 1.38	1 2.33
				4	1
Others	3 1.33	1 1.50	3 1.00	3 .50	2 2.00
			4	5	1
Σ	8	9	11	10	7
$Wc = .098$					
C					

$Wc = .135$
-128-

TABLE XCIII

ITEM 1, POWER STEERING, FEATURES

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	1 2.13	1 1.43	2 1.00	2 2.00	1.5 1.33	7.5 4
2 drs.	3 .66	3 .92	3 .80	3 1.63	1.5 1.33	13.5 2
Others	2 1.66	2 1.00	1 1.66	1 2.50	3 1.00	9 4.5
Σ	8.5	10.5	11.5	4	10.5	
$W_C = .455$						
C						

 $W_C = .374$

TABLE XCIV

ITEM J, TROUBLE FREE OPERATION, FEATURES

Model	Make					Σ
	Buick	Chev.	Ford	Olds.	Pontiac	
4 drs.	1 3.88	2 3.57	2.5 3.60	1 3.77	3 2.66	9.5
2 drs.	2.5 3.66	1 3.83	2.5 3.60	2 3.75	1 4.00	9
Others	2.5 3.66	3 3.00	1 3.66	3 3.50	2 3.00	11.5
Σ	6.5	10.5	9.5	8	10.5	

Wc = .143

C

THE FOLLOWING TABLES, XCV-CXV ARE NONPARAMETRIC
ANALYSES OF VARIANCE, UTILIZING A TWO-WAY
CLASSIFICATION FOR THE VARIABLES,
AGE, AND DISTANCE*

TABLE XCV

ITEM 1, HORSEPOWER, PRESENT CAR

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	3 4.50	3	2 6.94	2	1 7.80	1	6
30-49	2 5.90	3	1 7.11	1	3 6.70	2	6
50-+	1 8.25	1	3 6.23	3	2 7.50	2	6
Σ	7		6		5		
$W_c = .0418$							

*Tables where C appears in lower right corner cover items common to forms A and B of the questionnaire.

NOTE: The ranks above each mean score are the column ranks, while those to the right of each mean score are the row ranks.



TABLE XCVI
ITEM 4, EASE OF RIDE, PRESENT CAR

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	3 5.00	3	3 5.44	2	2 8.50	1	8
30-49	2 5.80	3	2 8.00	1	3 7.30	2	7
50-+	1 7.50	3	1 8.38	2	1 9.00	1	3
Σ	9		5		4		
Wc = .650	p.10						C

Wc = .703
p.10

TABLE XCVII
ITEM 10, LUGGAGE SPACE, PRESENT CAR

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	2 8.00	1	3 6.50	3	2 7.40	2	7
30-49	3 5.40	3	2 7.32	1	3 6.10	2	8
50-+	1 8.38	1	1 8.08	3	1 8.16	2	3
Σ	5		7		6		
Wc = .048							
C							

Wc = .703
p.10

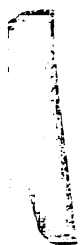


TABLE XCVIII

ITEM 19, MORE HORSEPOWER, NEXT CAR

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1 8.00	1	1 5.06	2	1 4.00	3	3
30-49	2 4.20	1	2 3.46	2	2 2.80	3	6
50-+	3 3.25	1	3 3.00	2	3 2.66	3	9
Σ		3		6		9	
Wc = .852 p<.05							
C							

TABLE XCIX

ITEM 23, POWER BRAKES, NEXT CAR

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1 9.00	1	1 6.94	2	2 6.40	3	4
30-49	3 5.00	2.5	2 6.68	1	3 5.00	2.5	8
50-+	2 6.00	3	3 6.31	2	1 8.00	1	6
Σ		6.5		5		6.5	

$W_c = .028$

TABLE C
ITEM 27, EASIER RIDE, NEXT CAR

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1 9.00	1	3 6.94	3	2 7.00	2	6
30-49	2 8.60	1	1 7.93	2	3 6.30	3	6
50-+	3 7.88	1	2 7.38	2	1 7.16	3	6
Σ		3		7		8	
Wc = .703 p.10							
C							

TABLE CI
ITEM 34, HIGHER HORSEPOWER, TRENDS

	Miles in Thousands							
Age	0-9		10-14		15-+		Σ	
15-29	1 7.00	1	1 4.56	2	1 4.50	3	3	Wc = .703 p.10
30-49	3 3.30	3	2 3.61	1	2 3.40	2	7	
50-+	2 4.13	1	3 3.38	2	3 3.00	3	8	
Σ		5		5		8		
Wc = .251								C

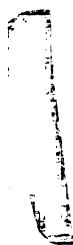


TABLE CII
ITEM 38, SMOOTHER RIDE, TRENDS

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1 9.00	1	3 7.88	2	1 7.60	3	5
30-49	3 8.60	1	2 8.25	2	3 7.00	3	8
50-+	2 8.88	1	1 8.69	2	2 7.50	3	5
Σ		3		6		9	
Wc = .852 p<.05							
C							

Wc = .251

TABLE CIII
ITEM 52, SMOOTHER RIDE, SAFETY

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	3 6.50	1	3 6.13	2	3 5.80	3	9
30-49	2 7.20	2	1 7.50	1	2 6.20	3	5
50-+	1 7.38	3	2 7.46	2	1 8.33	1	4
Σ		6		5		7	
Wc = .048							

Wc = .650
p.10

TABLE CIV
ITEM 57, HIGHER HORSEPOWER, SAFETY

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1 8.00	1	1 5.38	2	2 3.40	3	4
30-49	2 3.50	3	3 3.75	2	1 4.00	1	6
50-+	3 2.25	3	2 3.92	1	3 3.33	2	8
Σ		7		5		6	
Wc = .048							
C							

Wc = .350

TABLE CV
ITEM 80, EASE OF RIDE, STATEMENTS

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	3 1.50	3	3 2.31	2	2 3.40	1	8
30-49	2 2.70	2	2 3.29	1	3 2.60	3	7
50-+	1 3.25	3	1 3.54	2	1 4.00	1	3
Σ		8		5		5	

Wc = .251

Wc = .703
p.10

TABLE CVI
ITEM A, LEG ROOM, FEATURES

Miles in Thousands							
Age	0-9		10-14		15-+		Σ
15-29	2.5		1		2		5.5
	2.50	3	3.44	1	3.30	2	
30-49	2.5		2		3		7.5
	2.50	3	3.32	1	3.00	2	
50-+	1		3		1		5
	3.00	2	2.92	3	3.33	1	
Σ		8		5		5	
Wc = .251							
C							

Wc = .127

TABLE CVII
ITEM B, HEAD ROOM, FEATURES

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1		3		2		6
	4.00	1	2.13	3	2.90	2	
30-49	2.5		2		3		7.5
	3.00	1	2.82	2	2.00	3	
50-+	2.5		1		1		4.5
	3.00	1.5	2.92	3	3.00	1.5	
Σ		3.5		8		6.5	
Wc = .515							C

Wc = .188

TABLE CVIII
ITEM C, EXTERIOR DESIGN, FEATURES

Miles in Thousands							
Age	0-9		10-14		15-+		Σ
15-29	1 2.00	1	2 1.88	2	3 1.30	3	6
30-49	3 1.50	3	1 2.00	2	1 2.30	1	5
50-+	2 1.63	2	3 1.31	3	2 1.66	1	7
Σ	6		7		5		
Wc = .048							
C							

TABLE CIX
ITEM D, PUSH BUTTON SHIFT, FEATURES

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	3 .50	2.5	1 1.00	1	1.5 .50	2.5	5.5
30-49	2 .90	1	3 .68	2	3 .20	3	8
50-+	1 1.00	1	2 .85	2	1.5 .50	3	4.5
Σ	4.5		5		8.5		
Wc = .459							
C							



TABLE CX
ITEM E, LUGGAGE SPACE, FEATURES

	Miles in Thousands							
Age	0-9		10-14		15-+		Σ	
15-29	3 1.00	3	2 1.56	2	1 2.00	1	6	
30-49	1 2.10	1	3 1.21	3	2.5 1.50	2	6.5	
50-+	2 1.38	3	1 2.00	1	2.5 1.50	2	5.5	
Σ		7		6		5		
Wc = .048								C

TABLE CXI
ITEM F, ACCELERATION, FEATURES

Age	Miles in Thousands						Σ	
	0-9		10-14		15-+			
15-29	3 1.00	2	1 .94	3	1 1.30	1	5	Wc = .251
30-49	1 1.50	1	2 .71	3	2 1.20	2	5	
50-+	2 1.13	1	3 .62	2	3 .50	3	8	
Σ		4		8		6		
Wc = .350								C

TABLE CXII
ITEM G, LOW PURCHASE PRICE, FEATURES

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	3 1.50	3	1 2.81	1	3 1.90	2	7
30-49	2 2.40	2.5	2 2.75	1	1 2.40	2.5	5
50-+	1 2.63	1	3 2.62	2	2 2.00	3	6
Σ	6.5		4		7.5		

Wc = .297

Wc = .048

TABLE CXIII
ITEM H, POWER BRAKES, FEATURES

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	1 2.00	1	2 1.50	3	2 1.60	2	5
30-49	3 1.00	2	3 1.39	1	3 .80	3	9
50-+	2 1.25	3	1 1.69	2	1 3.00	1	4
Σ	6		6		6		

C

TABLE CXIV
ITEM I, POWER STEERING, FEATURES

	Miles in Thousands						
Age	0-9		10-14		15-+		Σ
15-29	2.5 1.50	1.5	3 1.00	3	1 1.50	1.5	6.5
30-49	2.5 1.50	2	1 1.68	1	2 1.40	3	5.5
50-+	1 1.63	1	2 1.54	2	3 .83	3	6
Σ	4.5		6		7.5		

$W_c = .188$

TABLE CXV
ITEM J, TROUBLE FREE OPERATION, FEATURES

Miles in Thousands							
Age	0-9		10-14		15-+		Σ
15-29	1 4.00	1	1 3.75	2	1 3.70	3	3
30-49	2 3.60	2	2 3.68	1	3 3.20	3	7
50-+	3 3.38	3	3 3.54	2	2 3.66	1	8
Σ	6		5		7		
Wc = .048							
C							

CORRELATION BETWEEN THE RANKINGS FOR EACH
OF A SELF OF FEATURES BY CAR OWNERS
WHO PLAN TO BUY VERSUS THOSE WHO
DO NOT PLAN TO BUY, MATCHED ON
THE AGE OF THE CAR NOW OWNED*

TABLE CXVI

ITEM 1, HORSEPOWER, PRESENT CAR

Purchase	Year							
	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	8.33	1	6.70	4	7.00	3	7.33	2
Yes	5.06	4	7.74	2	8.00	1	7.19	3
$r^1 = -.80$								C

TABLE CXVII

ITEM 4, EASE OF RIDE, PRESENT CAR

Purchase	Year							
	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	8.86	2	7.00	4	9.00	1	7.66	3
Yes	6.24	4	7.37	3	7.55	2	8.33	1
$r^1 = .0$								C

*Tables where C appears in lower right corner
cover items common to forms A and B of the questionnaire.
NOTE: The figure to the right of each mean score
is its rank.

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TABLE CXVIII

ITEM 19, MORE HORSEPOWER, NEXT CAR

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	3.16	3	4.30	1	3.00	4	3.33	2
Yes	4.82	1	3.85	2	3.27	4	3.29	3
$r' = .40$								C

TABLE CXIX

ITEM 27, EASIER RIDE, NEXT CAR

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	5.66	4	8.40	1	7.13	2	6.66	3
Yes	7.35	3	6.93	4	8.64	1	8.05	2
$r^1 = -.20$								C

TABLE CXX

ITEM 34, HIGHER HORSEPOWER, TRENDS

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	4.83	1	3.80	2	3.00	4	3.66	3
Yes	4.47	1	3.77	2	3.64	3	3.62	4
$r^1 = .80$								C

TABLE CXXI

ITEM 38, SMOOTHER RIDE, TRENDS

Purchase	Year							
	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	6.00	4	9.00	1	8.75	2	8.00	3
Yes	8.11	2	8.04	3	8.91	1	8.00	4
r ² = .0								C

TABLE CXXII

ITEM 46, SPORTS-CAR HANDLING, TRENDS

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	5.16	3	6.40	1	5.50	2	4.83	4
Yes	5.54	2	5.33	4	5.45	3	6.14	1
$r^1 = -1.00 \quad p.082$								

TABLE CXXIII

ITEM 52, SMOOTHER RIDE, SAFETY

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	6.16	4	6.80	2	6.75	3	7.00	1
Yes	6.12	4	7.37	2	8.45	1	7.10	3
$r^1 = .20$								

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TABLE CXXIV

ITEM 57, HIGHER HORSEPOWER, SAFETY

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	4.50	2	4.70	1	3.50	3	3.33	4
Yes	4.47	1	3.66	4	3.82	3	3.86	2
$r' = -.40$								C

TABLE CXXV

ITEM 60, PUSH BUTTON SHIFT, SAFETY

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	4.66	3	5.60	1	5.50	2	4.00	4
Yes	5.18	2	4.77	3	4.45	4	5.19	1
$r' = -.80$								C

TABLE CXXVI

ITEM 80, EASE OF RIDE, STATEMENTS

Purchase	Year							
	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	3.83	1	2.90	4	3.50	3	3.66	2
Yes	2.92	3	2.81	4	3.27	1	3.19	2

$r' = .20$

TABLE CXXVII

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	3.50	1	3.20	2	3.00	3	2.66	4
Yes	3.12	3	3.48	1	3.36	2	2.76	4
$r' = .40$								C

TABLE CXXVIII

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	2.66	4	3.00	2.5	3.25	1	3.00	2.5
Yes	2.82	1	2.71	2.5	2.27	4	2.71	2.5
$r' = -.80$								C

TABLE CXXIX

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	1.83	2	1.80	3	1.00	4	2.00	1
Yes	1.53	4	1.77	3	2.09	1	1.86	2
$r' = -.40$								

TABLE CXXX

ITEM D, PUSH BUTTON SHIFT, FEATURES

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	.50	3.5	.70	2	1.50	1	.50	3.5
Yes	.94	1	.52	4	.82	2	.76	3
$r^1 = -.15$								C

TABLE CXXXI

ITEM E, LUGGAGE SPACE, FEATURES

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	1.50	2	1.30	3	1.25	4	1.83	1
Yes	1.53	2	1.44	4	1.45	3	1.90	1
$r^1 = .80$								C

TABLE CXXXII

ITEM F, ACCELERATION, FEATURES

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	1.50	1	.50	4	1.00	2	.83	3
Yes	1.00	2	1.15	1	.64	4	.90	3
$r' = -.40$								

TABLE CXXXIII

ITEM G, LOW PURCHASE PRICE, FEATURES

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	2.83	2	2.50	3.5	3.25	1	2.50	3.5
Yes	2.35	3	2.55	1	2.27	4	2.48	2
$r' = -.85$								C

TABLE CXXXIV

ITEM H, POWER BRAKES, FEATURES

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	1.16	3	1.10	4	1.25	2	1.33	1
Yes	1.41	4	1.55	3	1.82	1	1.62	2
$r' = .60$								C

TABLE CXXXV

ITEM I, POWER STEERING, FEATURES

	Year							
Purchase	1952 & Older		1953 & 1954		1955		1956 & 1957	
No	.83	3	2.30	1	.75	4	2.00	2
Yes	1.13	3	1.04	4	1.55	1	1.49	2
$r^1 = -.80$								

ROOM USE ONLY

Date Due

[illegible]