

**FACTORS DETERMINING ACQUISITION AND RETENTION OF CUSTOMERS  
IN THE RETAIL PETROLEUM INDUSTRY - A CASE STUDY**

by

**CLIFFORD REVERIE BECK**

**B. S., Kansas State College  
of Agriculture and Applied Science, 1957**

---

**A THESIS**

**submitted in partial fulfillment of the**

**requirements for the degree**

**MASTER OF SCIENCE**

**Department of Economics and Sociology**

**KANSAS STATE COLLEGE  
OF AGRICULTURE AND APPLIED SCIENCE**

**1958**

## TABLE OF CONTENTS

	Page
INTRODUCTION. . . . .	1
REVIEW OF LITERATURE. . . . .	3
General Aspects of Market Research . . . . .	3
Factors Concerning Buying Habits . . . . .	6
Factors Which Affect Service Station Operations. . . . .	10
Factors Concerning Buying Motives. . . . .	14
Similar Studies. . . . .	18
PART I - SURVEY OF MANHATTAN MOTORISTS' BUYING HABITS AND MOTIVES .	21
Technical Aspects of the Survey. . . . .	21
Survey Results . . . . .	22
Significant Implications . . . . .	24
PART II - COMPARATIVE STUDY OF SERVICE STATION SALES. . . . .	27
General Aspects of the Comparison. . . . .	27
Station Selection. . . . .	28
Sales Comparison . . . . .	34
SUMMARY AND CONCLUSIONS . . . . .	41
RECOMMENDATIONS . . . . .	45
ACKNOWLEDGMENTS . . . . .	49
LITERATURE CITED. . . . .	50
APPENDIX. . . . .	51

## INTRODUCTION

The purpose of this study was to identify and evaluate some of the factors determining acquisition and retention of customers in the Manhattan retail petroleum industry. Such factors largely determine the success of any business. Some of these are of paramount importance to the petroleum retailer because his products (exclusive of the service rendered in connection with them) have thin and colorless meanings "in contrast with the rich associations that coffee, clothing, cigarettes and cars hold for people." Gasoline is almost devoid of any associations except its utilitarian use, and even the "brands are mostly blurred and without distinction in the consumers mind."<sup>1</sup>

Many studies of service station-motorist relationships have been made. Some of these have been national in scope while others studied regional and local markets. No one seems to question either the validity or value of such studies. However, it is quite commonly believed that the findings of these studies are the result of peculiar characteristics of the region studied.

No similar study had been made in the Manhattan area. It was felt that only a local study could give proper weight to the characteristics of this particular trade area. Such a study should be of considerable value to the 34 Manhattan service station operators and their associates.

Some of the economic aspects which distinguish Manhattan are: Of the 22,000 residents, a considerable portion are transients. Among the major groups who are temporary residents are approximately 7,000 college

---

<sup>1</sup>Pierre Martineau, Motivation in Advertising, p. 81.

students and 3,000 people comprising military families associated with Fort Riley. Such groups may tend to lower the age median of the population.

Other economic factors which characterize Manhattan's economy include a preponderantly agricultural trade area of some 75,000 people within a 50 mile radius, as well as tourist and convention visitors, local industry, insurance, state and federal agencies, and contracting firms.<sup>2</sup>

U. S. Highway 24 as well as State Highways 13 and 18 run through Manhattan. Both state highways connect with transcontinental highways leading in all directions.

In 1957 there were 14,681 motor vehicles licensed in Riley County, of which approximately 6,000 were on the tax rolls of Manhattan.<sup>3</sup>

In light of these characteristics, and in order to make the desired contribution to the local industry, a two-fold approach was made.

Part I, survey of buying habits and motives (personal interviews) was accomplished in March 1958. The questions asked were taken from a parent study published by du Pont.<sup>4</sup> The purpose of the survey was to determine what, if any, correlation existed between local motorists' habits and motives and those revealed as applicable to "central" motorists in the parent study.

Part II was a comparative study of service station sales in Manhattan. The sales records of two stations, i.e., Wickham's Conoco,

---

<sup>2</sup>Manhattan (Riley County, Kansas) City Directory, pp. 1-12.

<sup>3</sup>Riley County Treasurer's records.

<sup>4</sup>The Service Station and the Motorist, Compilation of Reports No. 1 through No. 6, E. I. du Pont de Nemours, Wilmington.

1201 Poyntz Avenue, and Dawson's Conoco, 1030 Poyntz Avenue, were studied. These stations were selected on the basis of homogeneity of product, trade area, accessibility, and facilities. This three year comparison of sales data together with appropriate historical information provided a means of estimating the relative importance of the factors thought to determine faithful patronage.

#### REVIEW OF LITERATURE

The literature dealing with market research per se is beyond the scope of this inquiry. However, in the following review the general subject has been identified in the light of its meaning to the petroleum industry. Within this orientation three general approaches to market research seem to appear. They are the study of: (1) motorist buying habits, (2) factors which affect the success of the service station, and (3) what motivations affect consumer behavior. They are by no means mutually exclusive. In fact it could be shown that they are interdependent, but individually they serve to distinguish conceptual research areas.

#### General Aspects of Market Research

The petroleum industry is now placing more emphasis upon market research than ever before. This is partly a reflection of the structure of the industry. Petroleum producers are essentially an oligopoly group<sup>5</sup> selling a homogenous product at near uniform prices.<sup>6</sup> They are

---

<sup>5</sup>Edward Chamberlin, The Theory of Monopolistic Competition, pp. 100-103.

<sup>6</sup>National Petroleum News, "A Senator Looks at Oil Marketing," p. 98.

far removed from the widely dispersed points at which the consumer expresses his purchase preference. Market research is used to overcome this structural handicap. In essence, it is an investigative effort to obtain necessary information upon which more rational decisions may be made. For the petroleum industry there appears to be two prime sources through which this information is obtained. First, the employment of specialists who act as company representatives in the local trade areas. In addition to other functions, this group provides the sole continuous connecting link between retailer and producer. Where the retailer is an independent operator, his distributor serves in this capacity.

The second source is that of formal market research. In large firms this work of gathering data from various sources, applying mathematical procedures, and making analysis is done by professional market analysts. However, in every firm, large or small, some individual or group performs something approaching this research function.<sup>7</sup>

Traditionally market research has attempted to answer the questions of who, what, where, when and how. Following World War I a new area of specialization evolved. It is called motivational research and is a study of what causes an individual to respond favorably or unfavorably toward another person, an institution, an object, or idea. When applied to consumer behavior, as it most often is, it becomes an attempt to determine patronage motives, and may take one or a combination of three approaches: observation of consumer behavior, survey of consumers, or various psychological approaches.<sup>8</sup>

---

<sup>7</sup>Theodore N. Beckman, Harold H. Maynard, and William R. Davidson, Principles of Marketing, p. 584.

<sup>8</sup>Ibid., pp. 73-74.

The oldest technique is that of observation, and in many cases it remains adequate and valid today. It is not, however, the most desirable under certain dynamic conditions. This is because it represents a simple ex post approach.<sup>9</sup>

Surveying is a respectable method under changing conditions where the interviewees are aware of the reasons for their various responses. Without this awareness they are incapable of supplying valid answers to the questions asked.<sup>10</sup>

The methodological approach based upon psychology is the most difficult to accomplish. By its use the expert interviewer is able to probe into the reasons for consumer behavior where either the interviewee is himself unaware of the motivating reasons or is reluctant to reveal those reasons.<sup>11</sup>

Perhaps the best insight into the nature and purpose of market research in the petroleum industry is provided by this concise statement made by an executive of one of the major oil producers:

Our first approach, and one we still utilize on occasion, involves straightforward direct questioning of consumers--the "Why do you. . .?" type of question. . .this technique has severe limitations. In the effort to get behind the obvious sort of answer that such questions yield we have frequently used the unstructured or depth interview technique wherein (by observing a kind of consumer "stream of consciousness" on the subject of service station patronage) we attempt to elicit some of the more basic causes of attachment to stations and brands. Recently, further elaboration of our methods has taken the form of an hypothesis testing approach wherein we establish hypothetical explanations of patronage and then test these hypotheses by subjecting samples of customers to interviews carefully structured in accordance with an

---

<sup>9</sup>Ibid., p. 74.

<sup>10</sup>Loc. cit.

<sup>11</sup>Ibid., p. 75.

appropriate experimental design. Our most recent attack on the problem--now in progress--utilizes the methods of operations research and attempts to establish a mathematical model which will serve to explain service station volume. This technique involves also the use of origin and destination studies.

. . .from all of this effort there comes a continuing flow of information, much of which is of value to individual dealers. It has been our practice from the start to provide dealers with this information as soon as possible after it becomes available. Based on research results, there have been many programs designed to encourage improved standards of service station appearance, rest room cleanliness, and other aspects of the station which are important to patrons and which are under the control of the dealer. Other programs emphasize to the dealer the location and dimensions of his potential market and provide him with techniques--direct mail solicitation, personal solicitation, etc.--to exploit that potential. . .our advertising emphasizes the importance of the individual dealer and attempts to increase the motorist's confidence in the dealer. Other programs are made available to dealers to permit and encourage them to tie in their advertising with our general campaigns.<sup>12</sup>

By such efforts the petroleum industry has made considerable progress toward better understanding the technical aspects of its market. However, a majority of the industry spokesmen contacted during the initial stages of this inquiry recommended a review of the more elaborate studies done by companies outside the industry. Without exception these recommended companies are producers whose products find an important outlet through service stations.

#### Factors Concerning Buying Habits

The Service Station and the Motorist<sup>13</sup> is a compendium of six national studies of consumer buying habits at service stations. It was prepared for the E. I. du Pont de Nemours and Co., Inc. by National

---

<sup>12</sup>D. S. Warning, Manager, Distributions Economics Department, Standard Oil Company (Indiana) in a letter to author, September 26, 1957.

<sup>13</sup>This publication served as the parent study for Part I of this inquiry.



Analysts, Inc. The study was made because of du Pont's interest in the consumer-motorist as a purchaser of their gasoline additives, and for the intended use of petroleum marketing personnel in better understanding consumer buying habits.

In this publication the results of 3,100 household interviews and 21,000 observations at 1,193 service stations were reported. While the entire publication is of value, the findings pertaining to "central"<sup>14</sup> motorists is of special pertinence to this study. (Unless otherwise noted all references to this publication pertain to the central gasoline marketing area only.)

According to these findings most motorists have a favorite station. These motorists usually trade at this station, and have done so for more than two years. A majority of these same motorists indicated that the station was located more than one mile from their home. The main reasons given for their patronage were service received, convenience, dealer friendship, and brand preference, respectively. Older motorists throughout the country stressed service, while those under 35 were found to emphasize the importance of dealer friendship.

Brand discrimination was found to exist in two forms: (1) unacceptable brands were almost without exception "believed" to be of poorer quality as opposed to factual knowledge about their quality, and (2) accepted brands were believed to have better quality based on some idea

---

<sup>14</sup>Central here refers to the central gasoline marketing area and includes Minnesota, Wisconsin, Nebraska, Iowa, Illinois, Kansas, Missouri, Oklahoma, Arkansas, Louisiana and Texas.

of performance. However, slightly more than half of those surveyed said that they would continue to buy at the same station even if it changed brands.

Over half of the interviewees expressed a preference for regular gasoline with price consideration given as the main reason. Most of those preferring premium grade gave performance as their prime consideration. However, nation-wide there was a high receptivity of premium if it were offered.

It was further found that premium purchasers tended to buy in larger quantity. Also that the ten per cent having credit cards tend to purchase both more gasoline per sale, and premium grade. About one-third of those surveyed had charge accounts at a local station. However, unlike credit card users, this latter group was found to have no distinctive buying habits.

Approximately 72 per cent of the motorists surveyed said they bought motor oil and gasoline at the same station. It was also found that service stations are the most important single source for the purchase of tires, batteries, and accessories. On a nation-wide basis, it was found that women are important purchasers of TBA items.

In all regions it was found that where the motorist gets more service, paid or free, he purchases more gasoline per call. And, generally speaking, the motorist desires more service than is rendered. The central motorist was found to utilize paid services to a greater extent than motorists in the other marketing areas.

Another nation-wide study of the American motorist was made by the Observation Research Corporation of New York City for the Coca-Cola Company. These findings were published under the title Automobilus

Americanus. The technique used was exclusively observational, and no regional breakdown of data was made. The stated purpose of this study was to determine, "What happens when 20,861 customers pull into 287 service stations? What do they come in for? When, why and how do they buy? How can the station sell them more?"<sup>15</sup> Basically this is a comparative study of two groups of drivers, i.e., those who remain in their car while at service stations, and those who get out.

Some of the more important findings contained in this report are:

The average service station during a 12 hour day makes 145 money transactions. Of these transactions only 57 per cent were for the purchase of gasoline. Thus, it was pointed out, the service station's multi-purpose nature has significant meaning for all concerned.

According to this report the number of cars served per hour was found to be a better indicator of gallons pumped than was the number of gallons sold per car. The average station was found to serve about 10 cars per hour.

A comparison of traffic per day revealed that almost as much traffic is handled on Saturdays and Sundays as the other five days combined.

From these observations it was learned that the driver (man or woman) accounted for 90 per cent of the purchases made at service stations, although drivers represented only 52 per cent of the people who stopped at service stations. While only 45 per cent of the drivers got out of the car, those who got out made 70 per cent of all purchases, and 92 per cent of all accessory purchases. The study reports that the two most important inducements to leave the car are rest rooms and refreshments.

---

<sup>15</sup>Automobilus Americanus, The Coca-Cola Company, Atlanta, Georgia, p. 1.

This analysis showed that the longer the motorist is at the station the more likely he is to get out of the car. And a direct relationship was found between the length of time the driver was out of his car and the dollar value of his purchases. It was reported that when the motorist leaves his car he steps into a whole new buying territory. This probably accounts for nearly all impulse buying done at service stations. Average dollar purchases ranged from 37 cents for the customer spending one minute out of his car to \$3.74 spent by the motorist staying over six minutes. Although only 38 per cent of the motorists spent \$3.00 or more, such purchases represent 64 per cent of the station's income.

Credit customers were found to spend \$4.07 as an average, and women (25 per cent as compared to 18 per cent of the men) were the most frequent credit users. Credit was used more often for the purchase of premium grade gasoline, and women were observed to purchase premium more frequently than men. In this connection it was also found that the average premium purchaser bought nearly two gallons more gasoline per call. These findings are similar to the characteristics attributed to the credit user by the du Pont study reviewed above.

#### Factors Which Affect Service Station Operations

A second series of studies prepared by du Pont<sup>16</sup> is of interest. The results published in these five reports were obtained in 2,633 personal interviews with service station operators. The operators were

---

<sup>16</sup>The Service Station Operator.

individually selected on a probability basis within randomly selected segments of the nation.

The first four reports discuss the operator's: (1) functions, (2) knowledge of products and market, (3) relationships with supplier and producer, and (4) background, affiliations, and employment practices. The fifth report analyzed the interrelated variables which contribute to service station success.

Some of the more pertinent findings revealed in Report Numbers 1 through 4 are as follows:

The average central<sup>17</sup> operator has approximately ten and one-half years of service station experience. He has been in charge of his present station and selling the same brand of gasoline for almost six and one-half years. This average operator indicated that 22 per cent of his dollar volume is derived from lubrication and motor oil sales. His average annual outlay for newspaper advertisements and handbills was reported to be \$187. It was also found that a vast majority of the central operators sell both new tires and batteries.

While no regional breakdown was given on the number of hours open for business, nation-wide the average station is open 99 hours per week. Its operator works an average of 72 hours per week, and the station sells 13,400 gallons of gasoline per month.

Further, it was reported that these operators consider service, brand, friendship, and location as their greatest assets. This

---

<sup>17</sup>Central here refers to the central gasoline marketing area and includes Minnesota, Wisconsin, Nebraska, Iowa, Illinois, North Dakota, South Dakota, Arizona, New Mexico, Wyoming, Kansas, Missouri, Oklahoma, Arkansas, Louisiana, Montana, Idaho, Utah, Nevada, Colorado and Texas.

essentially agrees with the consumers' reasons for patronage reported in The Service Station and the Motorist series.

The fifth report in this series is especially pertinent to this study. It is an attempt to answer the question, "What makes a service station successful?" The data contained is from the same sample of service stations indicated above. However, this information was classified on the basis of income and gallonage rather than regional marketing areas. The classes used were: low income (\$3,000 a year or less) - low gallonage (less than 10,000 gal/mo); low income (less than \$5,000/yr) - high gallonage (more than 20,000 gal/mo); high income (\$5,000 a year or more) - low gallonage (less than 20,000 gal/mo); and high income (\$5,000 a year or more) - high gallonage (more than 30,000 gal/mo).

In the analysis of this data, all significant variables were processed by du Pont's Remington Rand Univac. It was found that a station open less than 17 hours may provide a high personal income for the operator, but a high gallonage station must stay open a greater number of hours. As concerns the operator's personal time devoted to the station, long hours alone is not a determinate of success.

With reference to the operator's total service station experience, as well as his experience as an operator, it was reported that the most successful stations were run by operators having relatively more experience, but that such experience was no assurance of success.

While most operators in all classifications live near their station (in the same neighborhood), as income and gallonage rise so does the likelihood that the operator resides outside that immediate community.

It was also reported that generally some correlation exists between the operator's education and prosperity. Further, that by taking

pertinent courses the operator can raise his income. Although, again education was no assurance of success.

The higher income operators were found to participate more in community and civic affairs than the less successful operators.

Both brand tenure and pricing practices were reported to have relevant implications. The operator who carried the same brand over a period of years was found more likely to have a relatively higher income and volume. While price cutting was reported as a means of increasing volume, it was not always an indicator of higher income.

Likewise, the operator having and using a relatively larger list of customers was found to sell considerably more gallonage, but no definite correlation was found to tie this in with his income level.

As a probable indicator that the more successful operators offer more complete service, it was reported that higher income operators generally provide automatic transmission service and sell new tires.

Although the ratio of total dollar volume compared to income from oil and lubrication sales has been used as an indicator of financial success, this study failed to show the significance of this ratio.

It was reported that more high income and volume operators pay their full-time employees a bonus commission in addition to their salary.

Station location was found to be more important to all operator groups than was brand. However, the more successful operators placed relatively greater emphasis upon brand of gasoline.

## Factors Concerning Buying Motives

The psychological aspects of buying patterns at service stations was the third major study done by du Pont. In this study<sup>18</sup> an attempt was made to explore the reasons underlying motorists' purchase activities. The survey method was also used for this study. From a population of all motorists who bought gasoline during a certain period, 2,036 were selected for interview. This selection was based upon a distribution according to the area sampling method.

This analysis showed that there are four basic motivations (or needs) associated with the ownership and use of automobiles. These needs and the products most closely associated with them are as follows:

1. The need for play (recreation, enjoyment, freedom from care, etc.) - gasoline, tires, and oil.
2. The aggression need (to get ahead, establish superiority, etc.) - gas and oil.
3. The need to conserve (to care for, repair, accumulate, preserve, etc.) - grease and oil.
4. The "infavoidance" need (to avoid being looked upon as inferior in some respect) - polish and tires.

According to this report these needs together with (1) anxiety about the product or its application, (2) family influence, (3) past experience, and (4) the impact of advertising are responsible for the motorist's perception of a service station. Based upon this individual

---

<sup>18</sup>Buying Patterns at Service Stations, A Psychological Investigation, E. I. du Pont de Nemours, Wilmington.



perception, the motorist is "predisposed" to behave in some consistent manner. This predisposition is an indication of what pattern of behavior could reasonably be expected of the motorist. However, circumstances may arise which will overcome this predisposition, and cause the driver to display a buying pattern inconsistent with expectations.

With reference to anxieties about the product or its application some significant differences between men and women were found. However, both indicated that they were more concerned about the quality of oil and tires than gasoline, grease or batteries. Also, this report shows that both men and women were more apprehensive about the services connected with oil and tires than the other three products.

As reported by du Pont further inquiry was made into the anxieties and needs associated with the purchase of tires, batteries and accessories as well as gasoline.

One of the primary needs associated with tire purchases was the propensity to "make a deal." The "deal," it was reported, was less a matter of economy than of ego, and involved a feeling of accomplishment. Also important were guarantees as to quality.

Approximately one-half of the central motorists were predisposed to purchase tires and batteries from sources other than service stations. Some of the reasons given were that other sources provided better quality, greater selection, fresher stock, and lower cost.

The characteristics of gasoline thought important by the motorists surveyed include the grade--premium or regular, its relative octane rating, and its purity, respectively. Gasoline performance was rated as follows: power and acceleration, better mileage, ease of starting, and smooth running. Performance qualities were found to be the deciding

criteria for a vast majority of motorist's predisposition toward gasoline purchases. Consistent with this, more motorists were found predisposed to purchase premium grade gasoline. It was pointed out that this finding differed from the ratio of premium to regular purchasers reported in The Service Station and the Motorist, and was attributed to an actual increase in the ratio.

It was further indicated that where a premium user preferred that grade because of better mileage, the motive was apparently that of a desire to make a deal similar to that associated with tire purchases. For such reasoning to be valid, mileage would have to increase a great deal to cover the cost differential.

According to this report the motorist bases his preference for a certain brand and/or grade of gasoline on: (1) subjective perceptions of how his car runs, or (2) the producers promotional advertising.

This analysis showed that three-fourths of the respondents indicated a belief that major brands of gasoline are alike, yet 72 per cent said that they intended to buy a single brand. An inconsistency is apparent. However, an explanation was found in the fact that three-fourths of those interviewed also indicated they buy from a single station. Therefore, the station emerges as being dominant over brand loyalty.

The station characteristics considered most important in day-to-day driving were found to be the kind of attendant, ease of entry, and kind of lube job. The price of gasoline, whether or not a mechanic was available, and the general appearance of the station were considered of secondary importance. Of least importance to this day-to-day driver were the cleanliness of rest rooms, credit facilities, and tire repair.

Somewhat different characteristics were of relative importance to the driver on a trip. Of prime importance were clean rest rooms, ease of entry, and general appearance. Following these, importance was attached to the price of gasoline, kind of attendant, and availability of a mechanic. Included among those of least importance to the transient driver were tire repair, credit, and the quality of lube job.

Because the day-to-day driver placed the kind of attendant as most important, inquiry was made into what specific attributes were considered important. The findings ranked in descending order are: promptness, checking oil and water, treatment of car, friendliness, voluntary cleaning of windshield, knowledge of cars, care in putting in gas, and clean appearance.

This analysis suggests that although one-fourth of those purchasing during the qualifying period were women, they are not primary targets for petroleum advertising. This is based upon the finding that a majority of these women were either acting upon "orders" or suggestions of their husbands. What advertising is directed toward women, it was suggested, should be oriented toward lessening their anxieties.

The number of credit card holders was found to have increased from that of the earlier reports. Like the other reports a majority of the interviewees were found favorably predisposed toward credit cards.

The other findings contained in this report simply corroborate the reports made in earlier studies.

### Similar Studies

The only published study of central gasoline marketing on the local level which has come to the writer's attention is that of Saltzman.<sup>19</sup> This study was made in two parts. Part I was a survey of buying habits and motives for which motorists were interviewed at service stations. In Part II of the study observations were made to determine to what extent Tulsa service stations were meeting the wants and needs of motorists. The survey and observations were made on a random sample basis.

Results similar to those of the du Pont study above were obtained with reference to service station patronage and the reasons for it. However, it was found that nearness to home as opposed to nearness to business determined the convenience factor for a vast majority of those interviewed.

Other differences revealed by this study show that most Tulsa motorists buy premium gasoline and give performance as the reason. Almost one-third of the drivers used credit cards, and nearly one-third more indicated that they would use them if they had them. Two-thirds of the credit customers bought premium grade gasoline regularly.

Saltzman reports that there were as many motorists having a definite brand preference as those who did not.

Similarity was also found in the list of most wanted services.

Some of the more revealing observations concerning the manner in which Tulsa operators meet their demand were:

---

<sup>19</sup>Lloyd R. Saltzman, Survey of Service Stations in Tulsa, Petroleum Information Committee, Tulsa Chamber of Commerce, Tulsa, Oklahoma, 1957.

1. There was little or no suggestive selling done by service station personnel.

2. One-fourth of the motorists failed to get their windshield cleaned, and less than half had the side and rear windows washed.

3. In checking under the hood, three-fourths of the attendants checked the oil, but only a relatively small number checked the battery and/or water. An even smaller number checked the fan belt. Tire checks were suggested to about 12 per cent of the drivers.

4. Most attendants approached the car quickly. One-third greeted the motorist with "Yes, sir" and only slightly more than 11 per cent asked to fill the tank. Almost one-fourth failed to give a courteous closing remark.

5. More than one-fourth of the rest rooms failed to meet minimum cleanliness standards. One-fifth of the stations had sub-standard outside appearance, and correlation was found between the outward appearance and rest room cleanliness. Almost 15 per cent of the personnel were not reasonably clean and neat.

6. Only a very small percentage of personnel were observed to be careless of the car--either slamming the hood or spilling gasoline.

Based upon the foregoing, Saltzman recommended that Tulsa service stations attempt to:

1. Render unexcelled service.
2. Exploit the sales potential in the immediate vicinity of the station.
3. Promote the sale of premium gasoline for greater motorist satisfaction as well as profits.
4. Encourage wider use of credit cards.

5. Start the motorist buying at least one TBA item in order to get all of his TBA business.
6. Clean all windows and lights, check oil, tires, battery, and radiator, and sweep the car floor in all cars.
7. Provide formal sales training for all attendants, including class work or group sales meetings. In addition, individual on-the-job training should be undertaken, with responsibility for training fixed upon one person.
8. Become alert as to the cleanliness of the station inside and out.
9. Give special attention to closing remarks, and use the customer's name whenever possible.
10. Make greater use of materials provided by the supplier as well as published study results.

Previous research designed to systematically evaluate the factors which determine customer acquisition and retention suggest the following:

1. Most motorists have a regular station which they have patronized for several years. They give service and convenience as the primary reasons for their station preference.
2. Generally the motorists would like to have more service than they receive.
3. The station that gives more service usually sells more gasoline.
4. Credit card users spend more at service stations.
5. A direct relationship between hours of operation and volume of gasoline sold exists.

6. Price is not among the more important determinates of customer attachment.

7. The most successful service station operators are usually more active in community affairs.

8. Most motorists shop around for tires, and about half of them buy from sources other than service stations.

There seemed to be no apparent reason why these findings, appropriately modified, should not apply to Manhattan motorists. Only a local study could confirm this, however, and might conceivably suggest appropriate modification. Also, an application of these findings to a particular station would provide a means of evaluating the factors determining customer acquisition and retention.

#### PART I - SURVEY OF MANHATTAN MOTORISTS' BUYING HABITS AND MOTIVES

##### Technical Aspects of the Survey

A systematic sample of all blocks in Manhattan<sup>20</sup> was taken. The sample was selected in the following manner: All of the blocks were numbered consecutively. Since one-tenth of the blocks were to be surveyed, a number from one to ten, inclusive, was drawn. This number was then used to determine the first block to be surveyed. Using this block as a base designation, every tenth block was designated for survey.

A quota of ten drivers, age 18 and over, residing in each designated block was interviewed. Thirty interviewers accomplished 300 personal interviews in this survey. Each interviewer was a volunteer, and

---

<sup>20</sup> Except those located in Gross Addition, see Appendix, Plate I.

was previously counseled in the techniques of personal interviewing. Specific mechanical instructions are included as a part of the Appendix.

The questions asked in this survey were extracted from The Service Station and the Motorist.<sup>21</sup> (For questions asked, see Appendix.)

### Survey Results

Detailed results of each individual question are included in the Appendix, where a comparison has been made between the findings of this survey and those of the parent study.

The substance of the findings, which define the major characteristics of the Manhattan motorist, is as follows:

1. A majority of Manhattan drivers are men between the ages of 18 and 35.
2. Three-fourths of Manhattan motorists usually buy gasoline from the same station. Almost half of those have patronized that station from one to four years, and the station of their choice is located within seven blocks of their home.
3. About one-third of these regular customers indicated that their original decision to "try" that station was because it was conveniently located. One-fifth said they started going to that station because they knew the operator, and another one-fifth indicated that credit or discount was the initial inducement.
4. The most frequent reason given for continuing their patronage was that they liked the service they received. Other reasons indicated, arranged in descending order, were: convenience, dealer friendship,

---

<sup>21</sup>The Service Station and the Motorist, op. cit.



price, brand desired, and credit. Premiums were considered relatively unimportant by these respondents.

5. Of the slightly less than one-fourth who trade at several stations, more than one-third bought gasoline at three different stations during the thirty days immediately preceding the survey.

6. When asked where they usually purchase their motor oil two-thirds of all respondents replied that they bought oil at the same station from which they purchase gas. Of the one-third who bought elsewhere a majority indicated that they bought at sources other than service stations, i.e., car dealers, mechanic's garage, mail order, etc.

7. The drivers surveyed ranked free services commonly rendered by service stations in the following order of importance: clean windshield, check motor oil, check tires, check radiator, and check battery. They further ranked these services in the same order when asked which free services they received when they bought gasoline last. However, a vast majority in each instance indicated that they had asked the attendant to perform the service. It is impossible to determine from this survey how frequently they want each of these services.

8. A majority of the motorists thought that lubrication was the most important paid service available at service stations. Tire repair and car washing were ranked second and third, respectively, with other paid services desired by a relatively small per cent of the respondents.

9. Almost two-thirds of those interviewed held the belief that gasolines sold by different companies are all pretty much alike.

### Significant Implications

While no valid statistical method was applied to determine the amount of error inherent in this particular survey, approximately 27 per cent of the interviewees were contacted a second time by the writer. This attempt to validate the survey included at least one respondent from each interviewer's work. At the latter contact the respondents were asked a question which they had previously answered in the initial interview. This effort failed to reveal any apparent error in either the survey questions or the performance of the interviewers. Therefore, based upon the results of this survey, certain inferences can reasonably be drawn about the local adult motoring public.

Questions answered by Manhattan motorists showed a market correlation to the findings reviewed earlier, and particularly to those of the parent study. However, some instances of uniqueness were apparent.

While a considerable portion of the population are temporary residents, the local driver has a definite propensity to confine his business to a single service station. As might have been expected, this loyalty is of shorter tenure (one to four years locally as opposed to five or more years reported by du Pont).

The fact that about half of the local respondents indicated that their favorite station was within one-half mile of their home (while for central motorists the distance was one mile) may be attributed to the fact that Manhattan is not a large town, and the environs were not included in the survey.

It was noted that considerably fewer respondents said they started going to their regular station because of friendship for the dealer or

at a friend's suggestion than was the case for the central motorists generally. This again would suggest that a considerable number find a suitable station soon after they arrive in Manhattan.

Credit and/or discount for the central motorist, was relatively unimportant as a reason for starting to trade at a favorite station. In the local study credit and/or discount was ranked third in a series of seven. When asked why they continued to trade there six per cent gave credit as the reason and five per cent said price. The local survey found that more than 18 per cent were loyal because of credit, and more than 22 per cent gave price as the reason for their station loyalty.

There are two apparent explanations for the emphasis given credit and discount throughout this study. First, a large preponderance of the student and military population are living on limited budgets. Hence, they might seek credit facilities and/or economy prices. Secondly, credit here probably includes both those with credit cards as well as those who establish personal credit relations with local stations. Several stations in Manhattan offer gasoline at prices somewhat below that of most major brands. And one station, at least, gives a one-cent discount to students. Connected with such discounts may be the psychological aspect of a deal as reported in the last study by du Pont. However, credit alone did not appear as important as it was shown to be in the Tulsa study.

Neither friendship nor brand preference was as important to Manhattan motorists as to central motorists generally. This would tend to bear out the du Pont conclusion that loyalty to brand is derived through loyalty to station.

Of those who have no regular station, a greater propensity to distribute their business was indicated. (A majority of local motorists had traded at four or more stations during the 30 days previous to interview versus three or less for central motorists generally.) A majority of such motorists had bought gasoline from a greater number of stations during the month preceding the survey than was reported in the parent study. This would suggest the possibility of a "superior" station gaining regular customers from this third of the population.

Motor oil was found to be purchased somewhat less frequently from the "favorite" station in Manhattan (67 per cent vs. 72 per cent). If the same holds true for TBA items it would be reasonable to conclude that some local service station operators are not exploiting this potential.

The fact that the median age of Manhattan motorists would tend to be somewhat less than the median for the midwest did not alter the fact that service is the main reason for faithful patronage. However, it might be concluded that, except for windshield washing, the local motorist seems to get less service than is generally rendered to central motorists. It was common among a majority of the motorists to ask for the free services which they received. Whether or not these services would have been offered voluntarily was not determined by this survey. But the fact remains that either because of necessity or habit most of the services received were requested.

The local findings would seem not to support the du Pont finding that the central motorist makes greatest use of paid services. At least those interviewed failed to give as much weight to these factors as was reported in the parent study. However, consideration must be given the

fact that the local study was made during the month of March whereas the parent study included data during all four seasons of the year. This local finding might change appreciably if data were gathered during the winter months, when paid services are more important.

By way of summary, it would seem fair to observe that the local station operator should not find his customer's wants and needs differing greatly from those common to most midwestern motorists. At the same time, the more successful operator will find a way of satisfying the unique demands without sacrificing the patronage of those whose demands appear more typical.

## PART II - COMPARATIVE STUDY OF SERVICE STATION SALES

### General Aspects of the Comparison

Part I was concerned with what the local motorists said they desired of service stations. In this part an attempt was made to determine what some of the local and national findings mean in terms of sales to the local service station. The sales records of two similar service stations, i.e., Wickham's Conoco, 1201 Poyntz Avenue, and Dawson's Conoco (formerly Richards' Conoco), 1030 Poyntz Avenue, were compared. An attempt was made to relate obvious differences to those factors affecting acquisition and retention of customers. The approach used was primarily historical. A comparison of volume sales during the period June 1, 1955 through May 31, 1958, was made. It should be noted that the period studied includes the change in management of Dawson's Conoco. Prior to this date the station was operated by Mr. Wayne Richards, and was known as "Richards' Conoco." However, throughout this

study the station located at 1030 Poyntz Avenue has been referred to as "Dawson's Conoco," as it is now known. In cases where Mr. Richards was consulted, his remarks have been identified. Otherwise throughout the text, use of the term operator with reference to this station, indicates the present operator, Mr. Warren Dawson.

The sales figures were taken from the official books maintained by the operators and the distributors who serve them. Where the sales volume of one station showed a pronounced change relative to that of the other, an attempt was made to attribute this divergence to some factor (or factors) in the operation of one of the stations. Where both stations showed a similar change, an attempt was made to attribute such change to exogenous factors (not within the control of either operator). In all instances these attempts were based on the best recollections of the operators, their distributors, and the results of the various surveys reviewed or reported in this study.

#### Station Selection

The above stations were selected for their many similar characteristics. Since Conoco brand gasoline and oil are sold by both, it can be said that their major products (exclusive of the service rendered in connection with them) are homogenous. As indicated above, both stations are identified by the name Conoco preceded by the lessee's name. Although Dawson's Conoco is a company-owned station, and Wickham's Conoco is leased from a Conoco jobber, this was not considered significant to this study. It is doubtful if any of the customers of either station are aware of the difference in ownership.

As indicated on Plate I, Appendix, both stations share essentially the same trade area. They are located approximately one block apart, although on opposite sides of the main thoroughfare (Poyntz Avenue-U. S. Highway 24). While the operators attributed an important part of their business to through-town traffic, both indicated that the bulk of their business is with Manhattan residents. The immediate neighborhood in which the stations are located is primarily residential. From a mid-point between the two stations it would be approximately five blocks to downtown Manhattan, and five blocks to the Aggieville business district. Aggieville is located across the street from Kansas State College. Until recent years it was considered as a limited shopping center providing essential services to students. However, it has evolved into a complete secondary shopping center serving the community at large.

Both stations are on corner lots, and provide access from two streets. In the case of Dawson's Conoco, immediate access is available to westbound traffic on Poyntz Avenue and northbound traffic on North Eleventh Street; crossover entry is necessary for eastbound Poyntz and southbound North Eleventh traffic. Immediate access to Wickham's Conoco is available to motorists eastbound on Poyntz or southbound on South Twelfth Street; crossover entry is provided for westbound motorists on Poyntz and cars traveling north on South Twelfth Street.

Traffic counts are considered to be one of the primary measures of service station potential by the petroleum industry. They were also considered important to this study. Most recent observations on Poyntz Avenue, according to the Manhattan Police Department, fail to show any difference in the volume of westbound vis-a-vis eastbound traffic. A

1955 origin and destination survey reports "Poyntz Avenue (U. S. 24) carries a volume of more than 9,000 vehicles per day for nearly its entire length."<sup>22</sup> In consultation with the Manhattan City Engineer's Office it was learned that the latest 24-hour traffic count shows 3,000 vehicles travel North Eleventh past Dawson's Conoco, and 530 motor vehicles pass Wickham's Conoco on South Twelfth Street. The fact that Dawson's Conoco enjoys more than five times more side-street traffic than does Wickham's Conoco precludes the conclusion that traffic-wise they are strictly comparable. However, the number of vehicles traveling Poyntz Avenue was more than twice the combined North Eleventh-South Twelfth Street counts; this would seem to make them more alike than unlike in this respect.

The distance at which a station can be identified by an approaching motorist is also important. While it is not nearly as important to the local motorist, an out-of-town driver must be alerted in sufficient time to reduce his speed and/or change lanes in order to make safe entry. In this respect the two stations are also similar. Due to the cover of trees, for which Manhattan is noted, both stations appear somewhat "blind" to the motorist traveling Poyntz Avenue. However, each is easily seen by motorists approaching on their respective side streets.

The general appearance of these stations show striking similarities. In addition to the similarity of name mentioned earlier, the architectural design of both buildings is contemporary. They appear to be in good repair, and are painted in the red, white and green

---

<sup>22</sup> Origin and Destination Survey, Manhattan, Kansas. Highway Planning Department, State Highway Commission, 1955, p. 19.



national color scheme of the Continental Oil Company. Each station prominently displays a lighted-rotating-pole sign, and other point-of-sale advertising is similar in appearance. Also important to the general appearance is the neatness of the premises. This may provide a basis upon which some motorists judge rest room cleanliness.<sup>23</sup> Based upon periodic observations over a 12-month period, the writer was unable to find any dissimilarity in this respect. Both stations could be considered above average for general cleanliness, and the rest rooms are among the cleanest to be found in this area. Comparable service facilities are available at both locations. That is, each station has two bays with wash and lube rack. Complete service for tires, brakes, mufflers, etc. as well as limited service for automatic transmissions was provided by both stations throughout the period studied.

While station selection was based primarily upon the similarities of the two stations, equally important to this study were their dissimilarities. Without the latter the purpose of this part of the study could not have been fulfilled.

Paramount among these dissimilarities is the number of hours each station was open for business. Since 1954 Dawson's Conoco has provided continuous 24-hour service. Mr. Wickham has varied his hours of operation on a seasonal basis since 1946. During the period January 1 through March 15 each year the station was open 15 hours per day. The remainder of the year service was provided on a 16-hour basis.

A difference was also found in the TBA items stocked. While Dawson's Conoco carries roughly one-half as many new tires in stock as

---

<sup>23</sup>Automobilus Americanus, op. cit., p. 16.

the average midwestern station,<sup>24</sup> Wickham's Conoco does not carry new tires in stock. It was found that both operators rely heavily upon the stocks carried by Manhattan automotive suppliers, and both indicated that they were usually able to satisfy the demand for tires with a minimum of delay. Otherwise, TBA items stocked (including batteries) was comparable. There was no apparent difference in the manner in which TBA items were displayed or promoted.

Another obvious difference in the two stations is the number of gasoline pumps. Dawson's Conoco has two islands, with a total of five pumps. The station operated by Mr. Wickham has a single island consisting of four pumps. During peak periods the number of pumps may influence a motorist's decision to stop for service.

Dissimilarities were found in the extent and nature of station promotional activities undertaken. Mr. Richards and Mr. Dawson have engaged in station promotion on a limited basis, i.e., direct mail solicitation, etc. However, the results obtained were reported to have been generally disappointing. During the fall of 1957 Mr. Dawson placed placards in most of the fraternities and sororities informing students of his rather liberal policy of cashing student's checks. This was reported to have been somewhat effective. Wickham's Conoco has occasionally cosponsored local events. And, both stations have been promoted in connection with some of Conoco's national campaigns. Otherwise, neither station has had a formal or systematic station promotion campaign.

As might have been expected, some difference was found in personnel. However, a systematic study was not made of station-customer

---

<sup>24</sup>The Service Station and the Operator, Report Number 2, p. 13.

relations. Therefore, only a few of the more important qualifications of the operators have been included.

Mr. Richards, the former lessee of Dawson's Conoco, is a college graduate. When he left the service station business in 1956, he had 27 years experience, a part of which he was a district representative for Conoco. He operated Dawson's Conoco for a period of eight years. It was indicated that he spent an average of 65 hours per week at the station. In 1956 his regular-customer list contained about 300 names, and approximately 80 per cent of his business was local in nature. He further stated that he felt that his experience as a district representative was an asset to his business, and he attended all dealer meetings. During 1955-56 Mr. Richards belonged to several civic and service organizations. All of his employees were on a straight salary and/or wage basis.

His successor, Mr. Dawson, has been the operator of Dawson's Conoco for two years. Prior to leasing this station, he had ten years experience in local service stations. However, he had never operated a station of his own. Mr. Dawson devotes about 70 hours a week to his business. A list of approximately 100 active regular customers was maintained. Mr. Dawson estimated his business to be 40 per cent transient. He is a high school graduate, and attends all dealer meetings. His employees are paid a straight salary and/or wage. Mr. Dawson is active in several local organizations.

Mr. Wickham devotes about 60 hours a week to his business. He is also a high school graduate, and has approximately 25 years service station experience. For the past ten years he has operated Wickham's Conoco. He estimated that perhaps 80 per cent of his business was with

local residents. He does not maintain a list of regular customers, other than those to whom he extends credit. He attends most of the dealer's meetings, and pays one of his employees a commission in addition to salary on certain repair items. The list of local organizations to which Mr. Wickham belongs is equally as impressive as those of the other operators.

The above characteristics can, and undoubtedly have had some impact upon the relative success of the two stations.<sup>25</sup>

### Sales Comparison

Shown on Plate II, Appendix, are detailed monthly sales data reported by both stations for the period June 1, 1955 through May 31, 1958. Figures 2, 3, 4, and 5 of Plate II show the relative volume of each station's gasoline, oil, service, and TBA sales, respectively.

It should be noted that the approach in this part of the study is far removed from both experimental methods and the mathematical analysis. It is basically historical in nature and to the extent of numerical values, dates, etc. may be considered factual. But beyond these statements of fact, all reasoning was based upon hypotheses which may or may not prove valid in reality. However, each instance where effects have been attributed to combinations of particular causes, concerted effort was made to arrive at the most reasonable explanation within the capabilities of the operators, their distributors, and the writer.

With only a precursory examination of Plate II, several general observations are apparent. First, Dawson's Conoco generally does a larger

---

<sup>25</sup>Success as used here means gross sales volume. No inquiry into the net-return-to operator was made.

volume of business in each of the four sales categories. As indicated earlier, at least a part of this difference may be attributed to a combination of longer hours of operation, a larger number of islands and/or pumps, as well as a larger volume of traffic.

The difference in business hours may also be the major cause of the second observed phenomenon, i.e., fluctuation in sales. It was noted that the sales volume of Dawson's Conoco usually fluctuated more from peak to trough than did the other station's volume. Both the present and former operator felt this was characteristic of the 24-hour operation. Mr. Richards indicated that night operations had presented difficult personnel problems, and Mr. Dawson said the dollar volume of his late-evening-early-morning business frequently fluctuates as much as 700 per cent from one day to the next. Also, Mr. Dawson indicated that among his customers are a large portion of the contractors and their personnel working in this area. Hence when the weather becomes unsuitable for construction work his demand decreases appreciably. Further, it was felt that conventions and sporting events have relatively more effect on a 24-hour operation.

Also obvious was the fact that June, July, and August, 1955, represented an unusual period in the operation of Mr. Wickham's station. August 1955 marked the re-opening of his station, following three months during which it had been operated on a limited-service basis while the old facilities were razed and the new building erected. On the other hand, Dawson's Conoco had been operating in its present facilities without interruption for about 12 months prior to June 1955. This would seem to explain the relative difference in volume during June, July, and August, 1955.

While there appears to be no striking difference in the trends of gasoline and service sales (Figs. 1 and 3), converging trends are observed in Fig. 2 (oil) and Fig. 4 (TBA sales).

The downward trend of oil sales reported by Dawson's Conoco appears to be consistent with national oil trends according to Mr. K. C. McFarlane, District Representative for the Continental Oil Company. The national trend is attributed to the fact that many of the more recent models have a lower oil capacity, and due to better engineering the manufacturers are recommending less frequent oil changes. The fact that Wickham's Conoco has not experienced a similar trend in oil sales could not be adequately explained, as Mr. McFarlane indicated both stations rigorously promote oil sales.

Figure 4 shows greater variability in TBA sales than any of the other sales categories. This is true when monthly sales are compared for each station in isolation, and when the two stations' sales are compared. In order to make this graphic representation more meaningful, trend lines have been plotted for each station's TBA sales. It was observed that the dollar-volume of TBA sales reported by Dawson's Conoco is associated with a definite tendency to decrease with succeeding months. Equally apparent is the fact that the TBA sales reported by Wickham's Conoco have tended to increase with the passage of time.

While the deviations from the respective trend lines are simply consequences of unexplained variation in sales, an apparent explanation is possible for the fact that the two trend lines tend to converge. Both operators indicated that tires constituted the largest part of their respective TBA-dollar volume. Each of them felt that during this period the local tire market had degenerated to near "price-war" competition.

Instances were cited where they had unsuccessfully bid for tire sales, and it was learned later that the successful bid was reported to have been below their cost. Consequently, both were inclined to feel that it was somewhat futile to actively promote the sale of tires. The fact that Wickham's Conoco sells any brand demanded on a purchase-as-demanded basis, appeared to be the only reasonable explanation for this phenomenon. Conceivably the rather lucrative tire inventory policy of Wickham's Conoco may be indicative of a relatively better competitive position in such a market. Whereas Dawson's Conoco carries and promotes a single brand of tires. However, both operators indicated that they sold tires only when a reasonably mark-up could be realized.

Some of the changes shown on Plate II appear to be the result of exogenous factors of a recurring nature, for example, the seasonal aspects of Kansas weather. However, except for periods of extreme weather conditions such as the first three months of 1958, the impact of day-to-day and week-to-week changes have been omitted from this part of the study.

Three months appear to recur as peak-volume periods throughout the time period studied. This is especially noticeable with reference to gasoline sales. These months are September, October, and May. An identical explanation was given by the three operators as follows:

September is the month in which the fall semester of college begins. Since a considerable portion of the student population (4,600 in 1957, according to the campus police department) have personal automobiles, the number of cars in Manhattan increases greatly during the school term. Also, a temporary increase results from the fact that many students, who don't have a personal car, use their parents' cars to bring

their personal effects to Manhattan. Some of these cars remain in Manhattan for several weeks, and the rather extensive use which is made of them is reflected in the sales records of Manhattan service stations.

October continues to reflect some of the increase in motor vehicular traffic associated with September. However, there are other contributing factors, including the winterization of cars and the football season. The highest volume day of the year usually is Homecoming Day at Kansas State.

Unlike the spring change-over, which may be carried out over a period of several months, most Manhattan motorists seem to postpone the winter change-over until the first cold spell. Then the demands made on local service stations reflect the motorist's anxiety.

May is a peak month for essentially the same reasons as September. However, it was found that May sales generally exceed those of September. This might indicate that the national campaigns carried out by Conoco were effective in this area. Dr. Melvin S. Hattwick has described these campaigns as follows:

For the whole period (June 1, 1955, through May, 1958) the pattern of advertising was relatively stable except for spring promotions. These spring promotions in each year were carried out at a rate approximately 25% greater. . . than at any other time of the year. For example, if our rate of expenditure was \$100,000 per month January through October, the rate of expenditure for the months April, May and June would be \$125,000. . .

The promotional activity in 1955 during the spring period was on a new motor oil.

The promotional activity in 1956 was of a less specific nature and simply promoted service, gasoline and motor oil during this period at a 25% increase over the rest of the year.

In 1957 we introduced a new gasoline in April and this was promoted in April, May and June at the same rate.



This year we had a contest throughout Conocoland. . .with the first prize being a Cadillac Full of Cash. . . The contest itself began the first of April and ran through May 15. . .<sup>26</sup>

If the peaks in May can be attributed to a combination of the movement of students from Manhattan, and Conoco spring promotions, then the former would appear to warrant relatively more weight because neither April nor June sales approach those reported for May.

However, it was noted that September 1956 gasoline sales seem not to fit the pattern described above. While Dawson's Conoco showed some increase as might have been expected, the increase was modest. This might have been caused in part by the change in station management mentioned earlier. On the other hand, Mr. Wickham reported a decrease in gasoline sales for that month. From a review of events, it appears that the only reasonable explanation is associated with the very successfully promoted grand opening of a station at 17th and Yuma.

This grand opening was held in conjunction with the Tenth Anniversary of the independent chain oil company which sponsored it. The grand opening lasted 20 days, and the station was promoted on the basis of price competition. The price differential in this case was several cents below that charged by the major oil companies in Manhattan.

It was believed that Wickham's Conoco felt the impact of this new competition more heavily than Dawson's Conoco because the new station location provided immediate access from the main artery feeding east-bound traffic onto Poyntz Avenue.

---

<sup>26</sup>M. S. Hattwick, Director of Advertising, Continental Oil Company, letter to author, June 27, 1958, parenthetical phrase supplied.

Another exogenous factor was introduced when:

The Continental Oil Company started sponsorship of the "Whirlybirds" program over WIBW-TV in March of 1957. The program is carried every Friday night on what we call an alternate week basis which means that Conoco has two one-minute commercials plus a 15-second opening and closing to the program one week and the following week they have a one-minute crossplug contained within the program when it is sponsored by Kansas Power and Light Company.

In addition to this schedule, we had a heavy schedule of spot announcements in the early part of 1957 and late in 1956.<sup>27</sup>

While it is impossible to determine from the sales data whether or not this advertising program had any effect on the two individual stations, it is possible that its impact may have been neutralized by one or more unfavorable factors. Such factors might conceivably have been the rather severe winters of 1957 and 1958, the present recession which is thought to have started in the summer of 1957, and/or the opening of a new Conoco service station in Aggieville on November 15, 1957.

In the above examination no attempt was made to segregate the interdependent factors thought to influence the sales of local service stations. Therefore, in the following summarization, an attempt was made to arbitrarily group them as to origin and effect. Four rather distinct categories appear under such grouping. They are: (1) endogenous factors which primarily affect sales volume, (2) endogenous factors affecting sales stability, (3) exogenous factors which affect sales volume, and (4) causes having exogenous origins affecting sales stability.

Under category 1 above, the number of hours open for business was apparently the major cause for consistent difference in sales volume. However, there were other contributing factors, including station

---

<sup>27</sup> T. M. Sandstrom, General Manager, WIBW-TV, letter to author, July 8, 1958.

location, the number of islands and/or pumps, and station promotion. Also, it was found that during the period in which Wickham's Conoco operated on a limited-service basis an unfavorable impact was felt and a lucrative tire inventory policy was thought to have favorably influenced sales.

On the other hand, the continuous hours of operation appeared to be the main cause of sales fluctuation. An uneven occupational distribution of customers was also found to be an endogenous factor causing sales instability.

Of the exogenous factors thought to influence sales volume, perhaps most weight should be given to the amount of traffic passing the station site. Also important are changes in the population of local automobiles, brand advertising, competition, and changes in demand due to technology.

Exogenous factors affecting sales stability include weather, student movements, and local educational, social and recreational events.

While this part of the study fails to provide any absolute answers, and most of the hypothetical explanations originated with the local industry, its purpose will have been served if it has supplied an indication of the relative importance of some factors affecting the operation of local service stations.

#### SUMMARY AND CONCLUSIONS

Approximately three-fourths of the Manhattan motorists interviewed usually buy their gasoline at the same station. Almost half of them have traded there from one to four years. Although students and

military personnel make up a large segment of the population, Manhattan motorists are loyal to their favorite station, and have been for several years.

One-third of these "regular" customers said they started going to that station because it was conveniently located; for most of them that meant within seven blocks of their home. Dealer friendship was the second most important factor, and credit or discount conveniences was almost as important. The promotion of a combination of these factors would seem to reasonably assure an operator of steady neighborhood trade.

The most frequent reason for continuing this patronage was found to be the service they received. Other reasons given were convenience, dealer friendship, price, brand and credit. Service appears to be of prime importance for customer retention.

Manhattan motorists indicate that they consider a clean windshield the most important free service rendered by service stations. The next most desired services were check oil, tires, radiator and battery in that order. Although the drivers ranked these services in the same order when asked which free services they received when they bought gasoline last, a vast majority indicated that they had requested the services received.

While this study, like a preponderance of the related literature, indicates that the motorist wants service as well as which services he considers most desirable, it apparently has not been determined how often he wants each of these services. Frequently one after another motorist declines these most desired services. Sometimes the attendant is chastized by the driver for offering them. Following such incidents,

the attendant may decide to let the next motorist ask for the services he wants. Yet this motorist may be just the man who really wants them, and he may become dissatisfied because they weren't offered.

Such situations are truly detrimental to the service station and its brand. They not only cause customer dissatisfaction, but leave the attendant in a perplexed state of mind. It would seem apparent that there is a lack of communication between the motoring public and the industry.

If as construed by the literature the motorist wants more service, then he is acting inconsistently when he so frequently declines these "desired" services. If, on the other hand, what the driver really means is that he wants service which meets his immediate needs, i.e., complete service on one occasion and limited but fast service on another, he can be considered as behaving rationally and consistently. The latter hypothesis assumes that the motorist's needs change, and that he is aware of these changes. If this is valid, his behavior might be based upon the following:

1. Today's motorist travels more miles per unit of time than ever before. Therefore, he buys gasoline more frequently, and it may have been only a matter of days or hours since his car received complete servicing.

2. Modern engines, radiators, tires and batteries are better products. They require less frequent attention than earlier models.

3. The motorist today is usually in a hurry. Therefore, repeated attempts to check his car may be a real nuisance to him.

Generally such problems do not arise with "regular" customers, but in the case of a new customer they may determine whether or not he will

return. In this context an entirely new area for study is revealed. Ideally the solution will necessitate the adoption of new policies by one or more of the major oil companies. However, a possible solution has been recommended.

Of those interviewed who have no regular station a large majority had bought gasoline from three or more stations during the month preceding their interview. This would seem to indicate that a station more nearly meeting their needs could reasonably expect to increase its list of regular customers.

A majority of the local drivers were found to be between 18 and 35 years of age. Except for age and a greater emphasis on price, credit and/or discounts, a rather close correlation between the needs and wants of local motorist, and those associated with the "central" motorist as reported by du Pont exists.

From an analysis of three years sales data reported by the two service stations studied both endogenous and exogenous factors were found to have an important influence on sales volume. While the very important factor of personnel was not studied, some of the other endogenous factors which were considered important were:

1. Those affecting sales volume:
  - a. Hours open for business
  - b. Number of islands and/or pumps
  - c. The extent of paid services offered
  - d. The adaptability of tire inventory policy
  - e. Station promotion

2. Those affecting sales stability:
  - a. Twenty-four hour service
  - b. Occupational distribution of customers

Among the exogenous factors which were found relevant were:

1. Those affecting sales volume:
  - a. Traffic passing station site
  - b. Changes in automobile population
  - c. Systematic brand advertising
  - d. Technology as it affects demand
  - e. Competition and market conditions
2. Those affecting sales stability:
  - a. Movement of students in and out of Manhattan
  - b. Weather
  - c. Conferences, sporting and social events

#### RECOMMENDATIONS

While both stations studied appear to be efficient and successful, it was felt that their competitive positions could be enhanced. These recommendations were based on the findings of this study, and the published results of related works.

The operator who wishes to derive greater satisfaction from his service station should:

1. Make every attempt to satisfy the individual customer's real and unreal service needs. This appears to be the key factor in customer retention and acquisition.
2. Promote greater use of credit to increase the dollar value of sales. A rigorous policy of providing credit cards for all customers

using personal credit as soon as they meet company requirements should be adopted. This will allow greater use of personal credit to satisfy the demand of those who fail to meet such requirements. Special services are available to petroleum dealers through the Manhattan Credit Bureau. Greater use should be made of them.

3. Make special effort to solicit the business of all motorists residing within seven blocks of the station.

4. Adopt a systematic approach to station promotion, i.e., study the promotional possibilities, adopt a plan of sufficient scope to be proven, and follow it consistently. This can do a great deal to fix station identification in the motorists mind. Promotion of service emphasizing safety would have many possibilities, including a natural tie-in with national safety campaigns.

5. Either obtain the cooperation of the city in pruning the trees surrounding the station, or alter the height of the pole signs so that they may be easily seen and identified by all approaching motorists.

6. Encourage customers to buy premium grade gasoline. It has been found that most motorists who do believe it to be a better product; it gives them greater satisfaction. It also enhances station profits.

7. Be proud of his business and its service to the public. Wherever possible this pride should be instilled in his employees. One way of doing this might be to relieve on-the-drive attendants from some of the dirtier tasks.

8. Provide some incentive plan to employees to maintain their full cooperation.

9. Be prepared to exploit the forthcoming potential in repair work which the 1957-58 slump in new car sales will bring about.



10. Assign more of the routine tasks to employees, and use his personal time for the more important managerial functions, i.e., personal solicitation, etc.

11. Engage the services of a shopping service agency or make arrangements with some reliable individual to patronize the station during his absence and make a confidential report to him. The identity of the shopper should be unknown to other personnel.

12. Be more optimistic about the sale of tires, and stress quality. A moderately "hard sell" promotion would appear desirable.

13. Adopt a plan for "Express Service" such as is provided by modern supermarkets. By designating and posting the less frequented approaches to pumps as "Red Carpet Service" areas, those customers desiring complete service would be diverted from the main line of traffic. This would leave the more frequented approaches open for those wishing limited but more rapid service.

At the "Express Service" areas fast service would be featured, and the following services rendered:

1. Pumping gasoline
2. Cleaning the windshield and, if needed, other windows.

"Red Carpet" services would emphasize friendly and thoroughness, and would include all of the following:

1. Pumping of gasoline
2. Washing all outside glass
3. Washing headlights
4. Washing mirrors
5. Checking radiator, oil, tires, battery, windshield washers, and fan belts.

6. If passengers get out, vacuuming floor mats and ash trays.

7. All other reasonable requested services.

It was felt that such a segregation of customers as to their need for service would not only solve the communication problem mentioned earlier, but would facilitate the handling of motorists wishing only limited service and better satisfy those desiring deluxe service.

## ACKNOWLEDGMENTS

Appreciation is expressed to Dr. W. B. Nelson for his interest, constructive criticism, and guidance in the preparation of this thesis.

Grateful acknowledgment is made to Dr. D. F. Showalter for his unselfish donation of time, knowledge, and suggestions for carrying out the research.

Thanks are accorded to Mr. K. C. McFarlane, who has given unstintingly of his time, and the operators of the service stations without whose fine cooperation this study would not have been complete.

## LITERATURE CITED

## Books

- Beckman, T. N., H. H. Maynard, and W. R. Davidson. Principles of Marketing. New York: Ronald Press, 1957.
- Chamberlin, Edward. The Theory of Monopolistic Competition. Cambridge: Harvard University Press, 1948.
- Martineau, Pierre. Motivation in Advertising. New York: McGraw-Hill, 1957.
- Polk's Manhattan (Riley County, Kansas) City Directory. Kansas City, Missouri: Polk, 1958.

## Periodical

- "A Senator Looks at Oil Marketing." National Petroleum News, July 1956, 48:6.

## Trade Publications

- Automobilus Americanus: What Happens When 20,861 Customers Pull Into 287 Service Stations, Coca Cola, Atlanta, Georgia, n.d.
- Buying Patterns at Service Stations, A Psychological Investigation, E. I. du Pont de Nemours, Wilmington, Delaware, 1957.
- Origin and Destination Survey, Manhattan, Kansas, Highway Planning Department, State Highway Commission, Topeka, Kansas, 1955.
- Saltzman, L. R. Survey of Service Stations in Tulsa 1956-1957 Survey. Petroleum Information Committee, Tulsa Chamber of Commerce, Tulsa, Oklahoma, 1957.
- The Service Station and the Motorist. E. I. du Pont de Nemours, Wilmington, Delaware, 1954.
- The Service Station Operator. E. I. du Pont de Nemours, Wilmington, Delaware, 1956.

**APPENDIX**

## INSTRUCTIONS

Interviews should be conducted on Saturday or Sunday afternoon or between 6:30 and 9:00 in the evening when men are likely to be at home.

Locate the exact block and house indicated in your assignment. Do not interview more than one person in a family nor more than three families in one building.

Read the introduction word for word and go on to Question 1 without pausing. To pause gives the interviewee an opportunity to give an evasive answer, but if he continues, he enjoys it.

### Introduction

My class is studying some of the things motorists like. Do you drive a car?

If yes, go on without pause to Question 1.

If no, "Could I talk to someone in the family who drives?"

If no one in the family who drives is at home, thank the interviewee and go to the next dwelling. We are only interested in people who drive, so do not fill out a blank for a family where you do not interview a driver. Read each question word for word. Trying to state questions from memory allows variations that alter meanings.

Question 1: Read to the (?). Check "yes" or "no." If the response is "don't know," write "DK."

If "no" in Question 1, ask the second part of "A" and then go on to Question 2.

If "yes" in Question 1, ask "A," "B," "C" and "D." "A" and "B" should have one answer each. For "C" and "D" record as many answers as are volunteered. If the interviewee says he doesn't know, ask if there is some other reason not mentioned. If you can get no answer, write "DK" for "don't know." Be careful not to suggest an answer.

Question 2: Do not try to get more than one answer, the place where it is usually bought.

Questions 3, 4, 5, and 6: Be sure to read exactly as worded. Check all items mentioned and write in any not listed. Be sure not to suggest anything.

Question 7: Simply check. If you get the answer "don't know," ask "which do you think is the more likely?"

Do not ask, but estimate age group and socio-economic status. Get the address from the mail box. Also indicate the date and your name.

Your assignment is Number \_\_\_\_\_. Your area for interviewing may be identified as indicated below:

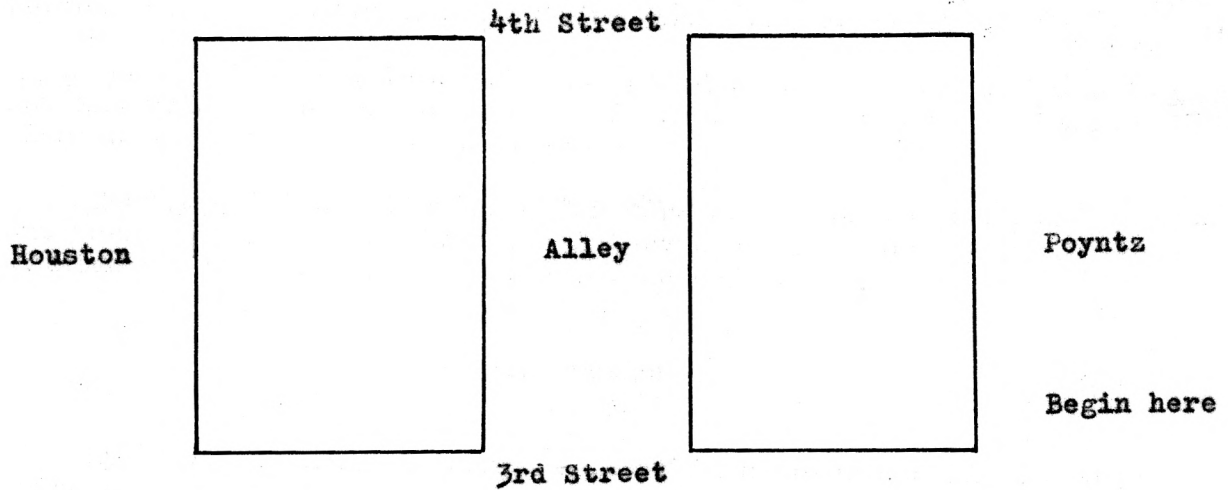


Figure 1.

Start at the northeast corner of the block and go west. If you do not get your ten interviews on the block assigned, take the block just north of this one and start at the northeast corner going around in the same direction as before. If a park or other non-resident block, go to the next one north. If there is no block to the north, take the next one to the west.

I have completed these interviews in accordance with the instructions.

Signed: \_\_\_\_\_

COMPARATIVE RESULTS OF SURVEYS<sup>1</sup>

My class is studying some of the things motorists like. Do you drive a car?

1. When you buy gasoline around here, do you usually go to the same service station? Yes \_\_\_ 77 (66) No \_\_\_ 23 (28)

a. (Part 1) If yes, about how long have you been buying your gasoline there?

Less than 1 year	___	25 (12)
1 to 4 years	___	45 (43)
5 years or more	___	30 (45)

(Part 2) If no, at about how many different service stations have you bought gasoline during the past month?

One	___	6 (5)	Four	___	11 (15)
Two	___	27 (33)	Five	___	3 (6)
Three	___	37 (27)	Six or more	___	16 (10)

b. If yes, about how far in miles (14 blocks equal one mile) is the station from your home?

Less than ½ mile	___	48 (32)
½ to 1 mile	___	37 (17)
1 to 6 miles	___	11 (41)
6 miles and over	___	3 (6)

c. If yes, how did you happen to start going to this station?

Location convenient	___	31 (29)
Knew dealer (friendship)	___	20 (33)
Credit or discount	___	19 (3)
Other	___	18 (18)
Wanted brand	___	11 (15)
Recommended by friend	___	7 (9)
New Station	___	1 (6)

d. If yes, why do you usually buy your gasoline at that particular station?

Service	___	36 (36)	Like brand	___	21 (32)
Location convenient	___	27 (27)	Credit	___	18 (6)
Like dealer	___	24 (32)	Other	___	10 (4)
Cheaper	___	23 (5)	Premiums	___	3 (6)

<sup>1</sup>Here the results of local survey (300 households) are shown with the du Pont findings (3,100 households) as published in The Service Station and the Motorist. Du Pont figures are in parentheses, and except where noted pertain to the central marketing area only. An asterisk indicates that the du Pont figure preceding applies to the nationwide survey. All figures are rounded to the nearest full per cent.



2. Do you usually buy your motor oil at the same place you buy gasoline? Yes \_\_\_ 67 (72) No \_\_\_ 33 (28)

If no, where do you buy your motor oil?

Another station	___ 43 (32)	Mail order	___ 7 (3)
Dealer's shop	___ 21 (18)	Chain store	___ 3 (4)
Mechanic's garage	___ 13 (21)	Other	___ 2 (0)
Through friend	___ 10 (12)		

3. Which free services did you receive when you bought gasoline last?

Clean windshield	___ 92 (85)*	Check radiator	___ 25 (53)*
Check motor oil	___ 45 (59)*	Check battery	___ 14 (24)*
Check tires	___ 28 (30)*	Information	___ 0 (2)*

4. Which of these free services that you received were offered (without your having to ask for them)?

Clean windshield	___ 90 (46)*	Check radiator	___ 12 (51)*
Check motor oil	___ 36 (51)*	Check battery	___ 12 (29)*
Check tires	___ 17 (39)*	Information	___ 1 (10)*

5. Which free services do you consider most important as a motorist?

Clean windshield	___ 68 (78)*	Check battery	___ 13 (17)*
Check motor oil	___ 47 (89)*	Check radiator	___ 13 (58)*
Check tires	___ 25 (58)*		



6. Which paid services do you most like to have available at a service station?

Lubrication	___ 56 (72)	Lights and fuses	___ 4 (28)
Tire repair	___ 33 (72)	Brake fluid	___ 4 (25)
Car wash	___ 17 (20)	Spark plugs	___ 4 (11)
Battery charge	___ 7 (43)	Fan belts	___ 4 (12)
Refreshments	___ 5 (11)		

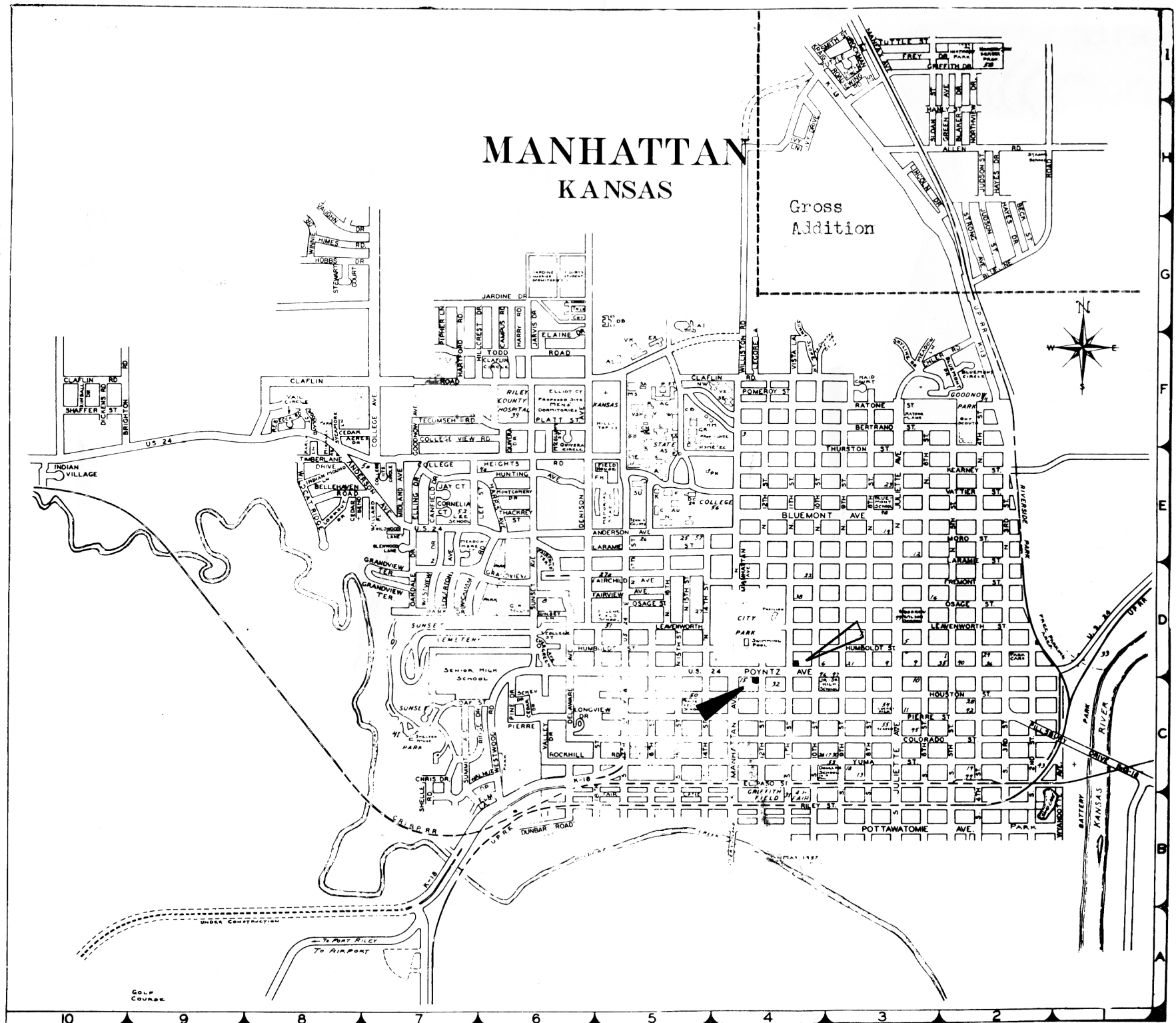
7. Would you say that the gasoline sold by the different companies are all pretty much alike, or do you think that some are better than others? Alike \_\_\_ 65 (67) Some better \_\_\_ 32 (33)

Age groups:	Under 35	52 (26)*	Male:	65 (74)*
	35 to 49	25 (39)*		
	50 and over	23 (33)*	Female:	35 (26)*

EXPLANATION OF PLATE I

Map of Manhattan showing (1) Gross Addition which was excluded from the local survey (2) Dawson's Conoco, 1030 Poyntz Avenue  and (3) Wickham's Conoco, 1201 Poyntz Avenue .

## PLATE I



EXPLANATION OF PLATE II

- Fig. 2. Total monthly gasoline sales\* (rounded to the nearest 1,000 gallons) for the period June 1, 1955, through May 31, 1958.
- Fig. 3. Total monthly oil sales\* (rounded to the nearest 25 gallons) for the period June 1, 1955, through May 31, 1958.
- Fig. 4. Total monthly revenue from labor services\* (rounded to nearest \$50.00) for the period June 1, 1955, through May 31, 1958.
- Fig. 5. Total TBA sales\* (rounded to nearest \$50.00) for the period June 1, 1955, through May 31, 1958.

KEY

- Dawson's Conoco
- Wickham's Conoco

\*Due to the confidential nature of the data, all figures have been multiplied by a constant; as shown above they are somewhat understated.

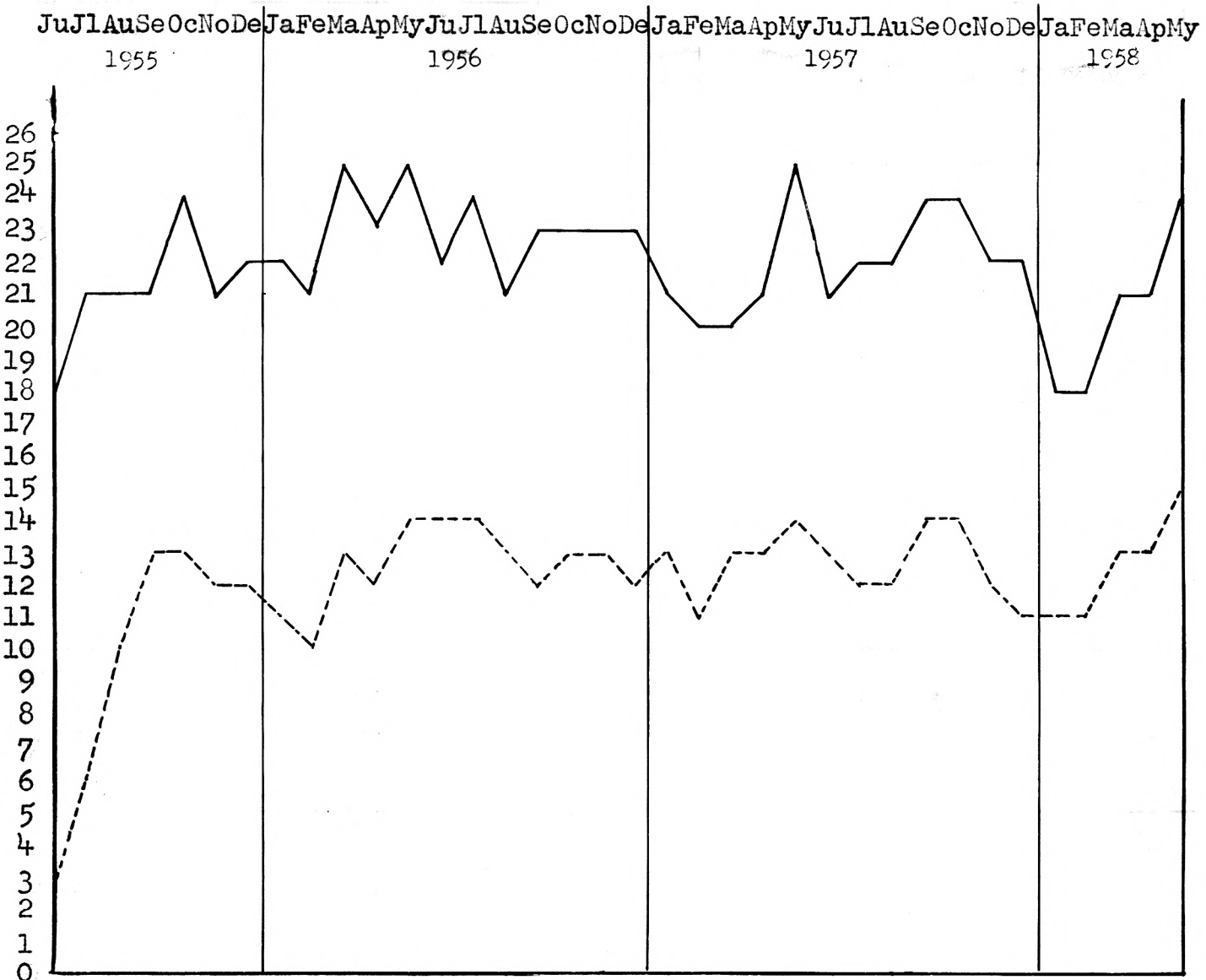


Fig. 2.

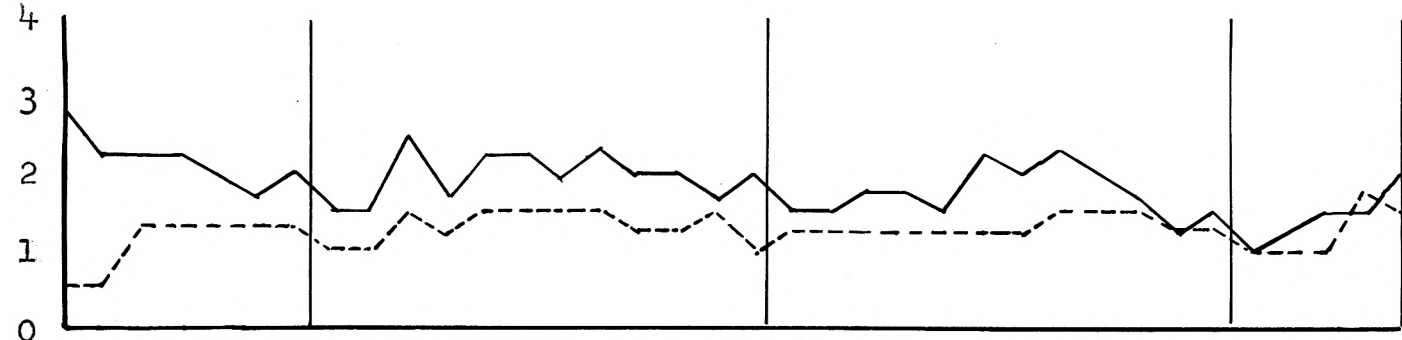


Fig. 3.

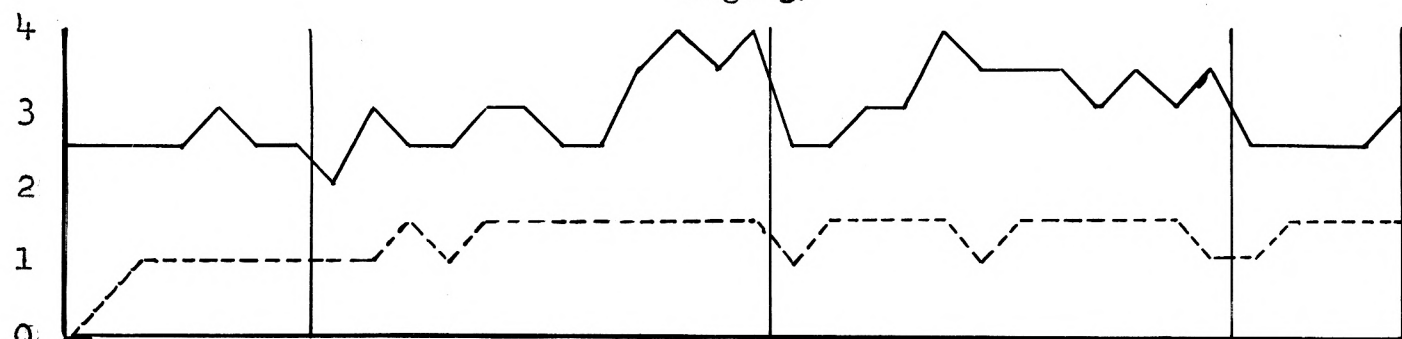


Fig. 4.

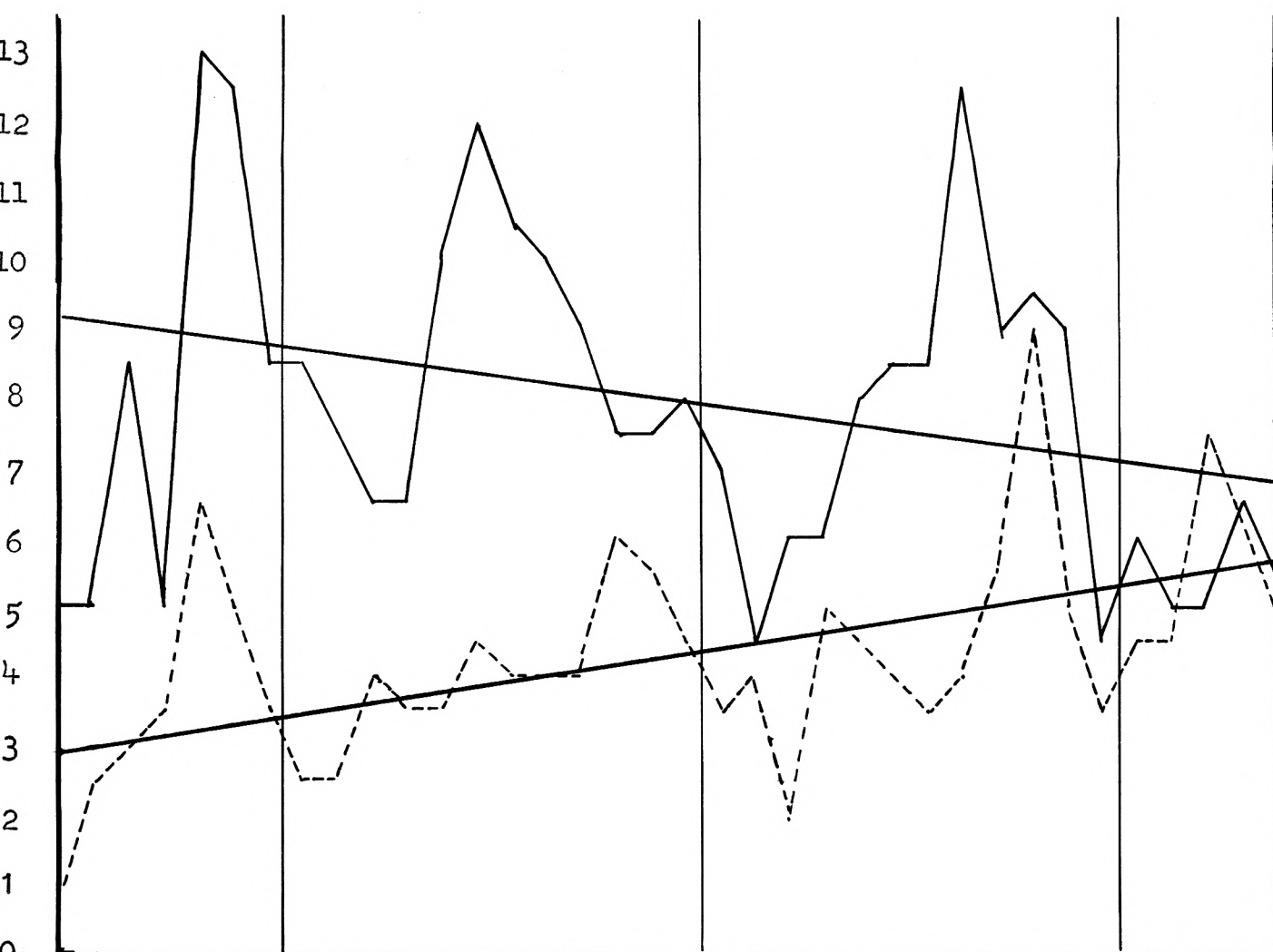


Fig. 5.

**FACTORS DETERMINING ACQUISITION AND RETENTION OF CUSTOMERS  
IN THE RETAIL PETROLEUM INDUSTRY - A CASE STUDY**

by

**CLIFFORD REVERIE BECK**

**B. S., Kansas State College  
of Agriculture and Applied Science, 1957**

---

**AN ABSTRACT OF A THESIS**

**submitted in partial fulfillment of the**

**requirements for the degree**

**MASTER OF SCIENCE**

**Department of Economics and Sociology**

**KANSAS STATE COLLEGE  
OF AGRICULTURE AND APPLIED SCIENCE**

1958

The purpose of this case study was to identify and evaluate some of the factors determining acquisition and retention of customers in the Manhattan retail petroleum industry. Such factors are important to any business. Some of them are vital to the success of a service station because consumers generally believe petroleum products are very much alike.

Considerable research had been done to determine patronage factors on national and regional bases. There seemed to be no apparent reason why these findings, if appropriately modified, should not apply to Manhattan motorists. Only a local study could confirm this, however, and might conceivably suggest appropriate modification. Also, an application of these findings to particular stations would provide a means of evaluating the factors determining customer acquisition and retention.

A combination systematic and quota sample of adult Manhattan motorists was surveyed to determine what correlation existed between their buying habits and motives and those attributed to midwestern motorists by various du Pont studies. During the interviews (accomplished in March 1958) the respondents were asked some of the same questions asked by the du Pont interviewers.

The second part was a comparative study of service station sales in Manhattan. The sales records of two stations selling a homogenous product in the same trade area, and having comparable accessibility and facilities were studied. This historical data provided a means of estimating the relative importance of some of the factors thought to determine service station success.

In general a rather close correlation was found between the motives and buying habits of local motorists and those attributed to midwestern motorists by previous studies.

About three-fourths of Manhattan's drivers usually buy gasoline at the same station. Almost half of them have traded there from one to four years. More Manhattan motorists are loyal to a favorite station, but their loyalty is of shorter tenure.

One-third of these "regular" customers said they started going to that station because it was convenient; for most of them this meant within seven blocks of their home, as opposed to 14 blocks for midwestern motorists generally.

The most frequent reason for continuing this patronage was found to be the service they received, but again convenience was important. This appeared to be typical of all midwest drivers.

However, among the other reasons which prompted them to try their favorite station and continue to patronize it were dealer friendship, price, credit, brand, etc. With the exception of price and credit which were of relatively greater importance, the other reasons appeared to be consistent with earlier findings.

A majority of the local drivers were found to be between 18 and 35 years of age whereas du Pont reported that roughly one-fourth of their respondents were in this age bracket.

Although local drivers indicated that service was of greatest importance for continued patronage, it could not be concluded from this study that they desired more service as was suggested by some of the related literature. With the exception of a clean windshield, the local driver indicated less desire for individual items of service, paid



and free, than was attributed to midwestern drivers generally. This would appear to support the du Pont finding that younger motorists are not as service conscious. On the other hand, it may indicate a desire for complete and thorough service on one occasion and limited but fast service on another.

In the comparative study of sales records, both endogenous and exogenous factors were found to have influenced the sales volume reported by the stations studied.

While the very important factor of personnel was not studied, some of the other endogenous factors which appeared significant were:

1. Those affecting sales volume:
  - a. Hours open for business
  - b. Number of islands and/or pumps
  - c. The extent of paid services offered
  - d. The adaptability of tire inventory policy
  - e. Station promotion
2. Those affecting sales stability:
  - a. Twenty-four hour service
  - b. Occupational distribution of customers

Among the exogenous factors which were found relevant were:

1. Those affecting sales volume:
  - a. Traffic passing station site
  - b. Changes in automobile population
  - c. Systematic brand advertising
  - d. Technology as it affects demand
  - e. Local pricing policies

2. Those affecting sales stability:
  - a. Movement of students in and out of Manhattan
  - b. Weather
  - c. Conferences, sporting and social events

While both stations studied appeared to have been efficiently and successfully operated, it was felt that their competitive position could be enhanced. These recommendations were based on the findings of this study, and the published results of related works.

The operator, who wishes to derive greater satisfaction from his service station, should:

1. Make every attempt to satisfy the individual customer's demand for service. A plan should be adopted for designating and posting certain islands and/or pumps as "Express Service" such as modern supermarkets have done. The remaining islands and/or pumps should then be identified as "Red Carpet Service." At the former fast service would be emphasized, while at the latter thorough and complete service would be rendered.
2. Promote the use of credit cards, and make use of the special services provided by the local credit bureau.
3. Special effort should be made to solicit the business of all motorists living near the station.
4. Adopt a systematic approach to station promotion.
5. Either enlist the cooperation of the city in trimming the trees in the vicinity of the station, or alter the height of the pole sign so that it can be more readily seen by approaching motorists.
6. Encourage customers to use premium grade gasoline. Most motorists who do, believe it to be a better product.

7. Be proud of the service rendered to the community by his business. Also, encourage such pride among his employees.
8. Provide some incentive plan for employees.
9. Be prepared to exploit the forthcoming potential in repair work.
10. Assign more of the routine tasks to employees, and use his personal energy for the more important managerial functions.