RELATIONSHIPS BETWEEN FAMILY SUPERVISION OF BEGINNING MALE DRIVERS AND TRAFFIC VIOLATION CONVICTIONS

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
CHARLES EDWIN SMITH
1972

This is to certify that the

thesis entitled

RELATIONSHIPS BETWEEN FAMILY SUPERVISION
OF BEGINNING MALE DRIVERS AND
TRAFFIC VIOLATION CONVICTIONS

presented by

CHARLES EDWIN SMITH

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Education

W. A. Mann

Major professor

Date August 3, 1972

O-7639

ABSTRACT

RELATIONSHIPS BETWEEN FAMILY SUPERVISION OF BEGINNING MALE DRIVERS AND TRAFFIC VIOLATION CONVICTIONS

By

Charles Edwin Smith

This study was designed to determine what relationship exists between the reported family supervision of beginning male drivers and their traffic violation convictions.

The null hypothesis used in this study was that no significant difference exists in the reported family supervision provided for beginning male drivers with traffic violation convictions and beginning male drivers without traffic violation convictions.

The five sub-hypohteses stated in the null form are:

Sub-Hypothesis 1:

There is no significant difference between the reported family rapport of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 2:

There is no significant difference between the reported family restrictions of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 3:

There is no significant difference between the reported automobile availability of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 4:

There is no significant difference between the automobile ownership of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 5:

There is no significant difference between the reported automobile usage of beginning male drivers with and without traffic violation convictions.

The population for this study included 247 male members of the junior class who on March 21, 1968, were attending a public high school in Janesville, Wisconsin and who also held a Wisconsin probationary drivers license.

Of the original population, 9 members were eliminated from possible sample selection because they were no longer a resident of Wisconsin or their current address was not available. On May 21, 1971, the 238 remaining members of the original population were sent a letter requesting their participation in the study.

The finalized sample for this study included those 105 members of the population who chose to participate after receiving two letters of request.

Data for this study were collected from three sources. The Family and Automobile Opinionnaire was developed and sent to each subject in the Spring of 1971. The second source was the Student Driving Survey which was completed by the subjects in March, 1968. The third source was a Driver Record Abstract obtained for each subject from the Wisconsin Division of Motor Vehicles.

All data were prepared for computer processing. Statistical treatment of the data included one-way multivariate analysis of variance, correlation coefficients, frequency distributions, means, and percentage analysis. The level of significance was set at .05 for this study.

Seven t-tests were conducted to determine if the sample was representative of the population. It was concluded that the sample was representative of the population.

The null hypothesis was rejected because the one-way MANOVA produced an f-statistic of 2.41 and a p value of less than .04. The critical values were 2.30 for the f-statistic and .05 for the level of significance.

A univariate f-test indicated that reported family rapport as measured in this study was not significantly different for violators and non-violators. The first sub-hypothesis was not rejected.

A univariate f-test indicated that reported family restrictions as measured in this study was not significantly different for violators and non-violators. The second sub-hypothesis was not rejected.

A univariate f-test indicated that reported automobile availability as measured in this study was significantly different for violators and non-violators. The third sub-hypothesis was rejected.

A univariate f-test indicated that reported automobile ownership as measured in this study was significantly different for violators and non-violators. The fourth sub-hypothesis was rejected.

A univariate f-test indicated that reported automobile usage as measured in this study was significantly different for violators and non-violators. The fifth sub-hypothesis was rejected.

The correlation coefficients conducted to determine the interrelationships between the five dependent variables indicated that the five family supervision variables were not independent.

RELATIONSHIPS BETWEEN FAMILY SUPERVISION OF BEGINNING MALE DRIVERS AND TRAFFIC VIOLATION CONVICTIONS

By

Charles Edwin Smith

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Secondary Education and Curriculum

1972

DEDICATION

This study is dedicated to those teachers, students, colleagues, friends, and family who have contributed of themselves unselfishly, so that the author might continue growing educationally.

ACKNOWLEDGMENTS

The author has had the opportunity to meet many individuals who have contributed to the success of his doctoral program. Although it would be impossible to thank each one individually, he would like to thank several who have contributed beyond what was expected of them.

The author is especially grateful to Dr. William A. Mann, for serving as advisor and chairman of the doctoral committee. His willingness to serve unselfishly and constant encouragement will be forever appreciated.

The author would also like to thank the following committee members, Dr. Robert Gustafson, Dr. George Meyers, and Dr. Louis Romano for their contribution to his doctoral studies. It has been a privilege to work with them throughout the doctoral program.

The writer is grateful for an opportunity to acknowledge a number of people whose cooperation and assistance aided in the completion of the study;

To Dr. William Covert, his warm personality in and out of the classroom has been a constant source of encouragement.

To Charles Dreveskracht, Highway Traffic Center, for his encouragement during the doctoral program and assistance with the computer programming.

To Dr. Robert C. Mills, Central Michigan University, for his encouragement throughout the program and special assistance in proof reading the draft of this thesis.

To Linda Allal and Roy Gabrial, Office of Research Consultation, School of Education, for their patience and assistance in designing the statistical portion of the study.

To Lorris Dusso, Division of Motor Vehicles, Wisconsin Department of Transportation and Mrs. Kathleen Weber, Head Librarian, Highway Safety Research Institute, University of Michigan, for the courtesies and assistance offered to the author.

To the professional staff and graduate assistants, Highway Traffic Safety Center, Michigan State University for the willingness to assist and their constant encouragement.

A special thank you to my wife, Wilma, and children, Conrad and Janel, for their patience, understanding, and cooperation with regard to the author's desire to grow professionally.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

THE PROBLEM

Statement of the Problem

Our most valuable human resource is the youth of our nation. A portion of this resource never becomes fully productive, because of accidental death and disabling injuries. Research indicates that traffic accidents are the single most important cause of deaths and disabling injuries among our young citizens. A recent government publication states: "Driving and riding with other young drivers constitute the greatest hazard to survival which American youth must pass successfully to reach adulthood."[1]

It is difficult to obtain an accurate assessment of traffic accidents involving young people. Available facts and figures indicate that the young male driver is involved in more accidents than we might expect for the

---

[1]National Transportation Safety Board, Youth and Traffic Safety Education, Report No. NTSB-STS-71-3 (Washington, D.C.: U.S. Department of Commerce, 1971), p. 13.

number of drivers in their age group.[2] However, the inconsistency of assessing the teenage traffic picture with our present data is pointed out by Klein: "This rather primitive statistical procedure of relating the number of reported accidents to an estimated number of license holders has led to the inference that accidents are directly related to age and that teen-aged driver is, by virture of his age, likely to have more accidents than an older driver."[3] In order to obtain a valid assessment, a ratio must be determined between traffic accidents and driving exposure. Currently, we are only able to estimate driving exposure.

It is very apparent that our young people have a strong desire to drive automobiles. In 1968, a study[4] conducted at Janesville, Wisconsin, revealed that 84 per cent of the high school juniors and seniors had a license

---

[2]National Safety Council, Accident Facts, 1971 ed. (Chicago: National Safety Council, 1971), p. 9.

[3]David Klein, "A Reappraisal of the Violation and Accident Data on Teen-Aged Drivers," Traffic Quarterly, October, 1966, p. 503.

[4]Charles Edwin Smith, Use of the Automobile by High School Students (DeKalb, Ill.: Department of Industry and Technology, Northern Illinois University, 1968), p. 12.

to operate a motor vehicle. In addition 50 per cent of the senior and 29 per cent of the junior males owned a motor vehicle.[5]

There have been many reasons suggested as to why young people would want to drive. Psychologist, educators, and researchers are in agreement that at least in American culture, particularly for the young male, the automobile provides more than functional capabilities. It was suggested by Mann:

> Teen-agers like to be considered as adults. The use of a car is an important symbol of "growing up" and acquiring highly prized independence. It is no wonder then that, as they develop from somewhat irresponsible youth to the status of young adults, the use of the automobile mirrors the uncertainties and emotional problems of this change.[6]

McFarland and Moore in a study of youth and the automobile hold a similar view:

> For the adolescent and young adult the symbolic value of the automobile, beyond its basic functional use, may be of particular importance. To many it may represent freedom and escape from parental control and supervision.[7]

---

[5] Ibid., p. 23.

[6] William A. Mann, Driver Education and the Teen-Age Driver (East Lansing: Highway Traffic Safety Center, Michigan State University, 1958), p. 1.

[7] R. A. McFarland and R. C. Moore, "Youth and the Automobile," Values and Ideals of American Youth, ed. by Eli Ginzberg (New York: Columbia University Press, 1961), p. 173.

Irrespective of the reason or reasons for teenagers wanting to drive, they are involved in traffic crashes. Two major theories, inexperience and immaturity, are offered by a recent government publication[8] as possible explanations for crashes involving young drivers. Both of these theories suggest that parents in cooperation with other agencies, play a major role in providing driving experience and evaluating their son's maturity level.

"Parents have the crucial task of easing their youngsters through the initial driving situations until they become experienced and careful drivers."[9] In a book written for the teenager, Felsen[10] suggests that he will allow some "errors" within limits to provide learning experiences. The young driver wants and expects some direction from their parents. Young males may interpret the lack of control as parental rejection.[11] Schlesinger[12]

---

[8]National Transportation Safety Board, op. cit., p. 3.

[9]L. E. Schlesinger, Is There A Teen-Age Driver in Your House? (New York: New American Library, Inc., 1967), p. 25.

[10]Henry G. Felsen, To My Son, The Teen-Age Driver (New York: Dodd, Mead and Co., 1964), p. 24.

[11]William Mann, "Teenage Personality As Related to Driving Behavior" (East Lansing: Highway Traffic Safety Center, Michigan State University), p. 3. (Mimeographed.)

[12]Schlesinger, op. cit., p. 99.

maintains that parental authority is needed to provide a standard of behavior by which youth may measure their performance.

There is probably no other period in parent-child relationships where communication and cooperation is more vital, than the period in which the youngster is maturing rapidly and learning to drive.

Importance of the Study

It appears that the typical high school driver education program, that provides thirty hours of classroom instruction and six hours of behind-the-wheel experience is not sufficient to meet the educational needs of the novice driver. As pointed out in an article published by State Farm Insurance Company:

> Now, acute as it is, this problem of the teenager behind the wheel of an automobile does not necessarily exist in isolation. What he does as a driver, or a passenger in a car, is just part of a much bigger problem--a problem that, in turn, is affected by parental control (or lack of it), by environment, by emotional make-up, by geographic location, by climatic conditions, by population or by any number of other factors. But this we do know, the teenager, or the juvenile driver, is a problem--a condition he fails to understand and in many instances, his parents fail to understand.[13]

In order to gain a better understanding of the teenage driver more factual information is needed. Concerned individuals such as licensing authorities,

---

[13]"The Problem of the Young Driver" (Bloomington, Ill.: State Farm Insurance Co., 1967), p. 3.

driver educators, and parents are particularly interested in the relationship between young drivers and their families.

Purpose of the Study

It was the purpose of this study to determine what relationship exists between reported family supervision and traffic violation convictions of beginning male drivers.

The hypothesis for this study was to determine if a significant difference existed between the reported family supervision provided for beginning male drivers with traffic violation convictions and beginning male drivers without traffic violation convictions.

Sub-Hypothesis 1:

To determine if a significant difference existed between the family rapport of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 2:

To determine if a significant difference existed between the family restrictions of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 3:

To determine if a significant difference existed between the automobile availability of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 4:

To determine if a significant difference existed between the automobile ownership of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 5:

To determine if a significant difference existed between the automobile usage of beginning male drivers with and without traffic violation convictions.

There was no attempt to measure the quality of the family supervision provided by the families of the beginning male driver.

The sources of data used in this study involved questionnaires completed by the subjects and an abstract of their driving record on file with the Wisconsin Division of Motor Vehicles.

Definition of Terms

Beginning Male Driver.--Those male drivers who were members of the high school junior class during the 1967-68 school year. The time period for which this group was considered as beginning drivers was September 1, 1967, through August 31, 1970.

Family Supervision.--Any direction, advice, consultation, guidance, and permission given verbally,

written, or implied by a family or household member to aid or control the automobile operation of a beginning male driver.

Family Rapport.--Those family relationships, including communications, warmth, responsibilities, and activities which indicate a presence or absence of harmony or unity within the family unit.

Family Restrictions.--Those restrictions, rules, and/or guidelines placed by a family or household member upon the use of an automobile by a beginning male driver; possible limitations such as mileage, location, time of day, days of the week, nights per week, and number of times per week.

Automobile Availability.--An automobile that was available for possible use by a beginning male driver when he felt he had a need to drive.

Automobile Ownership.--The possession of an automobile primarily for the personal use of a beginning male driver, irrespective of the legal titleholder.

Automobile Usage.--The utilization of an automobile as measured by hours consumed driving, frequency of driving, and estimated mileage.

Organizational Preview

Chapter II reviews the literature relating to young drivers, family relationships, and traffic violation convictions. The design of the study will be found in Chapter III. The analysis of the data is presented in Chapter IV. Chapter V provides a summary of the study, along with the conclusions, discussion, and recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The available literature, pertaining to family supervision of beginning male drivers, was limited. A thorough search conducted at a major university library[1] and two libraries[2] specializing in collecting traffic safety literature revealed only two related studies specifically pertaining to family supervision of beginning drivers. In addition, numerous articles were found pertaining to the young driver, family relationships, and traffic convictions involving young drivers.

The first study compared the driver records of the parents with their son's driving record. The major finding Carlson and Klein reported was: "The positive correlation found between fathers' and sons' conviction incidence supports the hypothesis that driving behavior

---

[1]Michigan State University, East Lansing, Michigan.

[2]Highway Safety Research Institute Library, University of Michigan, Ann Arbor, Michigan; Highway Traffic Safety Library, Michigan State University, East Lansing, Michigan.

is learned more through familial than through institutional socialization and that delinquent familial socialization results in delinquent traffic behavior."[3]

The behavior of an individual upon our highways reflects his life style. The major influence that determines individual behavior patterns is the family. The authors explain:

> In addition to learning specific driving behavior through years of watching his father drive the family car, he acquires, during childhood and adolescence, the familial "life style." This includes not only attitudes toward authority, conformity, aggression, etc., but also his perception of himself, his relationship to the social environment, his ideas of what constitutes status and how he can achieve it, . . . his perception of the meaning of an automobile and hence the amount and kind of use he makes of it.[4]

The fact that driving and an individual's way of life is so integrated, the authors argue that driving becomes " . . . an extremely sensitive index of inadequate socialization. . . . "[5] The study concludes that the effectiveness of driver education, " . . . is likely to be effective only in so far as it is able to modify inadequate familial socialization. And this is a problem that education in general has not yet solved adequately."[6]

---

[3]W. L. Carlson and David Klein, "Familial vs. Institutional Socialization of the Young Traffic Offender," Journal of Safety Research (March, 1970), 13.

[4]Ibid., p. 14.

[5]Ibid., p. 15.

[6]Ibid., p. 24.

In the other related study, an investigation of the driving experience obtained by beginning drivers during the first thirty days after completing driver education was investigated. Counts[7] reports that only 22 per cent of the parents received any direction from the driver education teacher, as how they, the parents, could assist the child improve in driving ability.

It was also found that driving experience in heavier traffic or business areas was limited.[8] In addition, very few students received any driving experience during hours of darkness during the first thirty days after completing driver education.[9]

For organizational clarity, the review of literature has been divided into three sections: (1) young drivers, with emphasis upon maturity and driving experience, (2) youth and family relationships, with emphasis upon communications, warmth, responsibilities, activities, and restrictions, (3) young drivers and traffic violation convictions.

---

[7]James W. Counts, "A Study to Determine the Driving Experience of Youth From Ingham County High Schools During a Thirty Day Period Between Receiving a Driver Education Certificate and Being Able to Apply for a Michigan Driver's License" (unpublished Ph.D. thesis, Michigan State University, 1972), p. 172.

[8]Ibid., p. 174.

[9]Ibid., p. 177.

Young Drivers

The book titled, Is There A Teen-Age Driver in Your House?, asks a basic question concerning young drivers: "But what do the kids lack? Two Things. Things that not even money and their vaunted youthfulness can buy: Experience and Safe Attitudes."[10] It was the opinion of the author that parents have an obligation to help their youngster obtain driving experience and positive attitudes.

Writing about the inexperience of young drivers, Klein states: "If we regard violations and accidents as errors in the driving task, then the high accident rate that seems to occur immediately after licensing may be attributable entirely to inexperience and not to anything inherent in adolescence."[11]

A study[12] conducted in the Netherlands reported that inexperience and not age per se was responsible for the high accident rate of beginning drivers. Two

---

[10] L. E. Schlesinger, Is There A Teen-Age Driver in Your House? (New York: New American Library, Inc., 1967), p. 24.

[11] David Klein, "A Reappraisal of the Violation and Accident Data on Teen-Aged Drivers," Traffic Quarterly, October, 1966, p. 508.

[12] "A Study of the Influence of Age and Experience on Accident Involvement Rate," Road Safety Research Foundation (S.W.O.V.), Netherlands, 1965, cited by "Youth and Traffic Safety Education" (Washington, D.C.: National Transportation Safety Board, 1971), p. 3.

additional sources[13] also suggest that inexperience may be the cause of the high accident rate for beginning drivers.

Another possibility for the apparent high accident rate among beginning young drivers is suggested in the following quote from the study, "Youth and Traffic Safety Education":

> It is difficult to tell whether inexperience in driving or immaturity and exuberant attitudes of youth are more important from currently available data, particularly for the American scene. Presumably, both are important factors.[14]

Several additional sources also emphasize the importance of driving performance and attitudes. Mann writes: "The difference between those who try to drive properly and those who resent control and arrogantly drive as they please, appears to lie in their attitudes toward themselves and toward society."[15] Fourteen years ago, Mann urged driver educators to be cognizant of the beginning driver's maturity level. He stated that

---

[13]Henry G. Felsen, To My Son, The Teen-Age Driver (New York: Dodd, Mead and Co., 1964), p. 65; Ross A. McFarland and Roland C. Moore, "Youth and the Automobile," Value and Ideals of American Youth, ed. by Eli Ginzberg (New York: Columbia University Press, 1961), p. 182.

[14]National Transportation Safety Board, Youth and Traffic Safety Education, Report No. NTSB-STS-71-3 (Washington, D.C.: U.S. Department of Commerce, 1971), p. 3.

[15]William A. Mann, "The Family and the Teen-Age Driver" (East Lansing: Highway Traffic Safety Center, Michigan State University, April, 1972), p. 1. (Mimeographed.)

part of the teaching task was, " . . . to help the youngster understand their attitudes toward life and driving."[16]

Maturity is one of the reoccurring themes of the book written especially for teenage boys about driving. Henry Gregor Felsen offers several questions the young male driver may ask himself to determine his own maturity level.

> Your real test will come when the physical operation of the car is easy for you. Will you be alert enough, and aware enough, to notice and read the danger signs of road and traffic? More important will you be mature enough to act, so you will not be forced to react? Will you continue to be safe for others to meet on the road?
>
> I am sure you think you possess the necessary qualities of good judgment, alertness, common sense and humaneness to be a good driver. Most drivers think they do; the worst drivers are positive of it.[17]

Youth and Family Relationships

In reviewing the literature, it was discovered that two comprehensive youth studies[18] were recently

---

[16]William A. Mann, "Driver Education and the Teen-Age Driver" (East Lansing: Highway Traffic Safety Center, Michigan State University, 1958), p. 2. (Mimeographed.)

[17]Felsen, op. cit., pp. 64-65.

[18]Daniel Offer, The Psychological World of the Teen-Ager (New York: Basic Books, Inc., 1969), 286 pp; Gordon A. Sabine, When You Listen, This Is What You Can Hear, Special Report on Youth (Iowa City: The American College Testing Program, 1971), 149 pp.

completed. Although neither study dealt with young drivers specifically, both provide insight concerning youth and family relationships.

Offer's book, published in 1969, reported the results of an investigation by two psychiatrists who studied normal boys during their four years in high school. About 100 boys started the project, with 73 completing both the battery of tests and the series of one-hour interviews held every three months during their high school tenure. The results of this study are reported within this section.

The American College Testing Program (ACT) conducted Youthpoll in 1971, in an effort to determine the attitude, emotions, and feelings of youth. This survey provided over 1,600 college freshmen with the opportunity to respond to 103 open-end questions.

The following indicates the importance of effective communications within the family as expressed by one student responding to the Youthpoll questionnaire.

> All my life, I've liked to talk and when I tried to talk to my parents, they've turned me off. They've said that what I said either wasn't true, or they didn't understand it, or I talked too much. All I've wanted is to be listened to and not told that what I say is what they've heard already or don't care to hear. . . . [19]

Communications within the family is important to both the parent and the child. The results of ineffective

---

[19]Sabine, op. cit., p. 16.

communications often results in needless barriers to harmonious relationships. "What parents want for their youngsters and what the teen-agers want overlap a good deal."[20]

From the study of normal boys, Offer makes the following observation pertaining to family communications:

> We can, therefore, conclude that though there are many gaps between the generations, in a sample such as the one we have studied the gaps are small and there are always bridges over them. The bridges are made of open and flowing communication, a willingness to empathize with each other's emotional position, and a potential for growth through learning. Emotional security is vital in maintaining and developing the bridges from both sides.[21]

Another component of family relationship is the feeling of being accepted. Those youth who do not feel accepted within the family become the discipline problems in our schools and on our highways. The worst driver from each of 100 high schools in Michigan was identified as having emotional problems involving home relationships.[22] It is interesting to note the statements of two students who participated in the Youthpoll survey:

> A child needs love. Love takes time. Time is something everyone is always running out of. . . . Time is not something you find, or have naturally.

---

[20]Schlesinger, op. cit., p. 54.

[21]Offer, op. cit., p. 208.

[22]William A. Mann, "Building Attitudes for Safety" (East Lansing: Highway Traffic Safety Center, Michigan State University, September, 1960), p. 3. (Mimeographed.)

> It is something you make. You aren't going to make a teen-age son love you by buying him a car, or permitting pot parties, or being permissive. We need each other, not a shiny piece of steel. . . . [23]

Another student made the following statement: "With my own children, I won't think that as long as I give them money, I don't have to give them myself. . . . "[24] Although there is a desire by the youth to participate in activities with their parents or family members, it appears that this desire is not fulfilled. This position was verified in a study conducted for the Boy Scouts.[25]

The privilege of using the family automobile should be contingent upon the satisfactory performance of duties or responsibilities around the home according to three different writers.[26] Even though giving the impression of tolerating such a concept, youth actually desire the opportunity to prove that they are capable of handling responsibility. "We need to offer opportunities

---

[23]Sabine, op. cit., pp. 15-16.

[24]Ibid., p. v.

[25]Survey Research Center, University of Michigan, A Study of Adolescent Boys (New Brunswick, N.J.: Boy Scouts of America, 1965), p. 58.

[26]Haim G. Ginott, Between Parent and Teen-Ager (New York: Macmillan Co., 1969), p. 184; Mann, op. cit., p. 2; Schlesinger, op. cit., pp. 35, 77.

for responsible driving, while simultaneously setting clear limits and sensible regulations."[27]

Boys report that their strongest feeling of guilt is when they fail to meet obligations at home, since there is where they feel their greatest sense of responsibility.[28] The opinions of youth participating in Youthpoll implied that responsibility may be taught through a greater role in the decision-making process at home.

One student reports how he plans to teach his child responsibility: "I want them to have confidence in themselves, therefore I will let them make lots of decisions on their own."[29]

Felsen,[30] Klein,[31] and Schlesinger[32] all stress the importance of placing some type of limitations upon

---

[27]Ginott, op. cit.

[28]Offer, op. cit., p. 100.

[29]Sabine, op. cit., p. 27.

[30]Henry G. Felsen, To My Son, The Teen-Age Driver (New York: Dodd, Mead and Co., 1964), p. 25.

[31]David Klein, "A Reappraisal of the Violation and Accident Data on Teen-Aged Drivers," Traffic Quarterly, October, 1966, p. 508.

[32]Schlesinger, op. cit., pp. 57, 59.

the beginning driver, particularly while they are inexperienced. However, Counts[33] reported that only 22 per cent of the parents had received any information concerning their participation in providing experiences for their child during the early stages of driving. Smith[34] found that 41 per cent of 11th grade and 55 per cent of 12th grade males responded negatively when asked: "Have your parents set any limits on your use of the car?"

The importance of parental supervision is emphasized in the following statement: "How well your teen-ager drives depends on the amount of attention you give the task of supervision."[35] "I will be stricter with my children. Children and most teen-agers are happier if they have parental guidance."[36] According to over 90 per cent of the boys in Offer's study,[37] too little love, too much freedom, and parents who did not care about their children were the causes of juvenile delinquency in high school.

---

[33]Counts, op. cit., p. 172.

[34]Charles Edwin Smith, Use of the Automobile by High School Students (DeKalb, Ill.: Department of Industry and Technology, Northern Illinois University, 1968), p. 20.

[35]Schlesinger, op. cit., p. 84.

[36]Sabine, op. cit., p. 4.

[37]Offer, op. cit., p. 76.

Closely associated with parental control is the ownership of a motor vehicle by a young driver. "The minimum age for car ownership should be eighteen."[38] Two reasons given for not allowing a teenager to own an automobile are: "Since this is a most difficult period for parent-teenage relations, car ownership weakens parental control and most teenagers do not possess the maturity necessary for car ownership."[39]

Traffic Violation Convictions

"It was found that individuals who owned their own vehicles were more likely to have both accidents and violations."[40] The same study also reported:

> Ratings of "a little too lenient" or "much too lenient" (as opposed to "a little too strict," "much too strict," or neutral) were strongly associated with violations, though somewhat less for accidents. That is, lenient parents seemed to raise individuals who would have more violations than others (or, individuals who feel their parents were "too lenient" tend to have more violations).[41]

---

[38] Ginott, op. cit.

[39] Schlesinger, op. cit., p. 60.

[40] Stanley Schuman and others, The Unmarried Male Driver Under Twenty-Five (Ann Arbor: Highway Safety Research Institute, University of Michigan, 1966), p. 5.

[41] Ibid., p. 9.

A study conducted by the state of California[42] found that as the number of miles driven or traffic exposure increased among young drivers, the number of accidents and violations also increased. A similar finding was reported in Michigan.[43]

Summary

Literature pertaining to the initial driving experience of young drivers and their family's role in determining their driving behavior were reviewed. The chapter was divided into three sections, Young Drivers, Youth and Family Relationships, and Traffic Violation Convictions.

Attention was given to the subject of the young drivers lack of experience in the traffic environment and the maturity level necessary to operate efficiently. The responsibilities of parents in helping their child compensate for these deficiencies were also reviewed.

The opinions of youth indicated a need for effective communications within the family. The feeling of being accepted within the family was also highly valued by the youth.

---

[42]G. S. Ferdun and others, The Teen-Age Driver: An Evaluation of Age, Experience, Driving Exposure and Driver Training as They Relate to Driving Records (Sacramento: Department of Motor Vehicles, State of California, February, 1965), p. 22.

[43]Schuman, op. cit., p. 7.

The literature reviewed emphasized that the granting of privileges should be contingent upon proven responsibility by the youth. Also reviewed was the topic of parental responsibility in setting limitations upon the usage of the automobile.

The findings of this study are presented in Chapter IV. In Chapter V are the summary, conclusions, recommendations, and discussion of the study.

CHAPTER III

DESIGN OF THE STUDY

Hypothesis

This study was designed to determine what relationship exists between the reported family supervision of beginning male drivers and their traffic violation convictions.

The null hypothesis used in this study was that no significant difference exists in the reported family supervision provided for beginning male drivers with traffic violation convictions and beginning male drivers without traffic violation convictions.

The five sub-hypotheses stated in the null form are:

Sub-Hypothesis 1:

There is no significant difference between the reported family rapport of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 2:

There is no significant difference between the reported family restriction of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 3:

There is no significant difference between the reported automobile availability to beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 4:

There is no significant difference between the automobile ownership of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 5:

There is no significant difference between the reported automobile usage of beginning male drivers with and without traffic violation convictions.

Selection of the Sample

On March 21, 1968, all the junior and senior class members in attendance, at the two public high schools in Janesville, Wisconsin, participated in the Student Driving Survey. Further research, with a portion of the participants, was feasible because of the information obtained from this survey.

The population for this study included all the 247 junior males who held a Wisconsin probationary driver's license at the time they completed the Student Driving Survey.

Of the original population, nine members were eliminated because they were no longer a resident of Wisconsin or their current address was not available. On May 21, 1971, the 238 remaining members of the original

population were sent a letter requesting their participation in the study. A follow-up letter was sent to all members three weeks later.

The finalized sample selected for this study involved those members of the population who chose to participate after receiving two letters of request. This number totaled 105 individuals.

Sources of Data Collection

Data for this study were collected from three sources. The Family and Automobile Opinionnaire (FAO) (Appendix A) that was mailed to each subject in the Spring of 1971 was the first source. The second source of data was the Student Driving Survey (SDS) (Appendix B) which was completed by the subjects in March, 1968. The third source was a Driver Record Abstract obtained for each subject from the files of the Wisconsin Division of Motor Vehicles at Madison.

Family and Automobile Opinionnaire

The "Family and Automobile Opinionnaire" was developed during the Spring of 1971. Prior to that time, there was no satisfactory instrument available that could be administered through the mail and also measure the first four variables specified for this study. Before formulating the questions contained in this survey, three

studies[1] were reviewed that had sought the opinions of adolescents concerning family relationships. In addition, interviews were held with Dr. William A. Mann, Professor of Counseling and Personnel Services, Michigan State University, and Mr. Gene A. Miller, Counselor at University Hospital, University of Wisconsin and former Graduate Fellow, Family Study Center, University of Minnesota. Their assistance was sought in developing a survey instrument to measure family relationships and automobile usage among young drivers.

Approximately forty questions were developed and presented to both the guidance committee for this study and members of the Highway Traffic Safety Center, Michigan State University. Upon the recommendation of these experts thirty-two questions were selected for use in this survey.

Arrangements were made with Mr. Fred Cosway of Genesee Community College, Flint, Michigan, for the author to administer a pilot test of the survey to a class of males ranging in age from 18 to 24 years. After completing the survey the investigator interviewed the participants.

---

[1]Daniel Offer, The Psychological World of the Teen-Ager (New York: Basic Books, Inc., 1969), p. 286; Gordon A. Sabine, When You Listen, This Is What You Can Hear, Special Report on Youth (Iowa City: The American College Testing Program, 1971), p. 149; Survey Research Center, University of Michigan, A Study of Adolescent Boys (New Brunswick, N.J.: Boy Scouts of America, 1955), p. 183.

Editorial revisions, based on the pilot test, reduced the final survey instrument to twenty-nine questions (see Appendix A).

Student Driving Survey

The "Student Driving Survey" was designed in 1968 to answer five basic questions. They were:

1. What portion of the twenty-four-hour period do students do most of their driving?
2. To what extent do students ride as passengers in automobiles driven by young drivers?
3. Do students feel they need supervised training in night driving?
4. To what extent are students prepared, prior to driving without adult supervision?
5. Do parents control the student's use of the automobile?

A pilot test of the survey instrument was conducted with the junior class at Notre Dame High School in DeKalb, Illinois, during February of 1968. Upon completion of the pilot test, revisions were conducted. These included the combining, eliminating, and rewriting of various items, thus reducing the number of responses solicited from the students to a total of fifty-five items.

Permission was received to conduct the survey at Craig and Parker Senior High Schools, both located in Janesville, Wisconsin. On March 21, 1968, each homeroom teacher for a junior or senior class received written instructions for the distribution, administration, and collection of the survey. Responses that measured the degree of automobile usage (see Appendix B, Items 36, 40-48) were used in determining the fifth variable of the present study.

Driver Record Abstracts

In the state of Wisconsin, the action taken by the Courts concerning moving traffic violation citations are recorded in a central filing system located at the Division of Motor Vehicles, in Madison. Permission was granted to obtain an abstract of the individual driving record for each subject included in this study.

Administration of the Survey

On May 21, 1971, a letter (see Appendix C) requesting participation in this study was sent to 238 subjects. In order to assure the integrity of the responses, the letter explained who was conducting the study and the purpose of the study. The subjects were provided with a pen, a FAO survey form, and a self-addressed postage-paid envelope for returning their survey. Three weeks later, a second request (see

Appendix D) was sent to all 238 subjects. Based upon the two letters a total of 105 individuals responded.

Since the individual was not required to identify himself, for tabulation purposes, the survey forms were color coded in order to identify the violation grouping.

Procedure for Data Analysis

The responses given by the subjects on the Family and Automobile Opinionnaire and the Student Driving Survey were recorded on Fortran Coding Forms in preparation for key punching the data cards.

The design for this study identified five dependent variables: (1) Family Rapport, (2) Family Restrictions, (3) Automobile Availability, (4) Automobile Ownership, and (5) Automobile Usage. The independent variable was recorded traffic violation convictions.

The responses used in determining dependent variables 1 through 4 came from the Family and Automobile Opinionnaire. The fifth dependent variable was determined from information supplied by the subjects on the Student Driving Survey. Several items from the SDS were used to determine if the sample was representative of the population. Identification of the violator and non-violator groups was determined from Driver Record Abstracts data.

Family rapport incorporated the responses from (FAO) questions 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, and 16.

The recorded values on questions 2, 7, 8, 13, and 14 were adjusted so that they could be combined with the remaining values of family rapport. Therefore, a low score would indicate good family rapport and a high score would indicate poor family rapport.

Family restrictions comprised the responses to (FAO) questions 3, 6, 9, 12, 15, and 17. A low score represents strict family control of adolescent automobile usage and a high score indicates little control.

The questions pertaining to automobile availability were asked in two parts. This variable included the responses given to the second part of the following questions 18, 19, 20, 21, and 22.

Automobile ownership was determined from (FAO) question 24. The higher the response, the longer the period of time an automobile was owned by the respondent.

Automobile usage was determined by adding the numerical values given to (SDS) questions 36, 40-48. Therefore a higher total value indicated increased automobile usage.

To determine if the sample was truly representative of the population, several items of available data for both groups were analyzed. T-statistics were computed to ascertain if the two groups were significantly different. Items 49, 50, and 51 from the SDS, along with the traffic violation variable were selected for analysis from the information available.

Computer data cards were punched for each subject that participated in all phases of the study. Each data card contained the average or total value for each dependent variable and recorded information concerning violation or non-violation grouping.

Computer data control cards were programmed to yield a one-way multivariate analysis of variance and correlation coefficients on the CDC 3600 Computer and frequency distributions, means, and percentage analysis for the various classifications on the CDC 6500 Computer.

Upon the recommendation of the Office of Research Consultation, School of Education, Michigan State University, the Finn Multivariate analysis of variance computer program was selected. This program, developed by Jeremy Finn, State University of New York at Buffalo, is capable of obtaining the combined effects of inter-relationships between dependent variables without conducting numerous univariate tests. A .05 level of significance was chosen to determine the acceptance or rejection of the null hypotheses.

Summary

The null hypothesis for this study was that no significant difference exists in reported family supervision between traffic violators and non-violators. Family rapport, family restrictions,

automobile availability, automobile ownership, and automobile usage were used to determine family supervision.

The sub-hypotheses stated in the null form indicated no significant difference between beginning male drivers with and without traffic violations and the reported family rapport, family restrictions, automobile availability, automobile ownership, and automobile usage.

The sample for this study were 105 males who chose to participate in two phases of the study. All were juniors in high school during the 1967-68 school year. Subjects completing the Family and Automobile Opinionnaire (FAO) in 1971 and the Student Driving Survey (SDS) in 1968 provided the information used in this study. Additional information was also obtained from the official driver records for each subject.

All data were prepared for computer processing. Statistical treatment of the data included one-way multivariate analysis of variance, correlation coefficients, frequency distributions, means, and percentage analysis. The level of significance was set at .05 for this study.

Reported in the next chapter are the results of the statistical analysis. The summary, conclusions, recommendations, and discussion are found in Chapter V.

CHAPTER IV

ANALYSIS OF DATA

This chapter contains results of the data analysis. The multivariate test to determine acceptance or rejection of the hypothesis is presented. In addition, the analysis of each of the five dependent variables to determine acceptance or rejection of the five sub-hypotheses is also presented.

The original population for this study totaled 247. Nine members were eliminated from possible sample selections because they were no longer residents of Wisconsin. The 238 remaining members of the population were sent two letters soliciting their cooperation and participation in this study. All 105 members who chose to participate were included in the sample and the analysis of the data.

Preparation of Data for Statistical Analysis

The responses given by the subject on the Family and Automobile Opinionnaire, the Student Driving Survey, and violation information from the Driver Record Abstracts

were recorded on Fortran Coding Forms in preparation for key punching the data cards. Those items, from the two surveys, that were recorded on data cards were FAO-1 - 25 and SDS, 36, 40 - 50.

Control cards for the computer were programmed to yield a frequency distribution, mean, standard deviation, and percentage analysis for each item recorded. In addition computer data control cards were programmed to analyze the data using the Finn multivariate analysis of variance. This program yields a one-way analysis of variance and correlation coefficients for each dependent variable.

Results of the Statistical Analysis

Driving Record abstracts were obtained for all 238 subjects of the population. Therefore, it was possible to place each subject in one of two violation classifications, (1) no recorded traffic violation convictions, and (2) one or more recorded traffic violation convictions.

Data relative to participation in this study is presented by violation classification in Table 4.1. Examination of the data indicated that 50 per cent of the non-violators participated, while only 37 per cent of the violators cooperated with the study. The sample size of 105 is 44 per cent of the possible population.

TABLE 4.1.--Participation in the study by non-violator and violator classification

Groups	Non-Violators		Violators		Totals	
	N	%	N	%	N	%
Population	130	100	108	100	238	100
Respondents-Sample	65	50	40	37	105	44

Percentages are based upon the possible total for each classification.

Table 4.2 shows the size of the groupings in relation to the total population. The respondent and non-respondent groups without violations, each constitute 27.31 per cent of the total population. The responding violators represent 16.86 per cent of the total population. The remaining 28.57 per cent of the total population are non-responding violators.

In Table 4.3, a comparison of the violators and non-violators is made for the population, respondents, and non-respondents. The non-violators comprise 62 per cent of the sample and 54 per cent of the population. Studying the violator classification, indicates under representation in the sample when compared to the percentage of violators in the total population.

Seven different t-tests were conducted (see Appendix E) to determine if the sample was representative of the population. Four tests compared reported

TABLE 4.2.--Classification of the population

Groups	Non-Violators		Violators		Totals	
	N	%	N	%	N	%
Population	130	54.62	108	44.37	238	100.
Respondents-Sample	65	27.31	40	16.86	105	44.11
Non-Respondents	65	27.31	68	28.57	133	55.88

All percentages are based upon N = 238.

TABLE 4.3.--Percentage comparison of population, sample and non-respondents

Groups	Non-Violators		Violators		Totals	
	N	%	N	%	N	%
Population	130	54.62	108	45.37	238	100.00
Respondents-Sample	65	61.92	40	38.09	105	100.00
Non-Respondents	65	48.87	68	51.12	133	100.00

violations, car ownership, car access, and parental limitations, for non-participants and the sample. Two tests compared the sample violation group with the non-respondent violators. One test compared the non-violation respondents and non-respondents.

Six of the seven tests showed the sample was not significantly different from the remaining population. The one test, measuring car ownership, proved significantly different. However, the test of car ownership for the sample violation group compared with the non-respondent violation group proved not significantly different. The non-violation respondents and non-respondents were also found not significantly different when comparing car ownership. As a result of the seven t-tests conducted, it was concluded that the sample was in fact representative of the population.

The design of this study identified five dependent variables: (1) Family Rapport, (2) Family Restrictions, (3) Automobile Availability, (4) Automobile Ownership, and (5) Automobile Usage. The responses used in measuring variables one through four came from the Family and Automobile Opinionnaire. The fifth variable was measured using data from the Student Driving Survey.

Family Rapport

The following questions from the Family and Automobile Opinionnaire were used to determine family rapport:

1. How often did you attend public events, such as church, school, sporting, and movies, with family members?
2. I had a difficult time living up to my parents' expectations of me.
4. I felt that I was included in making family decisions.
5. With what frequency did you discuss news events, such as government, human interest, and/or sports with other family members?
7. I had the feeling that my parents were never satisfied with me.
8. I had the feeling that my parents were never satisfied with my actions.
10. In making personal decisions, I sought the opinions of family members prior to reaching a final decision.
11. I was expected to perform certain responsibilities within the operation of our household.

13. I felt that my parents were too lenient with me.

14. I felt that my parents did not want me within their sight.

16. I felt that I could depend upon my family when I was having difficulty at school, work, or with my friends.

The values on questions 2, 7, 8, 13, and 14 were recorded in the opposite order from their appearance on the survey form. If a respondent selected always, the recorded value was five and never was recorded as one. The adjustment was made so that all the questions used in family rapport could be combined. Therefore, a low score indicated good family rapport and a high score indicated poor family rapport. Table 4.4 displays the results for each of the Family Rapport items.

Presented in Table 4.5 are the results of the test to determine if a significant difference existed between violators and non-violators when combining the mean scores of the eleven family rapport items. The contribution of each item in determining the family rapport variable was reflected in the assigned beta weights. The critical value of the f-statistic is 1.91 with 11 and 93 degrees of freedom. The resulting f-ratio of 1.02 is less than the critical value. Therefore no

TABLE 4.4.--Combined responses given by the violators and non-violators for family rapport questions of the family and automobile opinionnaire

Family and Automobile Opinionnaire Questions	Non-Violators		Violators	
	Mean	S.D.	Mean	S.D.
1--How often did you attend public events . . . with family members?	3.00	.93	3.35	.76
2--I had a difficult time living up to my parents expectations of me.	2.29	.99	2.27	1.13
4--I felt that I was included in making family decisions.	2.52	.77	2.92	1.14
5--With what frequency did you discuss news events . . . with other family members?	2.55	.88	2.60	1.21
7--I had the feeling that my parents were never satisfied with me.	1.73	.98	2.05	1.06
8--I had the feeling that my parents were never satisfied with my actions.	2.10	.93	2.37	1.12
10-In making personal decisions I sought the opinions of family members prior to . . . decision.	2.90	.96	3.05	1.13
11-I was expected to perform certain responsibilities within the operation of our household.	2.35	.83	2.22	1.04
13-I felt that my parents were too lenient with me.	2.01	.89	2.07	1.02
14-I felt that my parents did not want me within their sight.	1.35	.69	1.47	.71
16-I felt that I could depend upon my family when I was having difficulty at school, work . . .	2.06	1.15	2.15	1.18
Grand Mean	2.26		2.42	

Possible Responses: 1 = Always, 3 = Sometimes, 5 = Never

TABLE 4.5.--One-way MANOVA of the eleven family rapport item and the violation and non-violation groups (N = 105)

Multivariate Test of Equality of Mean Vectors
Multivariate F-Statistic of 1.02
With 11 and 93 Degrees of Freedom
Level of Significance P Less Than .43

Family and Automobile Opinionnaire Questions	Between MS	Univariate F-Statistic	P Less Than
1--How often did you attend public events . . . with family members?	3.03	3.94	.04
2--I had a difficult time living up to my parents expectations of me.	.00	.00	.93
4--I felt that I was included in making family decisions.	4.00	4.62	.03
5--With what frequency did you discuss news events . . . with other family members?	.05	.05	.82
7--I had the feeling that my parents were never satisfied with me.	2.40	2.32	.13
8--I had the feeling that my parents were never satisfied with my actions.	1.76	1.72	.19
10-In making personal decisions I sought the opinions of family members prior to . . . decision.	.50	.47	.49
11-I was expected to perform certain responsibilities within the operation of our household.	.41	.48	.48
13-I felt that my parents were too lenient with me.	.08	.09	.75
14-I felt that my parents did not want me within their sight.	.36	.73	.39
16-I felt that I could depend upon my family when I was having difficulty at school, work, . . .	.19	.14	.70

Degrees of Freedom for hypothesis = 1

Degrees of Freedom for Error = 103

significant difference existed between the reported family rapport of violators and non-violators as measured in this study.

Also presented in Table 4.5 are the univariate f-tests for each of the eleven items of family rapport. The critical value for the univariate f-test is 3.94 with 1 and 103 degrees of freedom and a P value of .05 or less. The data indicate that F.A.O. question one and four meet the criteria for acceptance.

Table 4.6 presented a correlation matrix of the eleven family rapport items. Examination of the data permits further investigation of the interrelationship between the family rapport items.

There were fifty-five possible intercorrelations and twenty-five exceed the .195 critical value.

The highest correlation was between questions seven and eight. Both of these questions relate to how the subjects perceive his parents' feelings about himself and his actions.

Family Restrictions

The measurement of family restrictions was determined by combining the scores for the following (FAO) questions:

3. When using a family automobile my parents knew my intended destination.

TABLE 4.6.--Sample correlation matrix for the eleven family rapport variables

FAO Questions	1	2	4	5	7	8	10	11	13	14	16
1	*										
2	12	*									
4	21	21	*								
5	23	05	14	*							
7	02	44	25	23	*						
8	10	36	25	16	69	*					
10	21	08	36	24	17	17	*				
11	05	-12	05	06	-11	-08	18	*			
13	-05	16	-11	09	31	27	-01	09	*		
14	-04	19	00	17	46	33	09	03	20	*	
16	05	23	41	22	45	36	33	10	02	28	*

* = 1.00 Correlation

Decimal points have been omitted for clarity of the table.

6. When using a family automobile my parents knew the purpose of my intended automobile usage.

9. When using a family automobile my parents set mileage limitations.

12. When using a family automobile my parents set a time limit for my return.

15. When using a family automobile my parents restricted my driving by area such as within the city limits, the county, or other geographic boundaries.

17. My use of a family automobile was limited to the following number of times per week.

A low score represents strict family control of adolescent automobile usage and a high score indicates little control. Table 4.7 presents the data used to analyze family restrictions.

The results of the multivariate analysis of variance conducted for the family restriction items is found in Table 4.8. The beta weights assigned to each of the six family restriction items were weighed to represent the contribution of the item to the overall criterion.

The results of this was a f-value of 1.7 with less than .12 for the significance level. The critical values for this test were .05 significance level and a

TABLE 4.7.--Combined responses given by the violators and non-violators for family restriction questions of the family and automobile opinionnaire

Family and Automobile Opinionnaire Questions	Non-Violators		Violators	
	Mean	S.D.	Mean	S.D.
3--When using a family automobile my parents knew my intended destination.	1.96	.74	2.42	1.10
6--When using a family automobile my parents knew the purpose of my intended automobile usage.	1.95	.69	2.30	.99
9--When using a family automobile my parents set mileage limits.	4.33	1.07	4.45	1.17
12-When using a family automobile my parents set a time limit for my return.	3.27	1.06	3.17	1.48
15-When using a family automobile my parents restricted my driving area . . . geographic boundaries.	3.75	1.18	3.77	1.32
17-My use of a family automobile was limited . . . per week.	4.24	1.27	3.95	1.75
Grand Mean	3.26		3.37	

Possible Responses: 1 = Always, 3 = Sometimes, 5 = Never

Question 17, possible responses were 1 - 7 or more.

TABLE 4.8.--One-way MANOVA of the six family restriction variables and the violation and non-violation groups (N = 105)

Multivariate Test of Equality of Mean Vectors
Multivariate F-Statistic of 1.70
With 6 and 98 Degrees of Freedom
Level of Significance P Less Than .12

Family and Automobile Opinionnaire Questions	Between MS	Univariate F-Statistic	P Less Than
3--When using a family automobile my parents knew my intended destination.	5.14	6.32	.01
6--When using a family automobile my parents knew the purpose of my intended automobile usage.	2.96	4.41	.03
9--When using a family automobile my parents set mileage limits.	.30	.24	.62
12-When using a family automobile my parents set a time limit for my return.	.25	.16	.68
15-When using a family automobile my parents restricted my driving area . . . geographic boundaries.	.01	.00	.93
17-My use of a family automobile was limited . . . per week.	2.17	.99	.32

Degrees of Freedom for Hypothesis = 1

Degrees of Freedom for Error = 103

f-statistic of 2.20 or larger. The resulting values of this test indicate that no significant difference existed between family restrictions of violators and non-violators as measured by these six items.

It is possible to assess the relative strength of each of the family restriction items by studying the results of the univariate tests presented in Table 4.8. In order for the f-statistic to be significant at the .05 level the critical value is 3.94.

Questions three and six dealing with parental knowledge of the destination and purpose of the automobile usage are two items that showed a significant difference between violators and non-violators.

In order to determine the interrelationships between the six family restriction items fifteen different correlation coefficients were calculated. The results are shown in the correlation matrix presented in Table 4.9. Two family restriction items, parental knowledge of destination and purpose of automobile usage, showed a .75 correlation. Of the fifteen possible correlations, eight showed values exceeding the .195 critical value.

Automobile Availability

Information concerning automobile availability was solicited from the subjects by asking the following question.

TABLE 4.9.--Sample correlation matrix for the six family restrictions variables

FAO Questions	3	6	9	12	15	17
3	*					
6	75	*				
9	-03	-02	*			
12	24	19	36	*		
15	08	04	45	39	*	
17	14	19	11	16	-02	*

*= 1.00 Correlation

Decimal points have been omitted for clarity of the table.

Questions 18-22

Please circle a yes or no response if the following family or household members had their own automobile while you were 16, 17, 18 years of age. Also circle a yes or no in the second column to indicate if you were allowed to drive that automobile.

	Family member had their own automobile			Were you allowed to drive that automobile		
Father	18-1.	Yes	No	18-2.	Yes	No
Mother	19-1.	Yes	No	19-2.	Yes	No
Brother(s)	20-1.	Yes	No	20-2.	Yes	No
Sister(s)	21-1.	Yes	No	21-2.	Yes	No
Other household members	22-1.	Yes	No	22-2.	Yes	No

The total positive responses to 18-2, 19-2, 20-2, 21-2, and 22-2 were added together to determine this variable. The results presented in Table 4.10 indicated the non-violators had 1.76 automobiles available. The violation group reported 2.15 automobiles within their family were available for their use.

Data presented in Table 4.11 indicate there was a significant difference in automobile availability for the beginning male driver with and without traffic violation convictions. The univariate test produced an f-statistic of 4.84 which exceeded the 3.94 critical value. This f-statistic had a .03 level of significance.

TABLE 4.10.--Combined responses given by the violators and non-violators for the automobile availability questions of the family and automobile opinionnaire

Questions	Non-Violators		Violators	
	Mean	S.D.	Mean	S.D.
FAO 18-2, 19-2, 20-2, 21-2, 22-2	1.76	.76	2.15	1.00

TABLE 4.11.--Univariate F-Test of the automobile availability variable and the violation and non-violation groups (N = 105)

Univariate Test of Equality of Mean Vectors
Univariate F-Statistic of 4.84
With 1 and 102 Degrees of Freedom
Level of Significance P Less Than .03

Automobile Ownership

Automobile ownership was determined by the responses given by the subjects to the following questions:

23. Did you have your own automobile, regardless of whose name appeared on the title?

24. How many months would you estimate you had that automobile between your 16th and 19th birthdays?

The response given for question twenty-four was used in determining automobile ownership and is presented in Table 4.12. The higher the response, the longer the period of time an automobile was owned by the subject.

TABLE 4.12.--Combined responses given by the violators and non-violators for the automobile ownership question of the family and automobile opinionnaire

Question	Non-Violators		Violators	
	Mean	S.D.	Mean	S.D.
FAO 24	3.14	3.42	4.55	3.10

Presented in Table 4.13 are the results of a univariate f-test conducted to determine if a significant difference existed between violators and non-violators with respect to automobile ownership. This test had 1 and 102 degrees of freedom, therefore, the critical value

TABLE 4.13.--Univariate F-test of the automobile ownership variable and the violation and non-violation groups (N = 105)

Univariate Test of Equality of Mean Vectors Univariate F-Statistic of 4.47 With 1 and 102 Degrees of Freedom Level of Significance P Less Than .03

at the .05 level of significance was a 3.94 for the f-value. The resulting f-statistic was 4.47 and a p value of .03 or less. This test indicated there was a significant difference between the automobile ownership of violators and non-violators.

Automobile Usage

The following questions were used to examine the reported automobile usage. They were:

36. During a normal week, about how many nights would you drive a car?

40. When driving at night, your usual destination is about how many miles from your home?

41. About how many miles would you estimate that you drive on a typical night of driving?

42. When driving at night, about what time do you usually leave home?

43. When driving at night about what time do you usually return home on a week night?

44. When driving at night, about what time do you usually return home on a week-end night?

45. About how many hours per week would you estimate that you drive a car?

46. About how many hours per week would you estimate that you drive a car during hours of darkness?

47. Approximately, how many miles per week would you estimate that you drive?

48. Approximately, how many miles per month would you estimate that you drive?

Automobile usage was determined by adding the numerical values given to (SDS) questions 36, 40, -48. Therefore the higher total value indicated increased automobile usage. The combined scores for the violation and non-violation group are presented in Table 4.14.

Table 4.15 presents the results of the multivariate and univariate f test relating to automobile usage. The critical value for the f-statistic is 1.94 with 10 and 98 degrees of freedom. The multivariate analysis of variance produced an f-statistic of 2.17 and a p value of .02 or less. This test indicates there is a significant difference between the reported automobile usage of violators and non-violators.

Further analysis of the individual items measuring automobile usage is possible by studying the

TABLE 4.14.--Combined responses given by the violators and non-violators for the automobile usage questions of the student driving survey

Student Driving Survey Questions	Non-Violators		Violators	
	Mean	S.D.	Mean	S.D.
36-During a normal week, about how many nights would you drive a car?	3.89	2.07	4.55	2.09
40-When driving at night, your usual destination is about how many miles from your home?	1.58	1.18	2.55	1.82
41-About how many miles would you estimate that you drive on a typical night of driving?	1.72	.76	2.20	.96
42-When driving at night, about what time do you usually leave home?	2.81	1.17	2.32	1.36
43-When driving at night about what time do you usually return home on a week night?	2.26	.97	2.47	1.15
44-When driving at night about what time do you usually return home on a week-end night?	3.44	1.04	4.02	1.32
45-About how many hours per week would you estimate that you drive a car?	3.66	2.23	4.15	2.57
46-About how many hours per week would you estimate that you drive a car during hours of dark?	2.03	1.43	2.55	1.69
47-Approximately, how many miles per week would you estimate that you drive?	3.00	2.12	3.95	2.41
48-Approximately, how many miles per month, would you estimate you drive?	3.12	2.36	3.92	2.58
Combined Total	27.32		32.50	

Possible Responses 1 - 9

TABLE 4.15.--One-way MANOVA of the ten automobile usage variables and the violation and non-violation groups (N = 105)

Multivariate Test of Equality of Mean Vectors
Multivariate F-Statistic of 2.17
With 10 and 94 Degrees of Freedom
Level of Significance P Less Than .02

Student Driving Survey Questions	Between MS	Univariate F-Statistic	P Less Than
36-During a normal week, about how many nights would you drive . . .	10.71	2.46	.11
40-When driving at night, your usual destination is about how many miles from your home?	23.07	10.81	.001
41-About how many miles would you estimate that you drive on a typical night of driving?	5.63	7.90	.006
42-When driving at night, about what time do you usually leave home?	5.95	3.82	.05
43-When driving at night about what time do you usually return home on a week night?	1.12	1.03	.31
44-When driving at night about what time do you usually return home on a week-end night?	8.29	6.14	.01
45-About how many hours per week would you estimate that you drive a car?	5.90	1.04	.30
46-About how many hours per week would you estimate that you drive a car during hours of dark?	6.67	2.81	.09
47-Approximately, how many miles per week would you estimate that you drive?	22.34	4.46	.03
48-Approximately, how many miles per month, would you estimate you drive?	15.92	2.64	.10

Degrees of Freedom for Hypothesis = 1

Degrees of Freedom for Error = 103

univariate f-statistics present in the lower portion of Table 4.15. The univariate test had 1 and 103 degrees of freedom, therefore the critical value for the f-statistic was 3.94.

Examination of the data presented reveals that questions 40, 41, 44, and 47 produced f-statistics that exceeded the critical value. Question 42 produced a f-statistic that was approaching the critical value.

Presented in Table 4.16 is a correlation matrix showing the r values of the forty-five possible correlations between automobile usage measurement items. The data presented indicated that thirty-one correlations exceed the .195 critical value of the .05 level of significance.

Testing of the Hypotheses

The null hypothesis for this study was that no significant difference exists in the reported family supervision provided for beginning male drivers with traffic violation convictions and beginning male drivers without traffic violation convictions.

The five sub-hypotheses stated in the null form are:

Sub-Hypothesis 1:

There is no significant difference between the reported family rapport of beginning male drivers with and without traffic violation convictions.

TABLE 4.16.--Sample correlation matrix for the ten automobile usage variables

SDS Questions	36	40	41	42	43	44	45	46	47	48
36	*									
40	07	*								
41	08	35	*							
42	-05	-01	-06	*						
43	06	06	27	-26	*					
44	20	15	18	-08	26	*				
45	54	25	26	-19	30	34	*			
46	39	43	19	-15	25	41	67	*		
47	45	25	41	-21	21	25	59	60	*	
48	38	18	43	-14	22	14	46	45	86	*

* = 1.00 Correlation

Decimal points have been omitted for clarity of the table.

Sub-Hypothesis 2:

There is no significant difference between the reported family restriction of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 3:

There is no significant difference between the reported automobile availability of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 4:

There is no significant difference between the automobile ownership of beginning male drivers with and without traffic violation convictions.

Sub-Hypothesis 5:

There is no significant difference between the reported automobile usage of beginning male drivers with and without traffic violation convictions.

The interaction of the five family supervision variables and the violation classifications were used to determine acceptance or rejection of the hypothesis. A one-way multivariate analysis of variance was conducted to test the hypothesis. The results of this MANOVA appear in Table 4.17. The null hypothesis will be rejected if the resulting f-statistic exceeds the critical value. When 5 and 98 degrees of freedom are present an f-statistic of 2.30 becomes the critical value.

Examination of the data indicates that the interaction of the five family supervision variables

TABLE 4.17.--One-way MANOVA of the five family supervision variables and the violation and non-violation groups (N = 105)

Multivariate Test of Equality of Mean Vectors
Multivariate F-Statistic of 2.41
With 5 and 98 Degrees of Freedom
Level of Significance P Less Than .04

Variable	Between MS	Univariate F-Statistic	P Less Than
Family Rapport	.60	2.58	.11
Family Restrictions	.26	.64	.42
Automobile Availability	3.63	4.84	.03
Automobile Ownership	48.89	4.47	.03
Automobile Usage	658.41	6.17	.01

Degrees of Freedom for Hypothesis = 1

Degrees of Freedom for Error = 102

produced an f-statistic 2.41, which is larger than the critical value. The level of confidence for this test produced a p value of .04 or less. Since both of these statistics exceed the critical limits the null hypothesis was rejected. It is, therefore, concluded that there is a significant difference between the reported family supervision of beginning male drivers with traffic violation convictions and beginning male drivers without traffic violation convictions.

Table 4.17 also presents the results of the statistical investigation of the individual dependent

variables. When 1 and 98 degrees of freedom are present, the critical value for the f-statistic is 3.94 at the 0.05 level of significance. When the univariate f-statistic exceeds the critical value the null sub-hypothesis will be rejected.

The first sub-hypothesis for this study was that no significant difference existed between the reported family rapport of beginning male drivers with and without traffic violation convictions.

Two f-statistics were calculated which permit the testing of this sub-hypothesis for acceptance or rejection. The f-statistic of 1.02 resulted when the eleven family rapport items were given beta weights representative of their contribution to the family rapport variable. The critical value for this test was 1.91 (see Table 4.5, p. 42).

The univariate f-statistic of 2.58 (see Table 4.17) resulted when the eleven family rapport items were given equal beta weights. For this test, 3.94 f-statistic was the critical value.

The results of these two univariate f-tests indicate acceptance of the first null sub-hypothesis. Statistically, family rapport as measured in this study showed no significant difference between beginning male drivers with and without traffic violation convictions.

The second sub-hypothesis was that no significant difference existed between the reported family restrictions of violators and non-violators.

The data presented in Table 4.17 indicate an f-statistic of .64 with the critical value of 3.94. In this test the six family restriction items were given equal beta weights.

When the family restriction items were given weighted beta values the resulting f-statistic was 1.7 which did not exceed the 2.20 critical value. The data for this test are found in Table 4.8, page 47.

The results of both of these f-tests require that the second null sub-hypothesis be accepted. Therefore, it was concluded that reported family restrictions as measured in this study show no significant difference between beginning male drivers with and without traffic violation convictions.

The third sub-hypothesis was that no significant difference existed between the automobile availability of violators and non-violators.

In Table 4.17, the data show the univariate f-statistic 4.84 for automobile availability exceeds the critical value of 3.94. The level of significance for this test was .03 or less.

These statistics exceed the critical limits of this study for rejecting the null sub-hypothesis. It was concluded that there was a significant difference of automobile availability between the beginning male driver with and without traffic violation convictions.

The fourth sub-hypothesis was that no significant difference existed between automobile ownership of violators and non-violators.

The results of the univariate f-test concluded to determine if a significant difference existed between violators and non-violators with respect to automobile ownership are found in Table 4.17. The critical value for this test was 3.94 f-statistic and .05 level of significance. The data presented show that the f-test produced a 4.47 and .03 level of significance for automobile ownership.

The fourth sub-hypothesis that no significant difference existed between automobile ownership of violators and non-violators was rejected.

The fifth sub-hypothesis was that no significant difference existed between automobile usage of violators and non-violators.

Two separate f-tests were conducted to determine if this sub-hypothesis should be accepted or rejected. The multivariate f-statistic of 2.17 was reported in Table 4.15, when each of the automobile usage factors

were weighted by their contribution to the total variable. The critical value for this test was 1.94.

Table 4.17 presents the univariate f-statistic of 6.17 when each of the ten automobile usage factors were given equal beta weights. The critical value for this test was 3.94.

The fifth null sub-hypothesis was rejected based upon the results of these two f-tests. It was concluded that the reported automobile usage of beginning drivers was significantly different for beginning male drivers with and without traffic violation convictions.

Further investigation of the interaction of the five dependent variables was made possible by determining the correlations between the variables. Presented in Table 4.18 is the correlation matrix which displays the relationship between the variables. The critical value of r at .05 level equals .195 or greater.

There were ten possible intercorrelations between the five dependent variables. Three intercorrelations exceed and two are close to the .195 critical value.

Examination of the data reveals that the r value of .41 between automobile ownership and automobile usage was the highest correlation between variables. The next two highest correlations were between family restrictions and other variables. Family restrictions and automobile

usage show a .31 level of correlation. An r value of .25 was reported in the intercorrelation between family restrictions and automobile usage.

TABLE 4.18.--Sample correlation matrix for the five family supervision variables

	Family Rapport	Family Restric-tions	Automobile Availa-bility	Automobile Ownership	Auto Usage
Family Rapport	1.0				
Family Restric-tions	-.021	1.0			
Automobile Availa-bility	.017	.106	1.0		
Automobile Ownership	-.083	.257	.190	1.0	
Automobile Usage	.103	.314	.184	.414	1.0

Critical value of r at .05 level = .195 or greater.

Two automobile availability correlations approach the .195 critical value. Automobile availability and ownership correlate at the .190 level. While automobile availability and automobile usage report a .184 correlation value.

Negative relationships existed between family rapport when correlated with family restrictions and

correlated with automobile ownership. However, both of these negative correlations were statistically small.

The data presented in Table 4.18 indicated that interrelationships did exist between the five dependent variables. It was concluded that the five dependent variables were not independent of each other.

Summary

Data collected from the subjects and Driver Record Abstracts were recorded on data cards for computer processing. Analysis of the data included a frequency distribution, mean, standard deviation, and percentage analysis for each item of data collected. The dependent variables were analyzed using the Finn multivariate analysis of variance.

The sample of 105 subjects represented a 44 per cent participation rate. Seven t-tests were conducted to determine if the sample was representative of the population. It was concluded that the sample did represent the population.

The null hypothesis for this study was that no significant difference exists in the reported family supervision provided for beginning male drivers with traffic violation convictions and beginning male drivers without traffic violation convictions.

The null hypothesis was rejected because the one-way MANOVA produced a f-statistic of 2.41 and at a level of significance of .04 or less. The critical values were 2.30 for the f-value and .05 for the level of significance.

The first null sub-hypothesis that there is no difference between the reported family rapport of beginning male drivers with and without traffic violation convictions was not rejected.

The second null sub-hypothesis that there is no difference between the reported family restrictions of beginning male drivers with and without traffic violation convictions was not rejected.

The third null sub-hypothesis that there is no difference between the reported automobile availability of beginning male drivers with and without traffic violation conviction was rejected.

The fourth null sub-hypothesis that there is no difference between the reported automobile ownership of beginning male drivers with and without traffic violation convictions was rejected.

The fifth null sub-hypothesis that there is no difference between the reported automobile usage of beginning male drivers with and without traffic violation convictions was rejected.

A univariate f-test indicated that reported family rapport and family restrictions of violators and non-violators was not significantly different. The other three dependent variables, automobile availability, automobile ownership, and automobile usage, were significantly different for violators and non-violators.

The correlation coefficients conducted to determine the interrelationships between the five dependent variables indicated that the variables were not independent.

The next chapter presents a summary of the study. Also presented are the conclusions drawn from this study as well as recommendations for further research.

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

The concluding chapter of this study will present the following: (1) summary of the method and findings; (2) conclusions resulting from the investigation; (3) discussion of the conclusions; (4) recommendations for further research.

Summary

It was the purpose of this study to determine what relationship exists between reported family supervision and traffic violation convictions of beginning male drivers.

There were five variables used to determine the type of reported family supervision that was provided for beginning male drivers. These variables included:

(1) Family rapport, including communications, warmth, responsibilities, and activities;

(2) Family restrictions upon automobile usage;

(3) Automobile availability to the beginning male driver;

(4) Automobile ownership by the beginning male driver;

(5) Automobile usage by the beginning male driver.

The population for this study included 247 male members of the junior class who on March 21, 1968 were attending a public high school in Jamesville, Wisconsin and also held a Wisconsin probationary driver's license.

The sample selected for this study involved those members of the population who chose to participate after receiving two letters of request. The letters were sent in the Spring of 1971 and 105 individuals responded.

The sources of data used in this investigation were two surveys, (1) the Family and Automobile Opinionnaire and (2) the Student Driving Survey. Additional data were obtained for each subject from his Driver Record Abstract.

Data from the three sources of information were punched on data-processing cards for tabulation and analysis by computer.

In order to determine if the sample was representative of the population, seven t-tests were made comparing the respondents and non-respondents. The

Finn Multivariate analysis of variance computer program was used for the statistical treatment of the data.

The Findings

This investigation found that:

1. There was no significant difference between the sample (respondents) and non-responding subjects.
2. When using a one-way MANOVA to determine the combined effect of the five dependent variables, a significant difference existed between the non-violators and violators.
3. A multivariate and a univariate f-statistic for family rapport indicated no significant difference between violators and non-violators.
4. There was no significant difference indicated by the multivariate and univariate f-statistic for family restrictions of violators and non-violators.
5. Violators and non-violators did differ significantly, as indicated by the univariate f-statistic for the automobile availability variable.
6. The univariate f-statistic for automobile ownership did indicate a significant difference between violators and non-violators.

7. There was a significant difference between violators and non-violators as indicated by the multivariate and univariate f-statistics for the variable, automobile usage.

8. A correlation coefficient of .42 was found to exist between the variable automobile ownership and automobile usage.

9. The variables of family restrictions and automobile usage correlate at .31.

10. The r value of .25 was found to exist between family restrictions and automobile ownership.

Conclusions

The following conclusions were drawn as a result of the findings in this study.

1. The sample selected for this study was representative of the population.

2. The null hypothesis that no significant difference exists in the reported family supervision provided for beginning male drivers with traffic violation conviction and beginning male drivers without traffic violation convictions was rejected.

3. The Family and Automobile Opinionnaire did not distinguish any significant difference between the reported family rapport of violators and non-violators.

4. The Family and Automobile Opinionnaire did not distinguish any significant difference between the reported family restrictions of violators and non-violators.

5. There was a significant difference in automobile availability between the violators and non-violators.

6. There was a significant difference in automobile ownership between the violators and non-violators.

7. There was a significant difference in automobile usage between the violators and non-violators.

8. It was concluded that the five variables of family supervision are interrelated.

Discussion

The extreme difficulty in attempting to measure family relationships pertaining to driving was evident from the conception to the conclusion of this study. This was true because of the complex nature of individuals and the ever-changing relationships within the family.

The findings of the study produced some conclusions that were expected and some that were not. The conclusions of the family rapport variable did not appear as expected. Particularly interesting to the investigator are the differing family rapport f-statistics obtained from the univariate f-test (see Table 4.17) and the multivariate f-test (see Table 4.5). Part of the difference was due to the beta weights given to the family rapport items, in determining these f-tests.

It is difficult to explain why the resulting f-statistics for family rapport were not significant when the intercorrelation of the family rapport items were as strong and numerious as presented in Table 4.6. Three possible explanations for the results of the family rapport variable are: (1) the instrument used in measuring family rapport may not have been adequate, (2) the time delay in soliciting this information (approximately one year after graduation from high school), and (3) the reluctance of individuals to admit undesirable home situations.

It was reported that when 229 males took the Mann Inventory, less than 5 per cent selected the response rarely or never when asked "My parents (are) (were) reasonable in their relations with me." A similar question asked was, "I (live) (lived) in a home that

(is) (was) happy." Only 23 per cent selected rarely or never in response to this question.[1]

The results of the family restrictions variable are considerably different than was expected at the beginning of this investigation. Several possibilities could explain the reason for the outcome of this sub-hypothesis test.

The lack of consistency in parental restrictions, pertaining to the automobile, may have caused the subjects difficulty in interpreting and responding to the questions for this variable. According to the data presented in Table 4.8, the questions pertaining to parental knowledge of the destination and purpose of the intended automobile usage were the only significant items measuring family restrictions. This raises a question of redundancy, if parents knew the purpose and destination of the intended automobile usage, mileage and geographical limitations would have already been considered in the granting of permission to use the vehicle.

Although the family restriction variable was not statistically significant, it should be noted (Table 4.18) that this variable was highly interrelated with the other family supervision variables. This indicates

---

[1]Statement by William A. Mann, personal interview, July 24, 1972.

that family restrictions do have an integral part in family supervision of beginning male drivers.

The three variables that did prove to be statistically significant, automobile availability, automobile ownership, and automobile usage concur with the findings of other studies relating to driving exposure. The majority of studies investigating driving exposure report that increased usage tends to increase the number of violations.

The investigator would like to comment about the decision concerning the placement of the subjects in the two violation groups. It can be argued that acquiring one violation could be the result of chance. Therefore, two or more violations should be used to determine if a violation pattern has developed.

In designing the study, the decision to classify violators as those subjects with one or more violations, resulted in dividing the population into approximately two equal groups. When the sample had been selected, further investigation determined that those subjects in the sample with two or more violations were too few to feasibly alter the design of the study.

Although the findings of this study do not show a significant difference for all of the five family supervision variables, it does show that they are

interrelated. Therefore, it appears feasible to give consideration to the recommendations presented in the next section.

Recommendations for Further Research

In Chapter II of this study, numerous sources referred to the interrelationship between an individual's philosophy of life and the way in which he operated an automobile. Additional knowledge is needed concerning the way an individual perceives himself, his family, and society.

As a result of this investigation, it was evident that driving an automobile and family relationships are important in the past, present, and future lives of young males. Therefore, the following recommendations were made:

(1) That a study be conducted to determine the specific areas of family supervision that have the greatest influence upon driving behavior of the beginning driver;

(2) That a longitudinal study of family relationships should be conducted, including the use of written instruments and personal interviews with the subjects;

(3) That a study should be conducted to determine the effects of parental supervision and automobile usage during the beginning males early driving experience;

(4) That a longitudinal study to measure family restrictions should be conducted concurrently with the young drivers' early driving years;

(5) That a study to determine the social, economic, and familial effects of car ownership of a teenage family member should be conducted.

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

Books

Cole, Luella, and Hall, Irma M. Psychology of Adolescence. 7th ed. New York: Holt, Rinehart and Winston, 1970.

Downie, N. M., and Heath, R. W. Basic Statistical Methods. New York: Harper and Row, Publishers, 1970.

Edwards, Allen L. Statistical Methods. New York: Holt, Rinehart and Winston, Inc., 1967.

Felsen, Henry Gregor. To My Son, The Teen-Age Driver. New York: Dodd, Mead and Co., 1964.

Garrett, Henry E., and Woodworth, R. S. Statistics in Psychology and Education. New York: David McKay Company, Inc., 1966.

Ginott, Haim G. Between Parent and Teen-Ager. New York: Macmillan Co., 1969.

Ginzberg, Eli, ed. Values and Ideals of American Youth. New York: Columbia University Press, 1961.

Griffen, G. M. The Teenager and Safe Driving. New York: Richards Rosen Press, Inc., 1968.

Haddon, W., Jr.; Suchman, E. A.; and Klein, D., eds. Accident Research Methods and Approaches. New York: Harper and Row, Publishers, 1964.

McCandless, Boyd R. Adolescents: Behavior and Development. Hinsdale, Ill.: Dryden Press, 1970.

McFarland, R. A., and Moore, R. C. "Youth and the Automobile." Values and Ideals of American Youth. Edited by Eli Ginzberg. New York: Columbia University Press, 1961.

Offer, Daniel. The Psychological World of the Teen-Ager. New York: Basic Books, Inc., 1969.

Purdy, K. W. Young People and Driving: The Use and Abuse of the Automobile. New York: John Day Company, 1967.

Schlesinger, L. E. Is There A Teen-Age Driver in Your House? New York: New American Library, Inc., 1967.

Smith, Sally Liberman. Nobody Said It's Easy. New York: Macmillan, 1965.

Survey Research Center, University of Michigan. A Study of Adolescent Boys. New Brunswick, N.J.: Boy Scouts of America, 1965.

Thorndike, Robert L., and Hagen, Elizabeth. Measurement and Evaluation in Psychology and Education. New York: John Wiley and Sons, Inc., 1961.

Publications of the Government and Other Organizations

Adolescent Violator Study. Progress Report, Driver Behavior Research Project. Washington, D.C.: George Washington University.

Chalfant, M. W. "Motivating the Adolescent Driver for Responsible Driving." Paper read at the Council on the Automobile and Public Health, Liberty Mutual Insurance Co., November 21, 1963.

Ellingstad, U. W.; Hagan, R. E.; and Kimball, K. A. An Investigation of the Acquisition of Driving Skill. Technical Report Number 11. Pierre, S.D.: Research and Planning Division, South Dakota Department of Highways, April, 1970.

National Safety Council. Accident Facts. 1961 ed. Chicago: National Safety Council, 1971.

National Transportation Safety Board. Youth and Traffic Safety Education. Report Number NTSB-STS-71-3. Washington, D.C.: U.S. Department of Commerce, 1971.

Parent Adolescent Study. Progress Report, Driver Behavior Research Project. Washington, D.C.: George Washington University.

Quenault, S. W. Driver Behavior--Safe and Unsafe Drivers. Road Research Laboratory Report #L.R. 70. Harmondsworth, England: Ministry of Transport, 1967.

Reese, John H. The Legal Nature of a Driver's License. Washington, D.C.: Automotive Safety Foundation, 1965.

Sabine, Gordon A. When You Listen, This Is What You Can Hear. Special Report on Youth. Iowa City: The American College Testing Program, 1971.

Schuman, Stanley, et al. The Unmarried Male Driver Under Twenty-Five. Ann Arbor: Highway Safety Research Institute, University of Michigan, 1965.

Journals and Periodicals

Asher, W., and Dobson, B. "The Prediction of Automobile Accidents Following the Senior Year in High School." Behavioral Research in Highway Safety, Fall, 1970, pp. 180-95.

Brecher, Ruth and Edward. "Youth in the Driver's Seat." Parents Magazine, May, 1959, pp. 50, 51, 77, 78.

Carlson, W. L., and Klein, D. "Familial vs. Institutional Socialization of the Young Traffic Offender." Journal of Safety Research (March, 1970), 13-25.

Cook, K. E., and Fergusen, W. S. "What Do Teen-Agers Really Think About Traffic Safety?" Traffic Quarterly, April, 1968, pp. 237-43.

Dameron, C. Frazer, and Andreoli, Clifford. "Youthful Drivers as Perceived by Teenagers and Parents." Traffic Digest and Review, January, 1967, pp. 8-13.

Klein, David. "A Reappraisal of the Violation and Accident Data on Teen-Aged Drivers." Traffic Quarterly, October, 1966, pp. 502-10.

Kraus, A. S., et al. "Pre-Driving Identification of Young Drivers With High Risk of Accidents." Journal of Safety Research (June, 1970), 55-66.

Levonian, E. "Personality Characteristics of Juvenile Driving Violators." Accident Analysis and Prevention, I, No. 1 (1969), 9-16.

MacDowell, Gene. "Teacher-Parent Co-operation Means Quality Traffic Safety Education." California Journal of Traffic Safety Education (March, 1970), 21.

Marx, B. S., and Schlesinger, L. E. "A Group Discussion Manual for Improving the Attitudes of Young Drivers." Traffic Digest and Review, May, 1965, pp. 15-18.

Mitchell, John B. "The Family Teaches, Too." Childhood Education, March, 1961, pp. 310-12.

O'Dowd, Michael. "Driver Ed Is Not Enough." The Allstate Motor Club Magazine, Discovery, Autumn, 1970, pp. 36-39.

Peck, R. C., and Coppin, R. S. "The Prediction of Accident Involvement Using Concurrent Driver Record Data." Traffic Safety Research Review, June, 1967, pp. 34-41.

Pelz, D. C., and Schuman, S. H. "What Is the Dangerous Age for Young Drivers?" Traffic Safety, August, 1970, pp. 24, 25, 35, 36.

Schumann, S. H., and Pelz, D. C. "A Field Trial of Young Drivers: An Epidemiological Approach in Michigan." Archives of Environmental Health, September, 1970, pp. 462-67.

_____ and _____. "Young Male Drivers and the Spring Epidemic." Documenta Geigy: Man on Wheels, 1970.

Schumann, S. H., et al. "Young Male Drivers: Impulse Expression, Accidents, and Violation." American Medical Association Journal, XII, No. 12

_____. "Surveillance of Fatal Motor Vehicle Accidents in Michigan, Involving Young Drivers, Utilizing Time Series Analysis of Police Records." Accident Analysis and Prevention, March, 1971, pp. 315-34.

Waller, P. F. "The Youthful Driver: Some Characteristics and Comparisons." Behavioral Research in Highway Safety, Fall, 1970, pp. 143-54.

Unpublished Materials

Carlson, W. L. "Identification of the Problem Driver From Driver Records." Ann Arbor: Highway Safety Research Institute, January, 1968.

_____. "Induced Exposure Revisited." HIT Lab Report, November, 1970.

Carrol, P. S. "The Meaning of Driving Exposure." HIT Lab Report. Ann Arbor: Highway Safety Research Institute, April, 1971.

Counts, James W. "A Study to Determine the Driving Experience of Youth From Ingham County High Schools During a Thirty Day Period Between Receiving a Driver Education Certificate and Being Able to Apply for a Michigan Driver's License." Unpublished Ph.D. thesis, Michigan State University, 1972.

Covert, William Howard. "Relationships Between Self-Concepts of the Young Driver and Ratings of Behavior by Driver Education Instructors and the Mann Inventory." Unpublished Ph.D. thesis, Michigan State University, 1972.

Dunn, L. W. "The Development of an Instrument to Measure Knowledge of Traffic Safety Concepts Found to Differentiate Between Violators and Non-Violators." Unpublished Ph.D. thesis, Michigan State University, 1963.

Emery, Sister Marie Therese. "A Study of Certain Factors Related to the Patterns of Driving, Accidents and Violation Rates of 436, 17 and 18 year old Licensed Drivers From Two Lansing Catholic Schools." Unpublished Ph.D. thesis, Michigan State University, 1969.

Ferdun, G. S., et al. "The Teen-Age Driver: An Evaluation of Age, Experience, Driving Exposure and Driver Training as They Relate to Driving Records." Sacramento: Department of Motor Vehicles, State of California, February, 1965.

Hall, W. K. "An Emperical Analysis of Accident Data Using Induced Exposure." HIT Lab Report. Ann Arbor: Highway Safety Research Institute, September, 1970.

Heath, E. D. "The Relationship Between Driving Records, Selected Personality Characteristics and Biographical Data of Traffic Offenders and Non-Offenders." Unpublished Ph.D. thesis, New York University, 1957.

Hubert, W. J. "Personality Differences and Similarities Between Offenders and Non-Offender Air Force Motor Vehicle Operators." Unpublished PH.D. thesis, New York University, 1960.

Klein, David. "Statement Made on February 24, 1967." Given before the Secretary of Health, Education, and Welfare's Ad Hoc Committee on Traffic Safety.

Levonian, E. "Prediction of Accident and Violations Using Non-driving Predictors." Paper read to the American Association of Motor Vehicle Administrators Research Conference and Workshop, Sacramento, California, April 5, 1966.

Mann, William A. "Building Attitudes for Safety." East Lansing: Highway Traffic Safety Center, September, 1960. (Mimeographed.)

_____. "Difficulties in Changing Human Behavior." Speech given at the National Safety Congress, Chicago, 1968.

_____. "Driver Education and the Teen-Age Driver." East Lansing: Highway Traffic Safety Center, 1958. (Mimeographed.)

_____. "The Family and the Teen-Age Driver." East Lansing: Highway Traffic Safety Center, April, 1972. (Mimeographed.)

_____. "The Goals and Problems of Traffic Safety Education." East Lansing: Highway Traffic Safety Center. (Mimeographed.)

_____. "The Nature of the Problem Driver." East Lansing: Highway Traffic Safety Center, May, 1971. (Mimeographed.)

_____. "Personal Attitude Survey." East Lansing: Highway Traffic Safety Center. (Mimeographed.)

_____. "The Psychological Foundations of Traffic Safety Education." East Lansing: Highway Traffic Safety Center. (Mimeographed.)

Mann, William A. "Teenage Personality As Related to Driving Behavior." East Lansing: Highway Traffic Safety Center. (Mimeographed.)

O'Day, J. "Drinking Involvement and Age of Young Drivers in Fatal Accidents." HIT Lab Report. Ann Arbor: Highway Safety Research Institute, October, 1970.

Pelz, D. C. "Driver Attitudes and Other Motivational Factors." Paper read at the Driver Behavior-Cause and Effect Symposium, sponsored by the Automobile Insurance Industry, 1968.

_____, and Schuman, S. H. "Dangerous Young Drivers." HSRI Research Report No. 2. Ann Arbor: Highway Safety Research Institute, June, 1968.

_____, and _____. "Exposure Factors in Accidents and Violations of Young Drivers." Ann Arbor: Highway Safety Research Institute, April, 1971.

_____, and _____. "Longitudinal Study of Young Drivers: A Progress Report." Ann Arbor: Highway Safety Research Institute, December, 1968.

_____, and _____. "Young Drivers: Road Behavior and Motivations." Paper presented to Traffic Accident Congress, New York, May 29, 1969.

"The Problem of the Young Driver." Bloomington, Ill.: State Farm Insurance Co., 1967.

Schuman, S. H., et al. "The Unmarried Driver Under Twenty-Five: A Pilot Survey of a High-Risk Driver." Ann Arbor: Highway Safety Research Institute, November, 1966.

_____. "Young Male Drivers: A Survey of Their Attitudes, Accidents, Violations and Risk Taking." Ann Arbor: Highway Safety Research Institute, 1966.

Schuster, D. H. "Evaluation of Brief Family Therapy For Problem Drivers." Ames, Iowa: Iowa State University, July, 1967.

_____. "Prediction of Follow-Up Driving Accident and Violations." Los Angeles: Southern California University, August, 1965.

Smith, Charles Edwin. "Use of the Automobile by High School Students." DeKalb, Ill.: Department of Industry and Technology, Northern Illinois University, 1968.

APPENDICES

APPENDIX A

FAMILY AND AUTOMOBILE OPINIONNAIRE

FAMILY AND AUTOMOBILE OPINIONNAIRE

Listed below are statements and questions concerning your family and the use of an automobile. You are asked to give the response that best reflects your opinion for that period of time between your 16th and 19th birthdates.

We would like your opinion for each statement, if you find a statement for which you do not wish to respond, please omit it and continue on to the next. Since you are being asked for your opinion, there are no right or wrong answers. Thank you for sharing your opinions with me.

Section I FAMILY AND AUTOMOBILE USAGE

HOW TO RECORD RESPONSES - The responses for the first seventeen statements are given on a continuum to represent always to never on a 1 to 5 scale. You are asked to circle the number or response that best represents your experiences.

1. How often did you attend public events, such as church, school, sporting, and movies, with family members?

1	2	3	4	5
Always		Sometimes		Never

2. I had a difficult time living up to my parents expectations of me.

1	2	3	4	5
Always		Sometimes		Never

3. When using a family automobile my parents knew my intended destination.

1	2	3	4	5
Always		Sometimes		Never

4. I felt that I was included in making family decisions.

1	2	3	4	5
Always		Sometimes		Never

5. With what frequency did you discuss news events, such as government, human interest, and/or sports with other family members?

1	2	3	4	5
Always		Sometimes		Never

6. When using a family automobile my parents knew the purpose of my intended automobile usage.

1	2	3	4	5
Always		Sometimes		Never

7. I had the feeling that my parents were never satisfied with me.

1	2	3	4	5
Always		Sometimes		Never

8. I had the feeling that my parents were never satisfied with my actions.

1	2	3	4	5
Always		Sometimes		Never

9. When using a family automobile my parents set mileage limitations.

1	2	3	4	5
Always		Sometimes		Never

10. In making personal decisions I sought the opinions of family members prior to reaching a final decision.

1	2	3	4	5
Always		Sometimes		Never

11. I was expected to perform certain responsibilities within the operation of our household.

1	2	3	4	5
Always		Sometimes		Never

12. When using a family automobile my parents set a time limit for my return.

1	2	3	4	5
Always		Sometimes		Never

13. I felt that my parents were too lenient with me.

1	2	3	4	5
Always		Sometimes		Never

14. I felt that my parents did not want me within their sight.

1	2	3	4	5
Always		Sometimes		Never

15. When using a family automobile my parents restricted my driving by area such as within the city limits, the county, or other geographic boundaries.

1	2	3	4	5
Always		Sometimes		Never

16. I felt that I could depend upon my family when I was having difficulty at school, work, or with my friends.

1	2	3	4	5
Always		Sometimes		Never

17. My use of a family automobile was limited to the following number of times per week.

0	1	2	3	4	5	6	7 or more

Section II AUTOMOBILE AVAILABILITY

Please circle a yes or no response if the following family or household members had their own automobile while you were 16, 17, 18 years of age. Also circle a yes or no in the second column to indicate if you were allowed to drive that automobile.

	Family member had their own automobile		Were you allowed to drive that automobile	
Father	18-1. Yes	No	18-2. Yes	No
Mother	19-1. Yes	No	19-2. Yes	No
Brother(s)	20-1. Yes	No	20-2. Yes	No
Sister(s)	21-1. Yes	No	21-2. Yes	No
Other household members	22-1. Yes	No	22-2. Yes	No

Did you have your own automobile, regardless of whose name appeared on the title? If no, skip question 24, go on to question 25.

23. Yes No

If yes, how many months would you estimate you had that automobile between your 16th and 19th birthdays.

24-1. 1-4 months	24-4. 13-16 months	24-7. 25-28 months
24-2. 5-8 months	24-5. 17-20 months	24-8. 29-32 months
24-3. 9-12 months	24-6. 21-24 months	24-9. 33-36 months

Approximately, how many miles per week would you estimate that you drive an automobile?

25-1. less than 25	25-4. 75 to 100 miles	25-7. 175 to 200 miles
25-2. 25 to 50 miles	25-5. 100 to 125 miles	25-8. 200 to 225 miles
25-3. 50 to 75 miles	25-6. 125 to 150 miles	25-9. over 225 miles

Section III

Provided below is space for you to describe how you would improve the "driver education process". If you need additional space feel free to use additional paper and return it with your questionnaire.

26. What suggestions would you offer to improve driver education in high school?

27. What was your opinion of the road test that you took to obtain your drivers license?

28. When you are a parent, what will you do to help your son become a good driver?

29. Are there any additional comments you would like to make?

APPENDIX B

STUDENT DRIVING SURVEY

STUDENT DRIVING SURVEY

This survey is being conducted by Charles Edwin Smith of Northern Illinois University in co-operation with your school. The information obtained from this survey will help driver education instructors to plan the types of learning experiences, when students are learning to drive, that will be most useful to them after they receive their license. We realize that some of the questions you will not know the exact answer. However, please select the response or responses to each question that in your opinion is the most accurate in your own individual situation. None of the surveys will be read by anyone other than the researcher. Thank you, for your co-operation.

DIRECTION: Please circle the number in front of the response or responses that you think are most appropriate for that question. The questions are numbered and designed for IBM scoring. A sample question is printed following the directions.

99. Which of the following cities are located in Wisconsin?

99-1. Chicago	(99-3.) Madison	99-5. New York
(99-2.) Green Bay	(99-4.) Milwaukee	99-6. St. Louis

Name_____ _____ - 19___
(Print) Last First Initial Name of School Date of Birth

_____ _____ 9-1. Female 9-2. Male
Address (street or route) City Age

10. Should a beginning driver have some supervised practice in driving at night, before driving alone after dark? 10-1. Yes 10-2. No

11. About how many hours per week would you estimate that you ride in a car, driven by someone under 21 years of age?

11-1. less than 3 hours	11-4. 10 to 12 hours	11-7. 19 to 21 hours
11-2. 4 to 6 hours	11-5. 13 to 15 hours	11-8. 22 to 24 hours
11-3. 7 to 9 hours	11-6. 16 to 18 hours	11-9. over 24 hours

12. About how many hours per week would you estimate that you ride in a car at night, driven by someone under 21 years of age?

12-1. less than 3 hours	11-4. 10 to 12 hours	11-7. 19 to 21 hours
12-2. 4 to 6 hours	11-5. 13 to 15 hours	11-8. 22 to 24 hours
12-3. 7 to 9 hours	11-6. 16 to 18 hours	11-9. over 24 hours

13. Do you have a drivers license or an instruction permit? 13-1. Yes 13-2. No
If you answered Yes, continue on to question 14.
If you answered No, please stop here.

14. If you have an instruction permit, what is the number? ___ ___ ___ ___ ___ ___ ___ ___

15. How long have you had your instruction permit or how long did you drive with an instruction permit before you received your license?

15-1. less than 1 week	15-4. 1 to 2 months	15-7. 7 to 8 months
15-2. 1 to 2 weeks	15-5. 3 to 4 months	15-8. 9 to 10 months
15-3. 3 to 4 weeks	15-6. 5 to 6 months	15-9. over 10 months

16-29. If you have a license, what is the number? ___ ___ ___ ___-___ ___ ___ ___ -___ ___ ___ ___-___ ___

30. About how many months have you had your license?

30-1. less than 3 months	30-4. 10 to 12 months	30-7. 19 to 21 months
30-2. 4 to 6 months	30-5. 13 to 15 months	30-8. 22 to 24 months
30-3. 7 to 9 months	30-6. 16 to 18 months	30-9. over 24 months

31. After being licensed, about how long was it before you had use of the car without the supervision of a licensed driver in the seat to your right?

31-1. same day	31-4. 3 to 4 weeks	31-7. 5 to 6 months
31-2. less than 1 week	31-5. 1 to 2 months	31-8. 7 to 8 months
31-3. 1 to 2 weeks	31-6. 3 to 4 months	31-9. over 8 months

32. Was the first time you drove the car without supervision during daylight hours? 32-1. Yes 32-2. No

33. After being licensed, about how long did you drive before you had use of the car at night without supervision?

33-1. same day	33-4. 3 to 4 weeks	33-7. 5 to 6 months
33-2. less than 1 week	33-5. 1 to 2 months	33-8. 7 to 8 months
33-3. 1 to 2 weeks	33-6. 3 to 4 months	33-9. over 8 months

34. Did you have any previous driving experience at night with supervision, before you drove alone at night? 34-1. Yes 34-2. No

35. During a normal week, approximately what percentage of your driving is done during hours of darkness?

35-1. less than 10%	35-4. 30 to 40%	35-7. 60% to 70%
35-2. 10% to 20%	35-5. 40% to 50%	35-8. 70% to 80%
35-3. 20% to 30%	35-6. 50% to 60%	35-9. over 80%

36. During a normal week, about how many nights would you drive a car?

36-1. One	36-3. Three	36-5. Five	36-7. Seven
36-2. Two	36-4. Four	36-6. Six	36-8. None

37. If you use the car at night, which night or nights would you most likely be using it?

37-1. Sunday	37-3. Tuesday	37-5. Thursday	37-7. Saturday
37-2. Monday	37-4. Wednesday	37-6. Friday	

38. For which of the following, reason or reasons, do you drive at night?

38-1. Attending meetings	38-4. Social group-mixed	38-7. Work
38-2. School events	38-5. Social group-same sex	
38-3. Social-dating	38-6. Driving to work	38-8. Other reasons

39. When driving at night, about how many passengers do you usually have riding with you?

39-1. One	39-3. Three	39-5. Five	39-7. Seven
39-2. Two	39-4. Four	39-6. Six	39-8. None

40. When driving at night, your usual destination is about how many miles from your home?

40-1. less than 5 miles	40-4. 15 to 20 miles	40-7. 30 to 35 miles
40-2. 5 to 10 miles	40-5. 20 to 25 miles	40-8. 35 to 40 miles
40-3. 10 to 15 miles	40-6. 25 to 30 miles	40-9. over 40 miles

41. About how many miles would you estimate that you drive on a typical night of driving?

41-1. less than 10 miles	41-4. 50 to 70 miles	41-7. 110 to 130 miles
41-2. 10 to 30 miles	41-5. 70 to 90 miles	41-8. 130 to 150 miles
41-3. 30 to 50 miles	41-6. 90 to 110 miles	41-9. over 150 miles

42. When driving at night, about what time do you usually leave home?

42-1 6:00 to 6:30 P.M.	42-3. 7:00 to 7:30 P.M.	42-5. 8:00 to 8:30 P.M.
42-2. 6:30 to 7:00 P.M.	42-4. 7:30 to 8:00 P.M.	42-6. 8:30 to 9:00 P.M.

43. When driving at night about what time do you usually return home on a week night?

43-1. 8:00 to 9:00 P.M.	43-3. 10:00 to 11:00 P.M.	43-5. 12:00 to 1:00 A.M.
43-2. 9:00 to 10:00 P.M.	43-4. 11:00 to 12:00 P.M.	43-6. After 1:00 A.M.

44. When driving at night, about what time do you usually return home on a week-end night?

44-1. 9:00 to 10:00 P.M.	44-3. 11:00 to 12:00 P.M.	44-5. 1:00 to 2:00 A.M.
44-2. 10:00 to 11:00 P.M.	44-4. 12:00 to 1:00 A.M.	44-6. After 2:00 A.M.

45. About how many hours per week would you estimate that you drive a car?

45-1. less than 3 hours	45-4. 10 to 12 hours	45-7. 19 to 21 hours
45-2. 3 to 6 hours	45-5. 13 to 15 hours	45-8. 22 to 24 hours
45-3. 7 to 9 hours	45-6. 16 to 18 hours	45-9. over 24 hours

46. About how many hours per week would you estimate that you drive a car during hours of darkness?

46-1. less than 3 hours	46-4. 10 to 12 hours	46-7. 19 to 21 hours
46-2. 3 to 6 hours	46-5. 13 to 15 hours	46-8. 22 to 24 hours
46-3. 7 to 9 hours	46-6. 16 to 18 hours	46-9. over 24 hours

47. Approximately, how many miles per week would you estimate that you drive?

47-1. less than 25	47-4. 75 to 100 miles	47-7. 175 to 200 miles
47-2. 25 to 50 miles	47-5. 100 to 125 miles	47-8. 200 to 225 miles
47-3 50 to 75 miles	47-6. 125 to 150 miles	47-9. over 225 miles

48. Approximately, how many miles per month would you estimate that you drive?

48-1. less than 100	48-4. 300 to 400 miles	48-7. 600 to 700 miles
48-2. 100 to 200 miles	48-5. 400 to 500 miles	48-8. 700 to 800 miles
48-3. 200 to 300 miles	48-6. 500 to 600 miles	48-9. over 800 miles

49. Do you own a car? 49-1. Yes 49-2. No

50. Do you have access to a car whenever you want to use one? 50-1. Yes 50-2. No

51. Have your parents set any limits on your use of the car? 51-1. Yes 51-2. No

52. Did you take the behind-the-wheel instruction through the driver education program at your school? 52-2. Yes 52-2. No

53. How many moving violations do you have?

53-1. One	53-3. Three	53-5. Five	53-7. Seven
53-2. Two	53-4. Four	53-6. Six	53-8. Eight

54. How many accidents have you, as a driver, been involved in? (even though you were not at fault and regardless of the seriousness)

54-1. One	54-3. Three	54-5. Five	54-7. Seven
54-2. Two	54-4. Four	54-6. Six	54-8. None

55. Any comments about this survey that you wish to make, please feel free to turn this page over and write them on the back. Thank you for your co-operation.

APPENDIX C

LETTER

P.O. Box 1545
East Lansing, Mich. 48823
May 21, 1971

Dear Sir:

In 1964-66, I taught Social Science and Driver Education in the Janesville Schools. It is quite possible that you may have been in one of my classes. The reason I am writing to you at this time is that I would like your help in a research study that I am conducting. It should take about 15 minutes and you are the only source that can supply the information that I am seeking, so I hope you will cooperate. Let me explain the study and how you may help.

In the past many parents have asked should they allow their son to obtain a driver's license. In an effort to help young men and their parents to reach an agreeable solution to this question, I have sought opinions from both young men and their parents. Since you have faced this situation, I would like to ask you how you and your parents answered this question.

The enclosed form has questions or statements to which you may respond by circling a number to represent your response. In replying, I would like to know how you currently feel concerning your driving experiences during the period from September 1967 (the start of your Junior year in high school) to last September (1970). The last four questions ask for your opinion concerning topics related to driving.

I am enclosing a complimentary pen for your use in completing this opinionnaire. The form can be returned in the postage paid, self-addressed envelope by placing the envelope in any mailbox.

Although it is not part of the study, if you would like to include a note telling of your present vocational activities, I would be interested in hearing from you.

Thank you.

Sincerely,

Charles Edwin Smith

CES:JJ
Encls.

APPENDIX D

LETTER

P.O. Box 1545
East Lansing, Michigan 48823
June 11, 1971

Dear Sir:

I am writing to express my gratitude for your participation in the research project that I am conducting. The response to my request of three weeks ago has exceeded my expectations and I was pleased to receive personal notes from so many of you.

Several of you asked about my current status. Since 1968, I have been associated with the driver education teacher preparation program at Stout State University. During the past year I have been on leave from my position so that I could do further graduate studies at Michigan State University.

Because of my work with student teachers, I designed the project in which I asked you to participate. When I return to the classroom in September, I plan to use a summary of the data with my students in an effort to help them become more effective in working with students and parents.

For those who have not returned their opinionnaire, I would urge you to do so. It is not necessary that you sign the forms, as I am interested only in the total group responses to the questions. It is possible to answer only the first 3 pages in less than 5 minutes. The forms can be returned in the postage paid, self-addressed envelope and placed in any mailbox.

If you have any questions concerning this study, or if I can assist you in any way, please write to me at the above address. After August 15, I may be reached at Stout State University, Menomonie, Wisconsin, 54751.

Sincerely,

Charles Edwin Smith

CES:jj

APPENDIX E

COMPARISON OF THE SAMPLE AND POPULATION

APPENDIX E

COMPARISON OF THE SAMPLE AND POPULATION

Seven different t-tests were conducted to determine if the sample was representative of the population. Four tests compared the reported violations, car ownership, car access, and parental limitations, for the non-participants and the sample. Two tests compared the sample violation group with the non-respondent violators. One test compared the non-violation respondents and non-respondents.

A t-statistic was computed to determine if a significant difference existed between the respondents and non-respondents when comparing the violation records. Data used for the analysis are presented in Table E-1.

TABLE E-1.--Descriptive statistics of the violations for the population, respondents-sample, and non-respondents.

Statistics	Population	Respondents	Non-Respondents
N	238	105	133
Mean	1.03	.76	1.28
S.D.	1.06	1.42	1.73
Yes Response = 1 No Response = 2			

Critical f Value = 1.98

Respondents - Non-Respondents = t = .80

The mean and standard deviation of the non-respondents are larger than the sample mean and standard deviation. Since the t value of .80 is less than the critical value of 1.98, it was concluded that the sample was not significantly different than the mean for the non-respondents, when examining violation records.

A t-test was also made comparing only the violation group of the respondent sample with the non-respondents. This test was made because the violation group was under-represented in the sample. The data used in computing the t-test is displayed in Table E-2.

TABLE E-2.--Descriptive statistics of the violations for the population, respondents-sample, and non-respondents violators

Statistics	Population	Respondents	Non-Respondents
N	108	40	68
Mean	2.24	2.00	2.48
S.D.	1.57	1.68	1.69
Yes Response = 1 No Response = 2			

Critical f value = 1.98

Respondent Violators - Non-Respondent Violators = t = .14

The data presented indicate that the mean and standard deviation are higher for the non-respondents. The resulting t value of .14 is less than the critical value of 1.98 at the .95 confidence level. Therefore,

the sample violation group was not significantly different from non-responding violators.

It was also possible to compute five additional t-tests comparing the respondents and non-respondents. These comparisons were possible because of available data from the Student Driving Survey. The items selected for comparison were:

1. SDS 49, Do you own a car?
2. SDS 50, Do you have access to a car whenever you want to use one?
3. SDS 51, Have your parents set any limits on your use of the car?

These items were chosen because they were closely related to variables measured in detail with the Family and Automobile Opinionnaire.

Displayed in Table E-3 are the data obtained from the subjects in March, 1968, when asked the question, "Do you own a car?" Presented are the totals and percentages for the population, respondents, and non-respondents. Also presented are the percentages of replies given by the population and information for violators and non-violators.

Examining the responses given by the population indicates 30 per cent of the subjects owned a car. The table also shows that the non-respondents had a higher

TABLE E-3.--Responses given by the subjects pertaining to automobile ownership
SDS, Question 49, "Do you own a car?"

Classifications	Population		Respondents		Non-Respondents	
	N	%	N	%	N	%
Total	238	100	105	100	133	100
Replied Yes	73	30.67	25	23.81	48	36.09
Replied No	161	67.65	79	75.24	82	61.65
Did Not Reply	4	1.68	1	.95	3	2.25
Non-Violators	130	100	65	100	65	100
Replied Yes	29	22.31	11	16.92	18	27.69
Replied No	100	76.92	54	83.08	46	70.76
Did Not Reply	1	.77			1	1.53
Violators	108	100	40	100	68	100
Replied Yes	45	41.67	14	35.00	31	45.88
Replied No	61	56.48	25	62.50	36	52.94
Did Not Reply	2	1.85	1	2.50	1	1.47

percentage of car ownership than did either the sample or population. The data identifies 42 per cent of the violators owned a car as a junior in high school. For the non-violators only 22 per cent owned a car. The data used to compute a t-statistic for comparing car ownership in March of 1968 of the sample and non-respondents are presented in Table E-4.

TABLE E-4.--Descriptive statistics of car ownership in March 1968 for the population, respondents-sample, and non-respondents

Statistics	Population	Respondents	Non-Respondents
N	238	105	133
Mean	1.70	1.83	1.59
S.D.	.69	.83	.54
Yes Response = 1 No Response = 2			

Critical f Value = 1.98

Respondents - Non-Respondents = t = 2.4

The non-responding group had a lower mean score which indicated higher car ownership. The critical value for a t-statistic is 1.98 at the .05 significance level. The resulting t value of 2.4 indicated there was a significant difference between the non-respondents and the sample when comparing car ownership in March of 1968.

Since the violators were under represented in the sample, a separate t-test was conducted for only the

violation respondents and non-respondents. The data used to compute this test are presented in Table E-5.

TABLE E-5.--Descriptive statistics of car ownership in March 1968 for the population, respondent-sample, and non-respondent violators

Statistics	Population	Respondents	Non-Respondents
N	108	40	68
Mean	1.55	1.83	1.49
S.D.	.54	1.26	.56
Yes Response = 1			
No Response = 2			

Critical f Value = 1.98

Respondent Violators - Non-Respondent Violators = f = 1.6

The resulting t-value of 1.6 for the violators does not exceed the critical value of 1.98. Therefore no significant difference exists between the violation respondent and non-respondents.

A t-test was also computed for the non-violation sample and non-respondents. The data used to conduct this test are found in Table E-6.

Another comparison of the non-respondents and sample was made using the following 1968 index. "Do you have access to a car whenever you want to use one?" The results of the percentage comparisons are displayed in Table E-7.

TABLE E-6.--Descriptive statistics of car ownership in March 1968 for the population, respondent-sample, and non-respondents without violations

Statistics	Population	Respondents	Non-Respondents
N	130	65	65
Mean	1.76	1.83	1.69
S.D.	.44	.37	.49
Yes Response = 1			
No Response = 2			

Critical f Value = 1.98

Respondents w/o Violations - Non-Respondents w/o Violations = t = .45

TABLE E-7.--Responses given by the subjects pertaining to automobile availability

SDS Question 50, "Do you have access to a car whenever you want to use one?"

Classification	Population		Respondents		Non-Respondents	
	N	%	N	%	N	%
Total	238	100	105	100	133	100
Replied Yes	169	71.01	75	71.43	94	70.67
Replied No	60	25.21	27	25.71	33	24.81
Did Not Reply	9	3.78	3	2.86	6	4.51
Non-Violators	130	100	65	100	65	100
Replied Yes	91	70.00	44	67.69	47	72.30
Replied No	37	28.46	20	30.77	17	26.15
Did Not Reply	2	1.54	1	1.54	1	1.54
Violators	108	100	40	100	68	100
Replied Yes	77	71.30	31	77.50	46	67.64
Replied No	24	22.22	7	17.50	17	25.00
Did Not Reply	7	6.48	2	5.00	5	7.35

When examining the replies given by the population subjects, it was found that the sample and non-respondents are almost identical. Comparing the violation classification, the yes responses of the sample have a slightly higher percentage. In the non-violation category the percentage representation of the sample is slightly different from the non-respondents.

Information needed for determining a t-statistic is found in Table E-8. The data presented indicate the mean, standard deviation, and variance are nearly the same for both the sample and population.

TABLE E-8.--Descriptive statistics of automobile access in March 1968 for the population, respondents-sample, and non-respondents

Statistics	Population	Respondents	Non-Respondents
N	238	105	133
Mean	1.21	1.23	1.21
S.D.	.50	.49	.51
Yes Response = 1 No Response = 2			

Critical f value = 1.98

Respondents - Non-Respondents = f = .11

The resulting t-statistic of .11 indicates no significant difference with 95 per cent certainty when comparing access to an automobile while the subjects were juniors in high school.

In Student Driving Survey, the subjects were asked, "Have your parents set any limits on your use of the car?" The responses given indicated 57 per cent replied yes and 41 per cent replied no. This question provided the basis for an additional opportunity to test the representativeness of the sample. A percentage comparison is found on Table E-9.

The data presented reveal the non-violators are equally represented in both the sample and non-respondent groups. Examining the violation group, the sample contains a higher percentage of yes replies. When comparing the totals, the sample contains 6 per cent more yes replies than does the non-respondents. To determine if this difference was significant, a t-test was conducted. Table E-10 presents the data needed to compute the t-test.

If the difference is significant at the .05 level, a critical value of 1.98 must be equalled or surpassed. Since the resulting t-value was .05 it was concluded that no significant difference existed between the groups when comparing parental limitations at the time of the 1968 survey.

Seven different t-tests were conducted to determine if the sample was representative of the population. Four tests compared reported violations, car ownership, car access, and parental limitations,

TABLE E-9.--Responses given by the subjects pertaining to parental limitations
SDS Question 51, "Have your parents set any limitations on your use of the car?"

Classification	Population		Respondents		Non-Respondents	
	N	%	N	%	N	%
Totals	238	100	105	100	133	100
Replied Yes	136	57.14	64	60.95	72	54.13
Replied No	98	41.18	40	38.10	58	43.60
Did Not Reply	4	1.68	1	.95	3	2.25
Non-Violators	130	100	65	100	65	100
Replied Yes	79	60.77	39	60.00	40	61.53
Replied No	51	39.23	26	40.00	25	38.46
Did Not Reply	0					
Violators	108	100	40	100	68	100
Replied Yes	58	53.70	25	62.50	33	48.52
Replied No	47	43.52	14	35.00	33	48.52
Did Not Reply	3	2.78	1	2.50	2	2.94

TABLE E-10.--Descriptive statistics of parental limitations for the population, respondents-sample, and non-respondents

Statistics	Population	Respondents	Non-Respondents
N	238	105	133
Mean	1.40	1.37	1.41
S.D.	.52	.50	.54

Yes Response = 1
No Response = 2

Critical f value = 1.98

Respondents - Non-Respondents = t = .05

for the non-participants and the sample. Two tests compared the sample violation group with the non-respondent violators. One test compared the non-violation respondents and non-respondents.

Six of the seven tests showed the sample was not significantly different from the remaining population. The one test, measuring car ownership proved significantly different. However, the test of car ownership for the sample violation group compared with the non-respondent violation group proved not significantly different. The non-violation respondents and non-respondents were also found not significantly different when comparing car ownership. Since the violation groups were under represented, it was expected that the violations were

the reason for the significant difference in the car ownership test. However, this did not prove to be substantiated.

As a result of the seven t-tests conducted, it was concluded that the sample was in fact representative of the population.