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Personal, Social, Psychological and Other Factors in Ridesharing Programs

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16. Abstract

An in-depth investigation of the ridesharing programs in the Baltimore and suburban Washington, D.C. areas was needed in light of the apparent difficulty in increasing ridership on the existing ridesharing programs. Many of the studies done on ridesharing suggest that social, psychological and other personal factors may influence ridesharing as much as economic factors such as saving gasoline. To understand personal, social, psychological and other factors affecting ridesharing programs, the "Ridesharer Survey" was designed and administered. The analysis of this survey was performed from two idfferent aspects. One involved general statistics. Here, all the ridesharers were considered as one group and their general characteristics were analyzed. The other was a comparative statistical analysis in which ridesharers were grouped into different categories, such as by income, age, sex, marital status and race etc. and their statistics were compared to determine how these variables affect ridesharing. An "Agency Survey" was performed to study in a systematic way the reasons for varying levels of effectiveness of ridesharing programs offered by different organizations. The objectives of the agency based survey were to find: 1) the relationship between employee size and the number of employees engaged in ridesharing programs; 2) the role of the Vango program in Maryland; and 3) the effectiveness of specific incentives offered by various agencies. The incentives included were: 1) free parking; 2) preferential parking; and 3) subsidies for ridesharers.

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I

INTRODUCTION

I.1 Problem Definition

Planning, management and operation of most ridesharing programs depend on the gathering of information and the matching of prospective riders through computer programs, or through physical matching procedures, based on:[1]

1) Origin (home) and destination (workplace);
2) Telephone numbers, addresses at home and work; and
3) Other personal details including, for example, starting and closing times on the job.

A typical solicitation of riders for a carpool is usually done by placing a location map and a sheet at the lobby of the agency. Prospective riders are then requested to supply detailed information including names, departments, telephone numbers and extensions and home addresses.

Problems can arise with the above approach of soliciting prospective riders. The major difficulty involves two interrelated issues: the individual or prospective rider and the total or all the prospective riders in a program.

At the individual level, factors such as a person's background, attitude, perception and demographic characteristics may affect the potential success of a ridesharing program.[2] In the larger context, it is expected that the total ridesharing public may influence the potential of any given ridesharing program. Some of the factors at the larger, societal level may include police protection, availability of parking and the strategy adopted to implement the program.

In spite of the fact that some studies have identified the contribution of personal, social, and psychological factors to the success or failure of ridesharing programs, most ridesharing publicity and marketing programs still focus only on the physical and computer matching of people.[3]

In the State of Maryland, the regional ridesharing effort has been consolidated into a city and state "computeride" data base through Vango, a third party brokerage state organization. The master file contains approximately 20,000 names, and a computer routine is supposed to allow expanded geographical coverage and increased data storage. Vango continues to promote ridesharing programs through computer-based techniques with about 343 vans in Maryland.[4] Unfortunately, this approach has not been able to maximize the utilization of ridesharing programs. At the national level, the U. S. DOT manual for employers, which explains how ridesharing can help a company, recommends matching programs based on divulsion of privacy (telephone numbers, addresses, maps and forms at company bulletin boards). It goes on to recommend that:

> "Matching can be done by computers, which handle large volumes of forms...(and) provide low cost individual printouts for each applicant of fellow employees. Computer printouts should be prepared in the form of a personal letter to prospective poolers providing the names, complete information, about other employees."[5]

The above practices continue in spite of the fact that some studies, as indicated earlier, have found out that social dynamics do play a major role in setting up pools.[6] A study by Margolin and Misch revealed three basic facts: (1) the ride to work is intensely a personal matter; (2) 85 percent of people surveyed said they would want to meet prospective pool members at least once before making any arrangements; and (3) 40 percent actually felt that they would have to know fellow riders first before participating in carpools.

Another objective which some promoters of ridesharing over-emphasize is the savings in gasoline costs. Some studies have shown that social, personal and psychological factors may have a far larger implication as far as attracting new people than the cost of gasoline. A recent survey revealed that when poolers were queried about why they joined a pool, 41.1% cited cooperative or social reasons; and only 31.5% said they sought savings of money on gasoline.[7]

It may be the case, however, that these observations, while generally applicable, may not apply to the Baltimore metropolitan area with its heavy

concentration of white collar jobs, its proximity to Washington, D.C., and the relative affluence associated with these two variables. This study will thoroughly explore these economic arguments.

Another problem which reduces the effectiveness of ridesharing promotion and marketing programs is the lack of comparative knowledge about successful and unsuccessful programs. For example, it is known that some selected employer-sponsored programs have high efficiency and success rates in terms of attracting ridesharers. In the U. S., there are successful employer-sponsored agencies like 3M Corporation (Minnesota),[8] Conoco (Texas)[9] and the TVA system in Tennessee. In the State of Maryland, there are successful employer-sponsored programs like those operated by the National Security Agency (Fort Meade), Social Security Administration (Baltimore), Commercial Credit (Baltimore) and Westinghouse (Hunt Valley).[10] (See Table I-1.) On the other hand, there are less successful employer sponsored programs in the State of Maryland which include programs operated by the Anne Arundel County Government (Annapolis), Betchel Power (Gaithersburg) and the Westinghouse (Linthicum).[11]

This study, focusing on Maryland, will add further indepth knowledge to our total store of information regarding ridesharing programs.

I.2 Need for a Study

The above cited facts concerning the various ridesharing programs present difficulties and problems when it comes to policy regarding ridesharing promotion. For example, why are some employer sponsored programs (Betchel Power, Westinghouse, etc.), less successful? Why should one Westinghouse (Hunt Valley) program be more successful than the program at a similar Westinghouse facility located in Linthicum?

This suggests a need to study in a systematic way the reasons for varying levels of effectiveness of ridesharing programs offered by different kinds of organizations, i.e., private companies, government agencies including Federal, state and local organizations. Such information will assist us in identifying the major factors that have to be considered in developing effective ridesharing programs. In addition, much work remains to be done in evaluating effective ridesharing programs. Ridesharing, along with other innovative and less capital intensive programs, will plan an important role in energy conservation. For example, in 1981, the State of

TABLE I-1

MARYLAND VANPOOLS BY TYPE AND LOCATION

Type-Firm	Location		Number of Vans
OWNER-OPERATED			
Social Security Administration	Woodlawn		27
National Security Agency	Fort Meade		09
All Others	Various		44
		TOTAL	80
THIRD PARTY LEASED (THRU VANGO, INC.)			
National Security Agency	Fort Meade		36
Social Security Administration	Woodlawn		11
Montgomery County Government	Rockville		05
Bechtel Power	Gaithersburg		09
Various	Maryland		41
Various	Washington, D.C.		27
All Others	Various		07
		TOTAL	136
OTHER LEASING COMPANY VANPOOLS			62
		TOTAL	62
COMPANY SPONSORED			
Westinghouse	Hunt Valley		23
Westinghouse	Linthicum		02
Commercial Credit	Baltimore City		13
Peterson H&H	Hunt Valley		01
Baltimore County Government	Towson		05
AAA	Wheaton		03
Pepco	Rockville		10
		TOTAL	57
STATE ABORT PROGRAM	Aberdeen		08
		TOTAL	08
		GRAND TOTAL	343

Source: Maryland Ridesharing and Vango Computerride as of February 25, 1982.

Maryland allocated about $1.75 million to promote energy savings through imaginative transportation techniques like ridesharing.[12] In addition, as the need for careful cost-efficient choices grows, ridesharing becomes a more attractive alternative, especially given its energy saving character.

An indepth investigation of the ridesharing programs in the Baltimore Metropolitan region and Maryland suburbs of Washington is needed in light of the apparent difficulty in increasing ridership in the existing ridesharing programs. The need for such an indepth study has been recognized by Vango. The present study intends to build on the experience and ideas of other investigators, notably that of Margolin and Misch (1978), whose study on behavioral aspects of ridesharing provides the basis for the current research effort.

I.3 Study Focus

There is a need to study, in a systematic way, how current publicity and marketing methods affect potential pool riders. Many of the studies done on ridesharing suggested that social, psychological and other personal factors may influence ridesharing as much as economic factors such as saving gasoline. As stated, this study will be based on the Baltimore Metropolitan area including the Maryland suburban counties of Washington, D.C. This includes Baltimroe City and the counties of Anne Arundel, Carroll, Frederick, Harford, Howard, Montgomery and Prince Georges. This will be referred to as "the study area." It will investigate the relative weights of various factors which may influence ridesharing. Based on that analysis, policy recommendation will be made. The variables to be emphasized are:

1) Personalities (Smoker/non-smoker)
2) Incomes
3) Status/position
4) Marital status
5) Race/ethnicity
6) Privacy (A system to conceal and protect the telephone numbers, addresses, movement habits of prospective riders.)
7) Religion
8) Politics, etc.

A more detailed presentation of the above is displayed in Table I-2. The

study attempts to examine the following:

1) Publicity and marketing programs to see how pooling programs are initiated.
2) The method of solicitation in terms of the handling of names, addresses, telephone numbers and other items dealing with privacy.
3) Items and questions that are included in publicity and how they affect ridesharing.
4) The effect of the above in program enrollment.
5) The impact of management of privacy in specific programs on program enrollment.
6) Positive aspects of pooling or ridership, e.g., have the programs led to positive social meetings (good mutual friends and other forms of socializing).

I.4 Study Organization

Chapter II of this study will focus on a review of the literature pertaining to social, psychological and personal factors affecting the ride-sharing decision. Chapter III will present the study methodology which includes the manner in which the sample was drawn from the study population and the data analysis strategy. Chapter IV presents an indepth analysis of the data. Chapter V presents summary and findings.

TABLE I-2

FACTORS AFFECTING RIDESHARERS' DECISION MAKING

I. ECONOMIC

a) To save on gasoline cost
b) To minimize on travel distance/time
c) To save on commuting cost
d) To save on parking cost

II. SOCIAL STATUS/DEMOGRAPHICS

a) Sex (male, female) - to socialize
b) Status/Position - to meet colleagues
c) Marital (married, single, etc.) - to meet the opposite sex
d) Income (level) - to mingle with people with similar backgrounds
e) Ethnicity (Black, White, etc.) - to associate with others of similar backgrounds

III. PERSONAL

a) Personal traits (smoking, appearances, etc.)
b) Privacy (anonymity, telephone number, addresses, etc.)
c) Ethnicity (Black, White, etc.)
d) Politics/Religion

IV. PSYCHOLOGICAL/PERCEPTIONS

a) Perception of prospective riders
b) Fear of potential crime
c) Potential divulsion of privacy
d) Sense of security

V. OTHER INCENTIVES

a) Special parking privileges
b) Employer sponsorship
c) Convenience, e.g., pick up time, drop off time, etc.
d) Others

ENDNOTES

[1]Ridesharing is used in its generic sense to include both carpooling and vanpooling. Distinctions will be made when appropriate.

[2]J. B. Margolin and M. R. Misch, Incentives and Disincentives for Ridesharing: A Behavioral Study, FHWA, U. S. DOT, 1978.

[3]Ibid.

[4]Department of Natural Resources, 1981 Maryland Energy Conservation Plan, submitted to the U. S. Department of Energy, Maryland Energy Office, December 31, 1980, pp. 52-53.

[5]U. S. DOT, How Ridesharing Can Help Your Company: A Manual for Employers, U. S. DOT, May 1980, p. 11.

[6]Margolin and Misch, op. cit., p. vi.

[7]Ibid.

[8]Owens, R. D. and H. L. Sever, The 3M Commuter Van Program: Status Report #2, St. Paul, Minnesota, 1977.

[9]Conoco, Vanpooling: An Energy Conservation Project, Conoco Special Services, Houston, Texas, 1980.

[10]Vango, Ridesharing Awareness Survey, and Maryland Vanpool Profile, Prepared by Mass Transit Administration, Planning and Program Development Division, Maryland, Department of Transportation, 1981.

[11]Ibid.

[12]1981 Maryland Energy Conservation Plan, op. cit.

II

LITERATURE REVIEW AND REVIEW OF EXISTING MARYLAND RIDESHARING PROGRAM

II.1 General Literature Review

Since the advent of the phenomenon of ridesharing, there have been studies geared to measure the factors which affect people's willingness to carpool or vanpool. One of the main reasons for participating in ridesharing programs is economic - that of savings in commuting costs. This was the dominant view, especially, in the initial stages of the Arab oil embargo of the early 1970s when ridesharing became a popular alternative.

However, most recent studies have found that while economic reasons may be important, there are other non-economic reasons why people rideshare. This part of the report will present the most important studies which have focused on this aspect of ridesharing.

II.1.1 Sex and Acquaintance

A study on attitudes and participation rates in carpooling was conducted by Dueker and Levin (1976) in Iowa.[1] The authors reviewed a carpooling experience in Iowa as measured by conventioned survey methods and then described an experimental study of attitudes towards carpooling. The information integration approach was used in experimental psychology was the methodology used. This analyzes how a variety of factors are combined or integrated to determine human judgements and decisions. As shown in the previous chapter, Table I-2, was derived from the study, and presented the factors which might influence a subject to rideshare. The factors, as noted, range from economic to personal and psychological and social.

Dueker and Levin conducted their experiment by the examination of the perceived desirability of carpools to vary as a function of "personal" factors such as sex of each rider and whether or not the rider was a prior acquaintance of the respondent. Participating in the experiment were 19 female and 16 male undergraduate students at the University of Iowa. The study assumed that they lived about 10 miles from school, and that the area in which they lived potentially contained carpoolers. The students were asked to rate the

relative desirability of a series of hypothetical carpool variables including the number of riders, the sex of each rider and whether each rider was an acquaintance or a student with whom they did not know.

The results and conclusions are significant. First, both male and female respondents gave the lowest ratings to male non-acquaintances. For both sexes, carpools with a female rider were rated higher than those with a male rider. Not only were pools with a female rider rated higher than those with a male rider, but carpools were rated higher when the rider was an acquaintance than when he or she was a non-acquaintance.

The conclusions of this finding for ridesharing marketing and policy is obvious. In simple terms, if the rider is an acquaintance, the sex of the rider is of little consequence in the formation of ridesharing groups. But, if the rider is not an acquaintance, males prefer a rider of the opposite sex and females prefer a rider of the same sex.

The work recommends that carpool organizers:

> "...use a 'chaining' approach where rider 1 supplies the name of rider 2 who in turn supplies the name of rider 3, etc. In that way, every rider has at least one acquaintance to offset the undesirability of forming carpools with male non-acquaintances."[2]

II.1.2 Psychosocial Factors

Of significant importance to the study of the role of psychological attitudes in ridesharing is the work of Horowtiz (1975). He provided a framework whereby attitudes, including cognitive beliefs affecting behavioral intention, can influence carpooling. It was hypothesized that an individual has a set of positive and negative evaluations about carpooling. Positive and negative evaluations rarely balance each other out evenly. Rather, actual behavior is the result of personal evaluations and the perceived advantages and disadvantages of one course of action as opposed to another. Based on his analysis, Horowtiz developed a mathematical model of carpooling intention which was applied to the data collected in the Chicago area in order to explore how perceived advantages and disadvantages of ridesharing determine behavioral predispositions.

According to research findings by Rosenberg and Fishbein and Sheth it has been shown that social, personal and psychological factors are in the promotion of ridesharing. The research concluded that attitudes towards ridesharing and driving alone can provide results that have bearing on how to develop ridesharing programs. With the exception of people with high socio-economic background, the study found that the promotion of ridesharing programs based on public interest issues of energy, traffic, air quality, and so on may have a poor chance of changing people's attitudes towards ridesharing. Also, this study found that perceptions of economic gains may play a minor role in the determination of behavioral predisposition toward ridesharing.

To override negative perceptions of ridesharing, the study urged ridesharing campaigns to address the positive aspects of ridesharing. But of equal significance, in terms of behavioral patterns in ridesharing, was the Margolin and Misch study which is discussed in the next section.

II.1.3 Behavioral Aspects

The behavioral nature of ridesharing is best presented by the Margolin and Misch (1978) study on incentives and disincentives for ridesharing. The study is based on the view that "decisions about ridesharing are influenced by two interrelated systems - one involving issues relevant to the individual (microsystem) and the other involving factors determined by society as a whole (macrosystem)."[3] The individual or micro factors which might influence a person to rideshare, might include a person's background, attitudes, perceptions and demographic characteristics. At the larger, macro level, the way and manner, and the nature and management of ridesharing programs could have tremendous effects on the success or failure of the participation in a ridesharing program.

Based on the above, twenty-one group discussion panels were formed from about 800 commuters in the Washington, D.C. metropolitan area to enable the researchers to generate hypotheses about ridesharers' perceptions, attitudes and behavior. A survey questionnaire was developed subsequent to group discussions, which was administered to 516 commuters, both carpoolers and solo drivers. Some of the findings in terms of socio-demographic and perceptual factors, germaine to carpoolers, included the following:

1) Men tended to carpool somewhat more than women.
2) Forty-one percent of the carpoolers cited cooperative or socializing reasons for ridesharing; 31.5 percent said they sought savings of money on gasoline; 14.6 percent disliked driving and 13 percent joined pools due to pressure - mainly as a result of not having any other option.
3) Six critical factors commonly important to carpooling included time, cost, convenience, parking, carpool lanes and social dynamics. The factors regarding social dynamics, and how carpool members interact emerged from the study as the basic reason why people rideshare.

This study also found that riding to work was an intensely personal matter. Eighty-five percent of the people interviewed indicated that they would require meeting prospective pool members at least once before making final plans, and of significance, about 40 percent indicated that they would have to at least know the prospective riders first.

Carpoolers found the socializing aspect of ridesharing to be pleasant, but had misgivings about handling personal disagreements and making rules. For example, the study found that smoking disturbed both ridesharers and solo drivers and that those who firmly disliked it would not tolerate it at all. Finally, the study suggested that commuters do not want to be thrown into a carpool by chance and that people want to know a great deal in advance about the persons with whom they might carpool. These findings reinforce similar conclusions reached by the Dueker and Levin study.

II.1.4 Conclusions

The above studies make a sound base for the premise that analysis of social and psychological aspects of ridesharing is important. It seems that individual and/or group reactions to ridesharing cannot be explained exclusively in terms of level-of-service or economic and locational variables. Psychosocial, personal and attitudinal variabled involving number of riders, acquaintanceship, sex, race, age/life cycle, peer group, social pressure, degree of privacy and personal independence need to be investigated. This study will investigate the relative importance of the above factors.

II.2 Review of Ridesharing Activities in Maryland

This section of the study focuses on ridesharing activities in the State of Maryland. Most of the information is based on the various ridesharing status reports produced by Vango and ridesharing coordinators of various government agencies.[4] A look will be taken at various ridesharing activities and the activities of Vango; the third party broker agency. In addition, the organizations and agencies offering ridesharing programs in one form or another are analyzed. The data was obtained by an agency/organization survey.

II.2.1 State Highway Administration's Ridesharing Program

The Federal Clean Air Act (1970) required the State of Maryland to develop a State Implementation Plan (SIP) for reducing air pollution. One of the procedures called for in the Transportation Control Plan, which lists all transportation measures in the SIP that will be undertaken to reduce traffic and improve air quality, is the implementation of ridesharing programs. The ridesharing program also provides one of the facets by which the Department contributes to the Governor's Energy Contingency Plan. This plan consists of a series of measures which can quickly be implemented to alleviate the effects of a fuel shortage crisis. In addition, the establishment of the Transportation Systems Management (TSM) emphasis by the U. S. DOT mandated consideration of alternative low capital investments.

The Maryland Ridesharing Office has experienced an average increase of approximately three percent of the employees reached by the State's promotional effort. As of April 1980, approximately 200,000 employees had been reached and about 6,000 people are involved in ridesharing.[5]

A component in the success of ridesharing programs is the availability of safe, convenient park-and-pool or park-and-ride areas.

In the period since the 1979 Transportation Control Plan, Maryland Department of Transportation and several other jurisdictions have been active in the construction of new park-and-pool areas. 1,175 spaces have been added to the region's inventory since 1980. Development of the existing ridesharing network has proceeded with careful thought to public service and fiscal responsibility. While $900,000 was allocated in Fiscal Year 1983, the Highway Administration will be adding 535 spaces at a cost of $795,000.

For the following several years, the amount to be allocated for independent ridesharing development will be approximately $500,000 annually.[6]

II.2.2 Vango

Vango is a non-profit cooperation which acted as a broker between an interested group of individuals or a corporation and a leasing company in securing the use of a van selected by competitive bidding. The other two methods for vanpooling arrangements and acquisition in Maryland include company-owned and operated vans and individually-owned and -operated vans.

Vango's function as a third party broker has been discontinued since 1978. It is not merely an advisory committee comprised of representatives from all the counties in the State of Maryland. Its original function as a third party broker has been taken over by the Mass Transit Administration (MTA), the state transit agency.

Vango was founded to solve some of the problems facing ridesharing activities in the Washington-Baltimore Metropolitan areas. These included:

1) The burden of administering and financing the vehicle fleet. (Vango and leasing company provided such support.)
2) Restrictions against Federal sponsorship of vanpool programs for Federal employees. (Vango was not constrained by this regulation.)
3) Concern about the liability of employers, individual drivers, and/or riders. (There is limited liability for companies or individuals participating in the program and the insurance has expanded recently to recognize ridesharing as a transportation alternative.)
4) The possibility of large capital losses from vanpools that fail. (There is no financial liability to companies or individuals.)

Vango was also organized to solve a host of institutional barriers. For example, a state law had to be enacted to exampt vanpools from Maryland Public Service Commission regulation. Under a law, enacted in May 1976, a "company vanpool" was defined as a vehicle carrying up to 15 persons. The law also gave special provisions for vanpools in terms of registration, annual safety inspections; minimum insurance coverage; vanpool license tags, etc.

A major instance in which Vango helped the overall development of ridesharing activities in Maryland was in 1976 when it was able to secure a favorable ruling which made it possible for individuals to operate non-profit vanpool services. Vango also secured insurance coverage in 1977 for Vango operators. In 1977, it also secured an informal opinion exempting Vango operations from the Interstate Commerce Commission. Since Vango vanpools involve for-hire transportation, no authority from the Commission was required.

With the above hurdles over, Vango was inaugurated in March 1977, and the Vango office formally opened in November 1977. In terms of management and organization, Vango operated under a Board of Directors representing the Maryland Department of Transportation, local governments and the private sector. While the Board set policy, a Director of Ridesharing administered carpooling, vanpooling and ride matching operation (computeride).

Under this organization, Maryland Ridesharing and Vango worked closely with a team of county ridesharing coordinators who actively promoted the program's services and activities within their localities. Staff members were from the City of Baltimore and Baltimore, Anne Arundel, Harford, Carroll and Montgomery Counties.

Most of the funding for Vango came from the FHWA, with matching Maryland Department of Transportation funding. Other sources of funds came from the U. S. Department of Energy through the Maryland Energy Policy Office. Since its inception, Vango also received funding from other miscellaneous sources.

ENDNOTES

[1]Dueker and Levin, An Experimental Study of Attitudes Towards Carpooling, 1976, p. 19.

[2]Ibid., p. 26.

[3]Margolin and Misch, op. cit., p. 3.

[4]U. S. DOT, Vango: A Status Report After 17 Months of Operation, prepared for Maryland Department of Transportation and Vango, Inc., June 1979.

[5]John M. Bailey. "Vanpool Markets." Regional Planning Council, April 1982, p. 7.

[6]Bureau of Highway Planning and Program Development, Office of Planning and Preliminary Engineering. "Ridesharing Survey of State Highway Administration Lots," SHA, Maryland Department of Transportation, 1983.

III

METHODOLOGY

A stratified sample of federal, state, local and private agencies was drawn. Included in each strata of the sample were successful and unsuccessful programs, both employer and non-employer supported.

There is a wide array of variables which may be used to describe the success or failure of a ridesharing program. The first item considered was the degree of participation at each organization or company. This is defined as the number of ridesharers in a given agency divided by the number of people employed at the agency. The participation rates for selected organizations are shown in Table III-1.

In order to make the sample as inclusive as possible, as well as to reflect other factors, other variables were also considered for the selection of the organizations. Since most organizations give as an incentive parking privileges to ridesharers, utilization rates at carpool parking lots may also be used to designate the degree of success and participation in a given ridesharing program. The utilization rate may be defined as the number of vehicles in a ridesharing program versus total available parking capacity available at an agency. In some agencies, the programs depend on vans. In Maryland, until recently, these vans were obtained through Vango - the third party ridesharing brokerage agency. Therefore, the number of vans owned and operated by an organization may also be used to define the success or failure of a particular program. Incentives and/or agency support may also influence the participation rates in ridesharing programs. These include priority parking, cash payment or rebates, special job arrangements including early closing and/or toleration of lateness to work in some cases.

In most cases, the choise of organizations for study also reflected the degree of management support for ridesharing activities. Basically, there are two types of management support. In the first instance, there are agencies where management unequivocally supports ridesharing activities. Their support is reflected in designating top management to coordinate ridesharing programs

TABLE III-1

PARTICIPATION RATES IN SELECTED RIDESHARING ORGANIZATIONS

Federal Agency	Agency Type	No. of Employees	Ride-Sharers	Participation Rates
Federal Office, Baltimore	Federal	6,600	800	.105
Health Care Financing Admin.	x	2,500	600	.264
Health Care Financing	x	17,000	3,500	.210
Motor Vehicle Administration	x	1,115	123	.110
National Security Agency	x	Confidential		.550
U. S. Coast Guard	x	1,000	100	.100
U. S. Naval Academy	x	1,900	90	.047
State Agencies				
Admin. Offices of MD Courts	State	100	19	.19
MD Dept of Transportation	x	125	41	.330
MD Dept of Treasury	x	743	92	.124
MD Dept of Treasury Income Tax	x	756	225	.298
MD Dept of Natural Resources	x	570	89	.160
MD Law Lib & Courts of Appeal	x			
MD Legislative Reference Svc	x	200	17	.090
Regional Planning Council	x			
State Aviation Admin & BWI Complex	x	1,897	172	.090
World Trade Center	x	1,100	393	.357
Local Government				
A.A. County Employees	Local	3,200	675	.210
BG&E Company	x	2,000		
Department of Education	x	600		
Harford Community College	x	600	2	.003
Private Companies				
AAI Corporation	Private	2,500		
Aeronautic Radio	x	500	4	.008
American Cynamid	x	325	10	.03

TABLE III-1 (Continued)

Federal Agency	Agency Type	No. of Employees	Ride-Sharers	Participation Rates
A. A. General Hospital	x	1,150	20	.017
Bata Shoe Company	x	1,500	200	.13
Bendix Corporation	x	130	60	.462
Betchel Power Corporation	x	2,800	525	.19
C&P Telephone	x			
Columbia Data Products	x	200	20	.10
Equitable Trust Company	x	800	70	.09
Franklin Square Hospital	x	1,900		
Hazleton System	x	330	150	.45
Hittman, Inc.	x	58	6	.10
Johns Hospital Hospital School of Medicine	x	10,000		
Koppers Company	x	400	15	.375
Loyola College	x	475	50	.105
Marriott Corporation	x	1,800	100	.155
Maryland General Hospital	x	1,800	5	.002
Maryland National Bank	x	2,500	200	.08
Merch Hospital	x	1,400		
St. Joseph Hospital	x	2,000+	100	.050
Sinai Hospital	x	2,500	200	.080
Sheppard Pratt Hospital	x	850		
Union Memorial Hospital	x	1,800	100	.18
Vitro Labs	x	18		
Westinghouse	x	12,000	53	.004
First American Bank of Maryland	x	175	55	.31
Robert Eastern	x	1,000	25	.055
St. Agnes Hospital	x	2,400		

at the agency. In Maryland, there were a few such agencies ranging from private companies to Federal agencies.

At some agencies, the second type of support is apparent. In this case, management favors ridesharing but it does not actively participate or provide any monetary incentives.

In this study, the agencies chosen also reflected geographical and political boundaries in Maryland. Attempts were made to study agencies in Baltimore City, in Baltimore County, and in adjacent counties (Ann Arundel, Prince Georges, Howard, Frederick, and Montgomery). In essence, as stated before, the study area was the Baltimore metropolitan area including the Maryland suburban counties of Washington. While the information presented was based on a rather large rate of response to a survey instrument, it must be borne in mind that respondents' answers to such questions can only be assumed to reflect an accurate view of reality. A summary of questionnaires, quantified and grouped by categories, where appropriate, was analyzed and reviewed in the following chapters IV and V.

The agency questionnaire, included in Appendix A, was designed to determine the reasons for varying levels of agency effectiveness of ridesharing programs offered by different organizations, i.e., private companies, government agencies including those at the Federal, state and local levels. Fifty organizations were selected to be studied via ridesharing coordinators where available. Forty one agencies actually participated. Such information obtained will assist us in identifying the major factors that have to be considered in developing effective ridesharing programs.

The ridesharer survey, included in Appendix B, was designed to investigate the relative weights of various factors which may influence ridesharing. The survey was designed based on preciously-done studies on ridesharing which suggested that social, psychological and other personal factors may influence ridesharing as much as economic factors. The variables to which emphasis was given are:

1) Reasons for ridesharing;
2) How people learned of ridesharing programs;
3) Personal and other details divulged;
4) Reaction to information dissemination;
5) Factors that might lead to hesitation;

6) Reasons for choice of current or potential carpool partner(s);
7) Reasons for unsatisfactory match;
8) Employer incentives;
9) Automobile ownership;
10) Ridesharers' status (income, sex, age, marriage, occupation, etc.); and
11) How social, psychological, personal and economical factors affect ridesharing programs, etc.

The survey questionnaires to the ridesharers were distributed, mainly, through the vanpool/carpool coordinators of various agencies with pre-paid, pre-addressed envelopes. Most agencies welcomed this approach and only a few showed lack of cooperation. In these cases, actual on-site interviews were made.

Ten to 15 questionnaires were contained in each package. A total of 507 questionnaires were delivered to randomly-selected ridesharing participants within each agency within the sample. Of these 507 questionnaires, 378 were completed and returned yielding a response rate of approximately 73%. This high rate of return was mainly due to successful promotional efforts by ridesharing coordinators of sampled agencies. In addition, such a high response rate reduces the margin of error.

IV

ANALYSIS OF RIDESHARING AGENCY SURVEY (CHARACTERISTICS OF RIDESHARING ESTABLISHMENTS)

IV.1 Analysis of Survey Results

The sample was drawn in such a way that it represented the geographical distribution of agencies and types of agencies in the study universe. It was drawn purposely. Tables IV-1 through IV-3 portray the characteristics of the sample.

Table IV-1 shows the composition of surveyed agencies in terms of its type.

TABLE IV-1

Agency Types

Agency Type	Frequency	Percent
Federal	5	12.2
State	5	12.2
Local	2	4.9
Private	29	70.7
TOTAL	41	100.0

As illustrated on Table IV-2, suburban agencies (suburban Washington and Baltimore) account for 50 percent of the agencies participating in ridesharing programs while downtown agencies (downtown D.C. and Baltimore) account for 30 percent of participating agencies. Specifically, 46 percent of the suburban agencies are located in suburban Baltimore. Downtown Baltimore accounts for 27 percent of the 41 agencies surveyed.

TABLE IV-2

Location of Agencies Surveyed

Location	Absolute Frequency	Percent
Downtown D.C.	1	2.4
Downtown Baltimore	11	26.8
Suburban D.C.	2	4.9
Suburban Baltimore	19	46.3
Rural Baltimore	7	17.1
Refused to Answer	1	2.4
TOTAL	41	99.9

One objective of the agency based survey was to find the relationship between employee size and the number of employees engaged in ridesharing programs. According to Douglas W. Wiersig, it is essential to have at least 500 employees to initiate carpool matching program or vanpool program.[1]

Table IV-3 shows the sizes of the agencies sampled. Agency size was a function of the number of employees. The purposive sample was drawn to include agencies of each of the sizes shown by the table. The nine agencies having less than 500 employees were closely investigated to determine whether it is essential to reach a certain threshold level of employees in order to initiate a ridesharing program. Also, three agencies with more than 3,000 employees each were included in order to examine ridesharing behavior in entities of this size. The remainder of the sample includes agencies with employee numbers ranging from 500 to 2,999. A complete range of sizes was thus examined. As can be seen from the participating rates developed, ridesharing behavior does not appear to be closely linked to agency size. Clearly, large organizations do not show higher participation rates.

TABLE IV-3

Agency Size

Number of Employees	Frequency	Percent	Participating Rates
Less than 500	9	22.0	.23
500 to 999	7	17.1	.11
1,000 to 1,499	5	12.1	.13
1,500 to 1,999	5	7.3	.10
2,000 to 2,499	3	12.2	.13
2,500 to 2,999	5	12.1	.13
3,000 and over	3	7.3	.13
No answer	4	9.8	--
	41	100.0	

Other important factors leading to ridesharing program success are the attitudes of ridesharers themselves as well as promotional efforts. Again, the size of the agency itself was not a major contributor to the successfulness of ridesharing programs (See Table IV-3).

It has already been alluded that ridesharing efforts emerged during the early 70's as a result of the Arab oil embargo. Ridesharing efforts in Maryland have, since their inception, been encouraged by the Federal, state, local and private agencies. This survey indicated that ridesharing efforts did not actually peak until 1981. Table IV-4 illustrates that 34 percent of the 38 agencies surveyed started ridesharing programs in 1981.

TABLE IV-4

Date Ridesharing Started

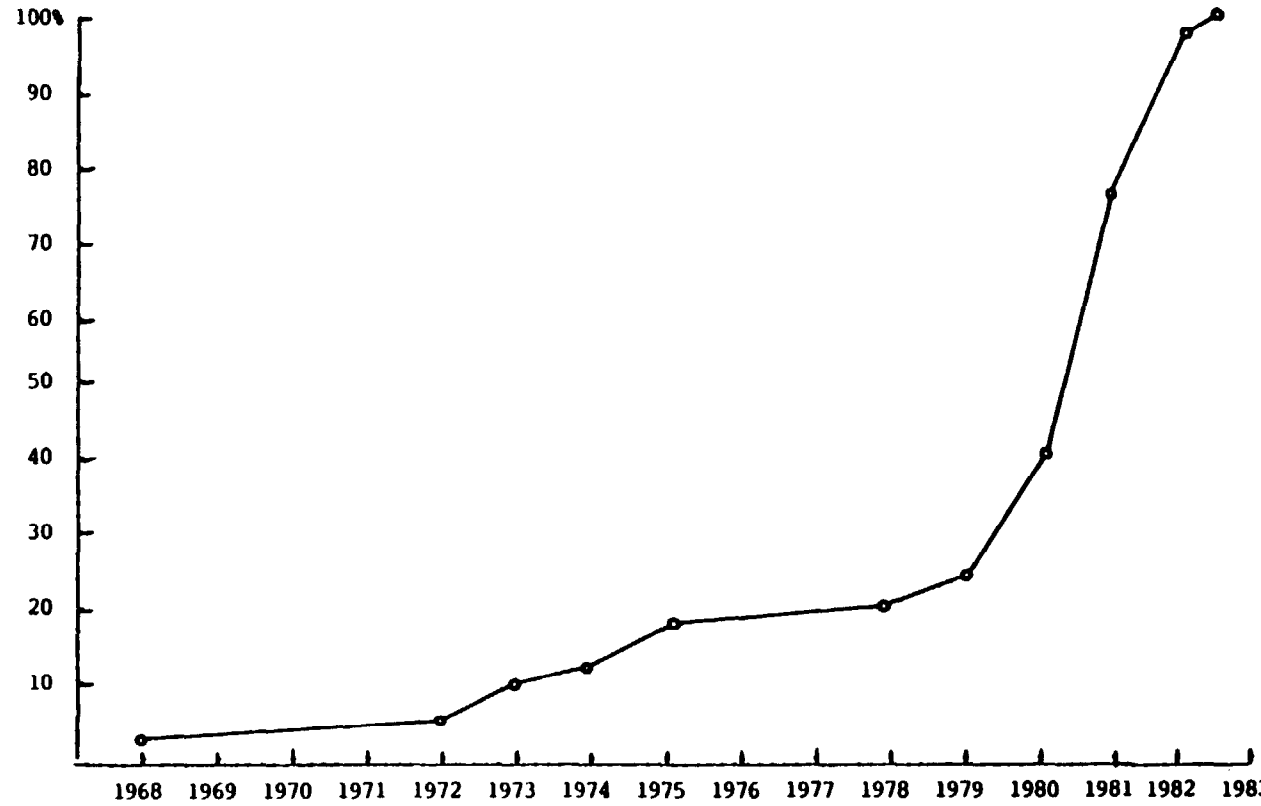
Year	Frequency	Cumulative Frequency	Percent	Cumulative Percent
1968	1	1	2.6	2.6
1972	1	2	2.7	5.3
1973	2	4	5.2	10.5
1974	1	5	2.7	13.3
1975	2	7	5.2	18.4
1978	1	8	2.7	21.1
1979	2	10	5.2	26.3
1980	6	16	15.8	42.1
1981	13	29	34.2	76.3
1982	8	37	21.1	97.4
1983	1	38	2.6	100.0
	38		100.0	

Figure IV-1 shows the cumulative percentages of ridesharing programs established between 1968 and 1983 in Maryland. This figure indicates that about 50 percent of existing ridesharing establishments were started between 1980 and 1982. It also revealed that more than 60 percent of the ridesharing programs are not more than three (3) years old. After the peak in 1981 in ridesharing programs, the pace of increase slowed in 1982 and remained steady during 1983. This may be explained by encouragement from Federal, state, local and private agencies as well as the deep economic recession which induced more active ridesharing efforts.

Table IV-5 also shows that 36 percent of sampled agencies had less than 100 persons participating in ridesharing programs. The last category (don't know) shows that 31.7 percent of the ridesharing coordinators did not know the actual number of persons participating in ridesharing programs. This suggests that the development of a better system of coordinating ridesharing effort is essential. Agencies with less than 100 participants seem to be the dominant type. This may be due to limited

FIGURE IV-1

Cumulative Percentages of Ridesharing Programs
Established between 1968 and 1983 in Maryland



capability of official coordination of ridesharing programs.

TABLE IV-5

Number of Ridesharers in Each Agency

Number of Ridesharers	Frequency	Percent
Less than 100	15	36.6
100 to 199	7	17.1
200 to 299	1	2.4
300 to 399	1	2.4
500 to 599	1	2.4
600 to 699	1	2.4
700 and over	2	4.9
Don't know	13	31.7
TOTAL	41	100.0

The survey also examined the ridesharing types operated by each agency or company of which six were identified: 1) owner operated; 2) third-party lease through Vango; 3) other leasing company; 4) agency (employer ownership); 5) employee ownership and management; and 6) private arrangements. In most cases, at least two methods of ridesharing are employed at each agency. (See Table IV-6.)

About 83 percent of the responding agencies reported at least the existence of private ridesharing arrangements. This is significant since these private arrangements almost invariably tend to be carpools.

IV.2 Role of Vango

Vango's primary objectives were to identify prospective vanpool groups, train vanpool drivers and arrange for the lease of vanpool vehicles. Since its creation, over 300 vanpools have been formed in Maryland.[2]

TABLE IV-6

Ridesharing Arrangement Types of Agencies

	Private Arrangement		Third Party Lease		Other Leasing		Owner Operated		Agency Ownership	
	Total	%	Total	%	Total	%	Total	%	Total	%
Yes	34	82.9	9	22.0	6	14.6	2	4.9	2	4.9
No	6	14.6	32	78.0	35	85.4	39	95.1	39	95.1
Other	1	2.4	--	--	--	--	--	--	--	--
Total	41	100.0	41	100.0	41	100.0	41	100.0	41	100.0

The survey sought to find out the respondent's familiarity with Vango's activity. Even though at the time of the survey, the role of Vango had changed from that of a third party broker to that of an advisory board, it was still appropriate to test the possible relevance of Vango in the ride-sharing scene in Maryland. The underlying idea for the inclusion of this series of questions on Vango was to discover the usefulness of a central clearing house agency regarding ridesharing at the state level.

When coordinators of the surveyed agencies were asked whether they were familiar with the work of Vango, they overwhelmingly (80 percent) replied that they were familiar in one way or other with Vango's activities. The second Vango question was designed to determine the types of services offered by Vango to the agencies surveyed. Since more than one service was provided to some agencies, it became necessary to treat each of the services as separate variables. Results from the study revealed that more than 68 percent of the agencies received a computer matching list from Vango (See Table IV-7).

TABLE IV-7

Services Offered by Vango
(Matching List)

Matching List	Frequency	Percent
Yes	28	86.3
No	6	14.6
Declined to Answer	7	17.1
TOTAL	N=41	100.0

Results from the response shows that more than 50 percent of the agencies surveyed received assistance from Vango in terms of arranging for the lease of vanpool vehicles (See Table IV-8) and about 50 percent received special driver training programs (See Table IV-9).

TABLE IV-8

Services Offered by Vango
(Van Acquisition)

Van Acquisition	Frequency	Percent
Yes	21	51.2
No	13	31.7
Declined to Answer	7	17.1
TOTAL	41	100.0

TABLE IV-9

Services Offered by Vango
(Driver Training)

Driver Training	Frequency	Percent
Yes	20	48.8
No	14	34.1
Declined to Answer	7	17.1
TOTAL	41	100.0

The organizations surveyed also indicated other services offered by Vango. These include, for example, general information in terms of promotion. About 63 percent of the agencies received promotional materials of some kind as well as presentations from Vango. Vango also offered marketing help to 46 percent of the agencies. Only 3 percent of the responding agencies stated that they received no services from Vango. For example, 51 percent utilized Vango for van acquisition and 49 percent for driver training.

Overall, it is important to note that 75 percent of the respondents indicated that they have received services of one type or the other from Vango. A series of questions was designed to find out the quality of service offered by Vango.

Another related Vango question was designed to determine the level of satisfaction with Vango activities. To obtain this information, agency coordinators were asked to indicate whether they were: 1) very satisfied; 2) somewhat satisfied; or 3) somewhat dissatisfied. The statistics shown in Table IV-10 indicate approximately 49 percent of the ridesharing agency coordinators were very satisfied with their experience with Vango, as compared with 12 percent that indicated that they were only somewhat satisfied. While less than 3 percent were somewhat dissatisfied, a significant proportion, 36 percent, were either not sure or declined to answer the question.

TABLE IV-10

Experience with Vango

	Frequency	Percent
Very Satisfied	20	48.8
Somewhat Satisfied	5	12.2
Somewhat Dissatisfied	1	2.4
Don't Know	5	12.2
Declined to Answer	10	24.4
TOTAL	41	100.0

IV.3 Agency Support

This section of the survey was designed to identify employer encouragement and marketing strategies of vanpools. Specifically, it is intended to identify types of support and incentives offered by the agencies. It was found that a significant percentage of the agencies (51 percent) do not have in-house computer matching programs. Table IV-11 indicates that a little over a third of the respondents indicated the existence of in-house computer matching programs. The results of the survey provide a good picture of agency vanpooling efforts.

TABLE IV-11

Ridesharing Support Through Computer Matching

Computer Matching	Frequency	Percent
Yes	14	34.1
No	21	51.2
Don't Know	4	9.8
Declined to Answer	2	4.9
TOTAL	41	100.0

Only 24.4 percent of the organizations surveyed offered any kind of marketing program. Perhaps this might be due to high reliance on Vango for this service.

Most of the marketing and promotional efforts were relied on in-house bulletin board announcements (Table IV-12) and individual advice to potential ridesharers through newsletters and related techniques (Table IV-13). In terms of marketing strategy, it would appear worthwhile for the agencies to concentrate more efforts on individuals, or perhaps design a more general marketing approach aimed at various levels of employees at the agency.

TABLE IV-12

Ridesharing Support Through In-House Bulletin Board

Bulletin Board	Frequency	Percent
Yes	18	43.9
No	17	41.5
Don't Know	4	9.8
Declined to Answer	2	4.9
TOTAL	41	100.0

TABLE IV-13

Ridesharing Support
((Advice to Potential Ridesharers)

Advice to Ridesharers	Frequency	Percent
Yes	20	48.8
No	15	36.6
Don't Know	4	9.8
Declined to Answer	2	4.9
TOTAL	41	100.0

It may be referred from Table IV-14 that ridesharing coordinators do not perceive lack of management support to be a problem. But that they believe that lack of interest from employees is a major problem affecting ridesharing programs. Results from answers to the question also suggest that lack of support from Vango, employee apprehension about ridesharing and lack of funds to undertake innovative programs were not major problems affecting ridesharing efforts. It is important to note that approximately one-third of the respondents either declined to answer or had no opinion. The high marks given to Vango reinforce the visibility of Vango in the ridesharing market and the support which Vango has been giving since its inception in 1977.

IV.4 Incentives

Specific incentives offered by various agencies participating in ridesharing programs include: 1) free parking for ridesharers; 2) preferential parking for ridesharers; and 3) subsidies for ridesharers. About 17 percent of the agencies surveyed provide free parking to ridesharers while 20 percent of the organizations indicated that they provided some kind of preferential parking for their employees who rideshared. However, it may be noted that 51 percent of the agencies surveyed provided free parking for all employees.

Another important marketing strategy is to discount the parking fee based on the size of the pool. For instance, a model effort in Texas, the Texas Medical Center, discounts its parking fees by 60 percent for all

TABLE IV-14

Problems Affecting Ridesharing Programs
(N=41)

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion	Declined to Answer	Total Percent
Lack of support from management	9.8	4.9	34.1	34.1	4.9	12.2	100.0
Lack of interest from employees	19.5	31.7	12.2	19.5	4.9	12.2	100.0
Lack of support from Vango	----	----	26.8	24.4	24.4	24.4	100.0
Employee apprehension about program	7.3	22.0	19.5	17.1	17.1	17.1	100.0
Lack of funds to undertake program	2.4	9.8	31.7	19.5	22.0	14.6	100.0

carpools.[3] This survey revealed that a model 24 percent of the agencies provided some form of discount parking charge.

Cash incentive subsidies consist of monthly payments to each employer who enters into a ridesharing arrangement. Results from the study show that less than 15 percent of the agencies surveyed provide such incentives.

Cash incentives that might be considered by agencies participating in ridesharing programs include: 1) early pick up time for participants; 2) time allowance for drop off; and 3) flexible employee hours. Results of the Ridesharing Agency Survey indicated that approximately 20 percent of the agencies surveyed provided flexible hours to employees participating in the ridesharing programs.

The ridesharing coordinators were given the latitude in the form of an open-ended question to indicate any problem perceived in ridesharing management. A list of what ridesharing coordinators considered to be problems and issues confronting ridesharing programs included the following:

o 39 percent argue that it is impossible to match ridesharers time since most people work different shifts;

o 12 percent also indicated that ridesharing is not attractive since gasoline prices have been falling and other means of getting to work are available; and

o Less than 10 percent indicated that workers who work for them live near their job and hence, require no ridesharing to work.

ENDNOTES

[1]See, for example,, Douglas W. Wiersig, Planning Guidelines for Selecting Ridesharing Strategies, Transportation Research Record #876, National Research Council, Washington, D.C., 1982.

[2]Maryland Department of Transportation; Mass Transit Administration, Ridesharing Technical Memorandum (June 1981), p. 6.

[3]Department of Transportation, Transportation Management Study for the County Government Center (Rockville, Maryland: December 1979), pp. 1-6.

V

ANALYSIS OF RIDESHARER SURVEY (PERSONAL, SOCIAL, PSYCHOLOGICAL AND OTHER FACTORS IN RIDESHARING)

V.1 General

To understand personal, social, psychological and other factors affecting ridesharing programs in an indepth manner, the "Ridesharer Survey" was designed and administered. This survey attempted to obtain information on the various factors affecting the success of ridesharing programs in various agencies. The main objectives of this ridesharer survey were:

1) to obtain attitudinal data indicating trends in ridesharers' behavior;
2) to determine reasons for ridesharing;
3) to determine levels of satisfaction or dissatisfaction with existing ridesharing programs;
4) to determine the market share of carpool and vanpool; and
5) to determine the effects of divulging personal characteristics to prospective riders.

The analysis of this survey focussed on two different levels. The first involved general statistics. Here, all the ridesharers were considered as one group and their general characteristics were analyzed. The other was a comparative statistical analysis in which ridesharers were grouped into different categories such as by income, age, sex, marital status, race, etc. The data was analyzed to determine how these variables affect ridesharing. Cross tabulations were done using SPSS computer program packages on UNIVAC 1108 computer environment.

V.2 Survey Methodology

The survey questionnaires were distributed primarily through the ridesharing coordinators of various agencies. Each package of questionnaires contained 10-15 questionnaires with pre-stamped return envelopes. Coordinators hand-delivered the questionnaires to vanpool drivers as well as to carpool participants. In this manner, a total of 507 questionnaires were distributed

randomly within the sampled agencies. Out of the 507 questionnaires distributed, 378 (about 73%) were completed and returned from eleven sampled agencies. This high rate of return was mainly due to successful promotional efforts by ridesharing coordinators of sampled agencies. This high response rate is important because it reduces the margin of error for each question answered.

V.3 General Characteristics of Ridesharers in Maryland

V.3.1 Demographic Data

The demographic data obtained from this survey reveals that the prototype ridesharer is white, professional and married. Specifically, 76.2 percent of the respondents are white, 49.2 percent professional and 72.2 percent married.

Table V-1 illustrates that approximately 11 percent of the respondents earn less than $15,000 while 65 percent earn more than $20,000. Only 2 percent of the respondents earned less than $10,000. This suggests that few ridesharers come from lower income groups.

TABLE V-1

Income Distribution of Ridesharers

Income	Frequency	Percent	Percent Exclude "No Response"
Less than $5,000	3	.8	.9
$5,000 - $9,999	3	.8	.9
$10,000 - $14,999	31	8.2	9.5
$15,000 - $19,999	76	20.1	23.3
$20,000 - $24,999	45	11.9	13.7
$25,000 - $34,999	89	23.5	27.2
More than $35,000	80	21.2	24.5
No Response	51	13.5	
	378	100.0	

V.3.2 Modal Split

One objective of this survey was to identify ridesharer mode choices. The survey indicated that 53 percent of parking respondents carpool to work while 47 percent commute by vanpool.

V.3.3 Length of Time in Ridesharing

Table V-2 indicates that approximately 15 percent of the respondents have been ridesharing for less than one year, while 19 percent have participated in ridesharing programs for four to eight years. More significantly, a large portion (35 percent) of ridesharers were within the one to four year category. This sudden increase may be related to the recession during 1980 through 1983. The psychological impact of the recession may have had a great influence on ridesharing programs. About 45 percent of the ridesharers whose experience is less than one year responded that their main reason for ridesharing was to save money on gasoline while 65 percent of respondents with one to four years experience indicated that saving money on gasoline was their main reason for joining ridesharing programs.

TABLE V-2

Length of Time in Ridesharing

Length of Time	Frequency	Percent
Less than one year	57	15.1
1 - 4 years	185	34.6
4 - 7 years	73	19.3
8 years or more	62	16.4
Declined to answer	1	.3
TOTAL	378	100.0

V.3.4 Carpool/Vanpool Occupancy

The survey results show that 37 percent of the people commute in 11 to 15 person vanpools while 32 percent of the respondents commute in 3 to 5 person carpools.

V.3.5 Reasons for Ridesharing

In a survey conducted by MTA in 1980, "Maryland Vanpool Profile," it was found that 52.1 percent of the respondents of the survey considered economy as a prime reason for vanpooling.[1] In another survey conducted in 1981 by Maryland Department of Transportation, "Ridesharing Awareness Survey," it was found that about 61 percent of the commuters again considered economy as a prime factor in vanpooling.[2]

The analysis in this survey reveals that 65.3 percent of the riders who share a ride to work report, "to save on gas" as the most important reason for joining a ridesharing group. In addition, saving money on parking and car repairs due to wear and tear is reported by 23.8 and 54.8 percent respectively. Only 4.5 percent reported they joined ridesharing to avoid owning a car. Only 1.3 percent of respondents indicated that "meeting people" was an important factor in joining a carpool/vanpool. Ridesharers did not consider "meeting persons of different sex" as a motivational factor for ridesharing. The single most important factor revealed by this study is the consistent importance of economy factors, not social factors, in motivating persons to pool. More detailed analysis and data are shown in Table V-3.

V.3.6 How People Learned of Ridesharing Programs

It is important to know how people learned of ridesharing programs in order to develop effective marketing strategies. In Table V-4, a detailed analysis of how people learned about their ridesharing programs is presented.

The survey indicated that 54.5 percent of the respondents learned about ridesharing programs by word of mouth. Only about 18 percent stated that they learned about their ridesharing programs from employer billboard notices. This indicates that marketing techniques such as Vango's, Computer-ide, Employer Computer Matching, Radio/TV, Fliers, and Newspapers/Magazines have so far not been successful in reaching prospective riders. However, it cannot be ascertained if those who learned about the ridesharing programs by "word of mouth" obtained such information at the worksite or elsewhere.

Table V-5 also illustrates that the most ridesharing arrangements made subsequent to hearing about pooling (approximately 70 percent) came about as a result of personal contacts and arrangements.

TABLE V-3
Reasons for Joining Carpool/Vanpools

	YES RESPONSE		NO RESPONSE		TOTAL	TOTAL PERCENT
	Frequency	Percent	Frequency	Percent		
To save money on gas.	247	65.3	13.1	34.7	378	100
To save money on parking.	90	23.8	287	76.2	378	100
To save money on wear and tear of car.	207	54.8	171	45.3	378	100
To avoid owning car.	17	4.5	361	95.5	378	100
To meet people.	5	1.3	373	98.7	378	100
To meet opposite sex.	4	1.1	374	99.0	378	100

TABLE V-4
How Ridesharing Information Was Learned

	YES RESPONSE		NO RESPONSE		TOTAL	TOTAL PERCENT
	Frequency	Percent	Frequency	Percent		
Through Vango Computeride.	22	5.8	358	94.2	378	100
Employer Billboard Notice.	68	18.0	400	82.0	378	100
Employer Computer Matching.	34	9.0	344	91.0	378	100
Radio/TV.	1.	0.3	377	99.7	378	100
Fliers/Posters.	5.	1.3	373	98.7	378	100
Newspapers/Magazine.	6.	1.6	372	98.4	378	100
Word of Mouth.	206	54.5	172	45.5	378	100

TABLE V-5

How Prospective Ridesharer Was Met

Category	Frequency	Percent
Employer Computer Matching	42	11.1
Vango	23	6.0
Personal Contact/Arrangement	263	69.6
Employer Billboard Matching	21	5.6
Other	26	6.9
Declined to answer	3	.8
TOTAL	378	100.0

The data suggests that it is very difficult to promote personal contacts through marketing techniques. Instead, "employer computer matching," "Vango," and "employer billboard matching" techniques to increase ridesharing population must be promoted. The survey results indicate that advertisements on ridesharing programs were apparently not reaching ridesharers in an effective way. Only 23 percent of respondents learned through advertisements such as employer computer matching, Vango, and employer billboard matching. By the same token, this might also suggest that an aggressive marketing campaign might well attract a substantial clientele of those not now being reached by personal contact. This second conclusion seems a more logical interpretation of the data and suggests that much latitude exists on the part of those agencies wishing to expand or reinvigorate their ridesharing programs.

V.3.7 Personal and Other Details Divulged

Another aspect of this survey attempted to ascertain how prospective riders might react to the disclosure of personal information. The questions were designed to identify aspects that might dissuade prospective riders. Table V-6 indicates that a significant proportion (78.6 percent) of the respondents were willing to disclose their names during meetings with existing or prospective riders. While 72.5 percent disclosed their office telephone numbers, 67.2 percent and 66.4 percent of the respondents disclosed their home telephone number and work schedule respectively.

TABLE V-6

Personal and Other Details Divulged

	YES		NO		NOT APPLICABLE		TOTAL	TOTAL PERCENT
	Frequency	Percent	Frequency	Percent	Frequency	Percent		
Name	296	78.6	66	17.5	16	4.3	378	100
Department Phone Number	274	72.5	89	23.5	13	4.0	378	100
Home Phone Number	254	67.2	109	28.8	13	4.0	378	100
Work Schedule	251	66.4	112	29.9	13	4.0	378	100
Other	53	14.0	300	79.4	25	6.7	378	100

It was not clear why 30 percent of respondents declined to disclose their work schedules and yet participate in a program that requires riders to be aware of when to pick-up and drop-off participants. This may be explained by assuming a significant portion of ridesharers (about 30-40 percent) are meeting regularly at a specified time much like a scheduled transit vehicle. This indicated that ridesharing programs can be successful without disclosing personal information such as telephone numbers of work-place or home. About 14 percent of ridesharers indicated that they disclose other information such as residence and job location.

V.3.8 Reaction to Information Dissemination

The next question, "Do you agree that the way and manner in which the above information was divulged made you hesitant to join the carpool or vanpool?", was again designed to assess the attitude of respondents about giving our personal information. A significant majority of the respondents (81.5 percent) disagreed with this statement, while only 9.5 percent agreed. The remaining 9 percent indicated that the statement did not apply to them. Specifically, Table V-7 illustrates that of the 81.5 percent, 42.6 percent strongly disagreed and 38.9 percent simply disagreed.

TABLE V-7

Hesitated to Join Ridesharing Group Due to Manner in Which Information is Divulged

	Frequency	Percent
Strongly Agree	10	2.6
Agree	26	6.9
Disagree	147	38.9
Strongly Disagree	161	42.6
Not Applicable	7	1.9
Declined to answer	27	7.1
	378	100.0

V.3.9 Other Factors That Might Lead to Hesitation in Joining Ridesharing Group

While personal factors such as those mentioned above might be sufficient reason for hesitation in joining ridesharing groups, other factors might also be operating. Employee pressure, potential divulsion of privacy, method of solicitation and background of prospective rider were examined to find out the extent to which each of these factors might lead to hesitation in joining ridesharing groups.

The survey results indicated that none of these factors is significant in causing ridesharer hesitation in joining the program. Table V-8 shows the survey results on this issue.

TABLE V-8

Hesitating Factors

	Frequency	Percent
Employer Pressure	23	6.1
Potential Divulsion of Privacy	12	3.2
Method of Solicitation	04	1.1
Background of Prospective Partner (ethnicity, sex, status)	21	5.6
Reliability	18	4.8
Inconvenience	18	4.8
None of the Above	05	1.3
Other (Unspecified)	206	54.5
Declined to answer	71	18.8
	378	100.0

V.3.10 Reasons for Choice of Current or Potential Carpool Partner(s)

There are many reasons why people make choices about the persons with whom they will share rides and these reasons tend to be a function of social, personal or psychological perceptions of the individual riders. Table V-9 shows that 50.3 percent of the respondents consider compatability with potential ridesharer as an important reason for making a choice. It is

interesting to note that 21.4 percent of respondents did not consider any of the reasons shown in Table V-9 in their selection of their ridesharing partner(s). About 11 percent of the respondents were particularly concerned about location. This indicates that they drive to work and may be hesitant to drive the additional distance necessary to pick up their ridesharing partner(s).

TABLE V-9

Reasons for Choice of Potential
or
Existing Ridesharing Partner

	Frequency	Percent
Compatibility	190	50.3
Sex of Ridesharer	1	.3
Ethnicity	2	.5
Personal Factors	20	5.3
Psychological Perspective	5	1.3
Location	42	11.1
None of the Above	81	21.4
Declined to answer	37	9.8
	378	100.0

Overall, psychological, sex, ethnic and personal factors were insignificant determinants in the choice of ridesharing partners. Approximately 10 percent of the ridesharers did not answer the question.

V.3.11 Reasons for Unsatisfactory Match

Table V-10 indicates that the predominant reasons for not sharing a ride with potential partners are incompatible work time schedules and disparate living locations (e.g., two persons work in Baltimore City; but one lives in Columbia and the other in Towson). A large proportion of ridesharers did not consider location of workplace, poor driving arrangements

TABLE V-10

Reasons for Unsatisfactory Match

	YES RESPONSE		NO RESPONSE			
	Frequency	Percent	Frequency	Percent	TOTAL	TOTAL PERCENT
Lived too far away	94	24.9	284	75.2	378	100.0
Worked too far away	23	6.1	355	94.0	378	100.0
Poor driving arrangement	38	10.1	340	90.0	378	100.0
Did not know them well enough	16	4.2	362	95.8	378	100.0
Did not have anything in common	12	3.2	367	96.9	378	100.0
Time Schedule	125	33.1	252	66.7	378	100.0

and background of prospective riders as reasons for not sharing a rides to work. This is understandable since most of carpools/vanpools are organized to serve trips from many different home locations to one workplace (many to one travel pattern). People try to avoid unnecessarily longer trips.

The data also suggests that to promote carpools/vanpools it is essential to allow employees to have flexible work hours. Another consideration is that a significant proportion of respondents was not satisfied with the match of residential locations of the potential partners which creates unnecessarily longer trips. This condition can be ameliorated by combining one ridesharing program with those of adjacent agencies in order to increase the size of residential locations pool.

V.3.12 Common Characteristics of Ridesharers

There are some common characteristics among ridesharers who form a ridesharing group. These include: family members, co-workers at the same department, co-workers at the same section, commuters of the same ethnic group, and commuters of the same status or position on the job.

The survey results shown in Table V-11 indicate that about 65 percent of ridesharers are co-workers. Approximately 11 percent of the ridesharers are family members. These survey results strongly suggest that locations such as home or workplace are very important factors for people forming ridesharing groups. Again, this result supports the hypothesis that ridesharing programs are organized to handle many to one travel pattern.

V.3.13 Ridesharers and Social Status

Table V-12 shows that about 45 percent of ridesharers agreed with the statement that their ridesharing group came about as a result of commonality in occupation, job, and/or status on the job. On the other hand, about 52 percent of ridesharers disagreed with the above statement.

TABLE V-11

Ridesharing Characteristics

	YES RESPONSE		NO RESPONSE		TOTAL	TOTAL PERCENT
	Frequency	Percent	Frequency	Percent		
Family Members	43	11.4	335	88.6	378	100
Co-workers at the same Department	192	50.8	186	49.2	378	100
Co-workers at the same Section	52	13.8	326	86.2	378	100
Of the same Ethnicity	33	8.7	345	91.3	378	100
Same Status/Position on the Job	32	8.5	346	91.5	378	100
Other	63	16.7	318	84.3	378	100

TABLE V-12

Ridesharers Came from Same Status

	Frequency	Percent
Strongly Agree	73	19.3
Agree	97	25.7
Disagree	91	24.7
Strongly Disagree	105	27.8
Don't Know	1	.3
Declined to answer	11	2.9
	378	100.0

V.3.14 Employer Incentives

Two questions (number 14 and 15 of the survey form shown in Appendix 2) were specifically designed to learn what types of incentives were provided by the employers and what types of incentives are attractive to ridesharers. Table V-13 indicates that employers generally provide one or more of the following incentives: preferential parking, lower parking fees, flexible work hours, recognition and encouragement, contest awards and subsidies. The survey revealed that about 64 percent of ridesharers are provided with preferential parking from their employers while 32 percent of them are provided with flexible work hours. The data indicated that most ridesharers are attracted by preferential parking space. Fifty three percent of respondents indicated that preferential parking is the prime attraction. Free parking and flexible work hours were chosen as the next important incentives, each by about 45 percent of the respondents. Other items such as administrative time for ridesharing and payroll withholding service for the cost of ridesharing were considered less important attractions (Table V-14).

V.3.15 Factors Influencing Ridesharing Programs

A question was included to assess the importance of economic, social, personal and psychological factors in influencing ridesharing programs in Maryland. Economic factors are perceived as the most important factors influencing ridesharing programs. Psychological, social and personal factors

TABLE V-13

Employer Incentives

	YES		NO		Refused to Answer		TOTAL	TOTAL PERCENT
	Frequency	Percent	Frequency	Percent	Frequency	Percent		
Preferential Parking	240	63.5	105	27.8	33	8.8	378	100.0
Lower Parking Fees	23	6.1	323	85.4	32	8.5	378	100.0
Flexible Work Hours	121	32.0	225	59.5	32	8.5	378	100.0
Recognition and Encouragement	31	8.2	316	83.6	31	8.2	378	100.0
Contest/Awards	1	0.3	346	91.6	31	8.2	378	100.0
Subsidy	17	4.5	330	87.3	31	8.2	378	100.0

TABLE V-14
Attractive Incentives

	YES RESPONSE		NO RESPONSE		TOTAL	TOTAL PERCENT
	Frequency	Percent	Frequency	Percent		
Free Parking	172	45.5	206	54.5	378	100.0
Reduced Parking Fee	47	12.4	331	97.6	378	100.0
Preferential Parking Space	199	52.6	179	47.4	378	100.0
Administrative Time for Ridesharing	30	7.9	348	92.1	378	100.0
Payroll withholding for the Cost of Ridehsaring	13	3.4	365	96.6	378	100.0
Flexible Work Hours	170	45.0	198	55.0	378	100.0

are of importance but are not perceived to be so important as economic factors. Table V-15 shows the evaluations made by ridesharers on the factors influencing ridesharing programs. Overall, the majority of ridesharers do not confirm the hypothesis that social, personal and psychological factors influence ridesharing programs, significantly.

V.3.16 Automobile Ownership of Ridesharers

Another aspect of this survey was to determine the auto ownership characteristics of the household of the ridesharer. Table V-16 shows the number of vehicles owned by the households of ridesharer's. Average auto ownership was estimated as 1.6. Survey results indicate that 39.9 percent of ridesharers' households are one car households while 44.8 percent of them are two car households. Only 6.3 percent do not own an automobile and 1.4 percent have four or more cars.

TABLE V-16

Number of Automobiles Owned

Number of Cars	Frequency	Percent
None	23	6.3
1 car	147	39.9
2 cars	165	44.8
3 cars	28	7.6
4 or more cars	5	1.4
No answer	10	---
	378	100.0

V.3.17 Ridesharers' Reaction to the Decline in Gasoline Prices

One assumption made prior to the design of the questionnaire was that a reduction in gasoline prices would result in a decline in the rate of ridesharing. The survey results reveal that a majority of the ridesharers state that they would not alter their ridesharing behavior even if gasoline prices were to decline significantly. This alone suggests the development of a behavioral preference for pooling. Table V-17 indicates this and also suggests that the main reason for ridesharers begin to join pools is to save

TABLE V-15

Factors Influencing Ridesharing

FACTORS	Very Important	Important	Neither Important or Unimportant	Unimportant	Very Important	Refused to Answer
Economic	274 (72.5)	58 (15.3)	19 (5.0)	10 (2.6)	2 (0.5)	15 (4.0)
Social	11 (2.9)	17 (4.5)	125 (33.1)	83 (22.0)	113 (29.9)	29 (7.7)
Personal	64 (16.9)	103 (27.2)	95 (25.1)	49 (13.0)	34 (9.0)	33 (8.7)
Psychological Perceptions	36 (9.5)	55 (14.6)	119 (31.5	69 (18.3)	64 (16.9)	35 (9.3)

money. This is not confirmed since the data shows that continued membership in car or vanpools does not decline with the fall of gasoline prices. Car and vanpooling may well have become linked with concepts of economy and ridesharing may well be a habit with many persons. Moreover, the data suggest that once a person joins a van or carpool, continued membership is a function of perceived usefulness of the ridesharing program.

TABLE V-17

Reaction to Decline in Gasoline Price

Reaction	Frequency	Percent
No Change	356	94.2
Reduce a few	6	1.6
Reduce some	1	.3
Reduce most	2	.5
Eliminate totally	1	.3
Combine driving and ridesharing	4	1.1
Other	8	2.1
	378	100.0

V.3.18 Overall Evaluation of Ridesharing

The main objective of the open-ended question was to obtain the overall feelings of ridesharers about ridesharing. The answers were grouped into several encouraging categories as shown in Table V-18 with relative frequencies of responses.

In this question, ridesharers evaluated ridesharing as a good program which is also economical (47.9 percent and 26.2 percent respectively). Very few, however, indicated that ridesharing programs provide freedom from driving and lower insurance rates. Only about 5 percent of respondents complained that there are too many problems with ridesharing programs.

TABLE V-18

Overall Evaluation of Ridesharing

	Frequency	Percent
o Positive		
A Good Program	181	47.9
Economical	99	26.2
Freedom from Driving	11	2.9
Low Insurance	1	.3
o Negative		
Too Many Problems	18	4.8
o No Answer	68	18.0
	378	100.0

V.4 Male and Female Perspectives in Ridesharing

V.4.1 Ridesharers' Income by Sex

Table V-19 shows the comparisons of income distribution of male and female ridesharers in Maryland. The median income of male respondents is about $32,000 and that of females is about $19,000. Female income is only 59 percent of that of males. Also, the survey results reveal that about 75 percent of male respondents earn more than $25,000 while about 75 percent of female respondents earn between $10,000 and $25,000.

V.4.2 Ridesharer's Occupation by Sex

The survey results indicated that most of the ridesharers in Maryland are white collar workers (98 percent of males and 99 percent of females). This finding is interesting compared with the findings of a 1980 Cambridge Systematics Inc. Study (in Minneapolis, Minnesota) which revealed that the majority of the ridesharers were production workers.[1]

TABLE V-19

Ridesharers Income by Sex

Income	Frequency Male	Frequency Female	Percentage Male	Percentage Female
Less than $5,000	2	1	1.1	.7
$5,000 - $9,999	--	3	---	2.1
$10,000 - $14,999	5	26	2.8	17.8
$15,000 - $19,999	19	55	10.8	37.7
$20,000 - $24,999	16	28	9.1	19.2
$25,000 - $34,999	69	20	39.2	13.7
More than $35,000	65	13	36.9	8.9
	176	146	99.9	100.1

Baltimore has a significant number of blue collar workers. It may be that the significant number of blue collar Baltimore workers in the survey sample are underrepresented and the sample was given in favor of white collar workers. Alternatively, it may suggest that white collar workers in the Baltimore-Washington area are more likely to join carpools. Or, the agencies selected for this sample may be disproportionately white collar.

Another factor worth mentioning is that about 91 percent of male respondents hold professional/managerial positions while only about 56 percent of females hold similar positions. About 43 percent of female respondents were clerical/secretarial workers while only 7 percent of males were such workers (Table V-20).

TABLE V-20

Occupation	Frequency Male	Frequency Female	Percentage Male	Percentage Female
Professional and Technical	116	62	60.4	40.3
Managerial and Administrative	58	24	30.2	15.6
o Sales	---	1	----	.6
o Secretarial and Clerical	14	66	7.3	42.9
o Craftman and Foreman	1	--	.5	----
o Factory Operative	1	--	.5	----
o Transportation Operative	1	1	.5	.6
o Laborer (except farm)	1	--	.5	----
o Farm Owner	---	--	---	----
	192	154	99.0	100.0

V.4.3 Experience in Ridesharing

In the ridesharer survey, as shown in Table V-21 about 54 percent of the respondents were males and 46 percent were females. If, however, we look at the sexual composition of those who have been attracted to the program in the last four years, we find that 53 percent are females and 47 percent are males. Figure V-1 presents the same data in graph form. Assuming an even dropout rate for both sexes, the data allows the inference that recent ridesharing marketing tactics have been of greater appeal to women than to men. The data may also reflect the entry of more women into the workforce over the last few years. If, however, we speculate that the male dropout rate is lower than that of females, relatively low numbers of female "old timers" is reflective of this. Our study cannot definitively explain why there is a greater number of males in the current ridesharing population. As a side note, the peak in new van and carpool members which occurred one to four years ago is quite clearly reflected in this table.

TABLE V-21

Length of Time Ridesharing by Sex

Length of Time	Frequency Male	Frequency Female	Percentage Male	Percentage Female
0 - 6 months	15	19	7.7	11.5
6 - 12	10	12	5.1	7.3
1 - 2 years	24	27	12.3	16.4
2 - 3	31	34	15.9	20.6
3 - 4	27	30	13.9	18.2
4 - 5	17	8	8.7	4.8
5 - 6	14	9	7.2	5.5
6 - 7	10	5	5.1	3.0
7 - 8	8	0	4.1	0
More than 8 years	39	21	20.0	12.7
	195	165	100.0	100.0

V.4.4 Arrangement of Ridesharing

There was no significant difference between the sexes regarding prospective ridesharing arrangements. Females had a slight tendency to depend more on personal arrangements (79 percent) than did males (73 percent). Table V-22 shows in detail how both sexes made their ridesharing arrangements.

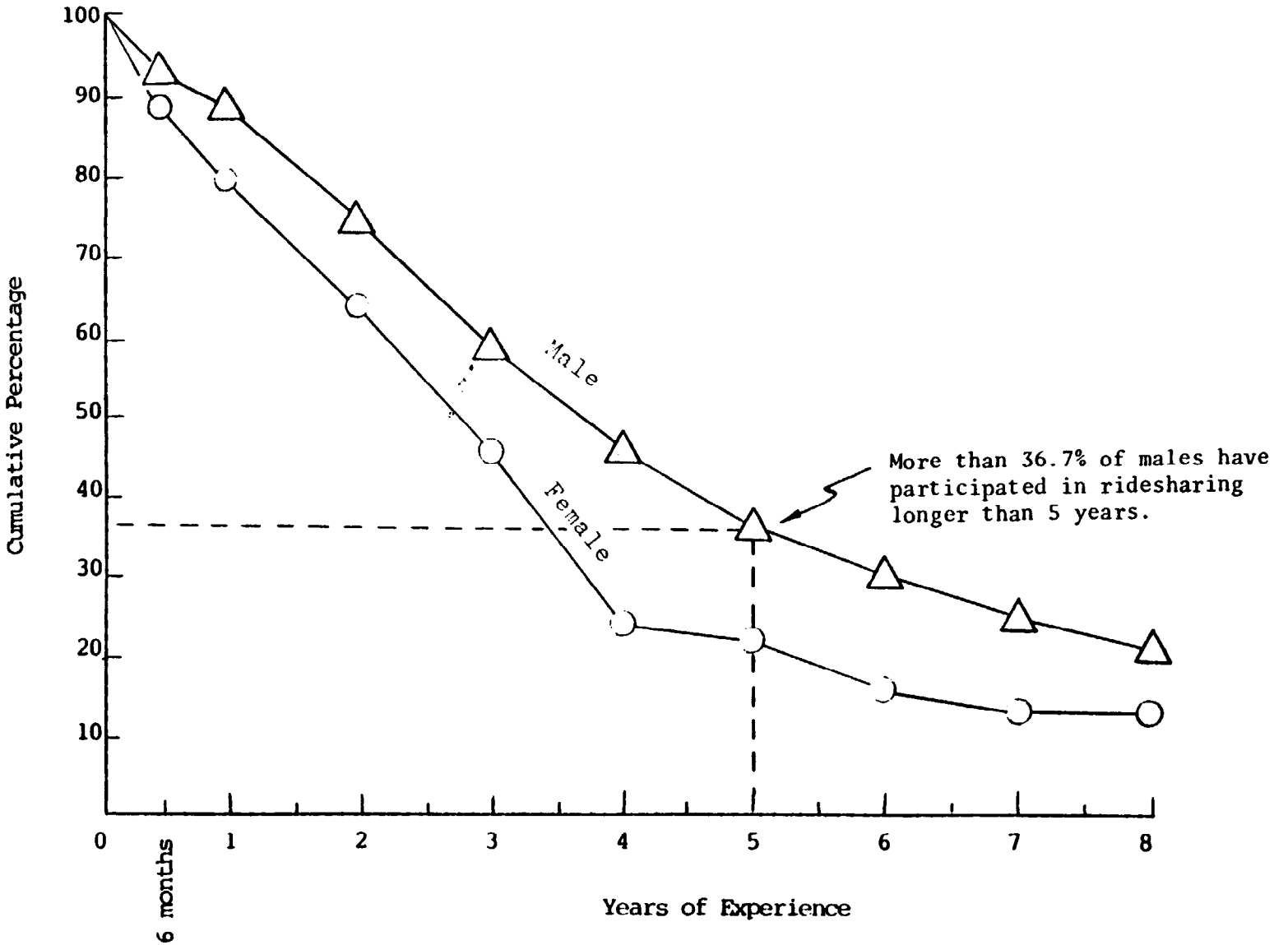
TABLE V-22

How Prospective Ridesharing Was Arranged by Sex

Category	Frequency Male	Frequency Female	Percentage Male	Percentage Female
Employer Computer Matching	23	18	12.5	11.9
Through Vango	13	9	7.1	6.0
Personal Arrangements	134	119	72.8	78.8
Employer Billboard	14	5	7.6	3.3
	184	151	100.0	100.0

FIGURE V-1

Percentage of Ridesharer Having Experience More than Years Specified



V.4.5 Ridesharers' Age by Sex

Figure V-2 indicates that females make up a greater proportion of all riders between twenty-five and thirty-five years of age (about 58 percent), while males are distributed more evenly within age groups older than thirty years of age. Men who pool are simply older, and have probably been in the workforce longer than their female counterparts. Less than 10 percent of male respondents are less than 30 years old. This indicates that young adults are not participating in ridesharing compared to young adult females. Middle-aged males tend to be over represented in ridesharing than in the case for middle-aged females. This may reflect differentials in workforce composition or suggest that males tend to stay in the ridesharing programs longer than females.

V.4.6 Reasons for Sharing Rides

The relationship between sex and reasons for sharing rides are displayed in Table V-23. It appears that the reasons for sharing rides for both males and females are almost the same. About 43 percent of both males and females considered "saving money on gasoline" as the prime reason for sharing a ride and about 36 percent of both males and females considered "saving money from wear and tear on cars" as the secondary reason for sharing a ride with someone. If we combine these two categories as "saving money by not driving", these two reasons account for 80 percent of the respondents' reasons for joining a ridesharing program. Only about 15 percent of people considered "saving money on parking" as a primary reason for ridesharing. This table also revealed that only 1 percent of ridesharers indicated that their main reason for joining carpool/vanpool was "to avoid owning a car."

V.4.7 Information Disclosed

The data concerning the type of personal and other information disclosed is shown in Table V-24. The survey results reveal that about 75 percent of males and about 67 percent of females divulged personal information including, name, department telephone number, home telephone number and work schedule. It is interesting to note that about 30 percent of the respondents participate in ridesharing without divulging personal information.

Figure V-2

Percent Ridesharer by Age and Sex

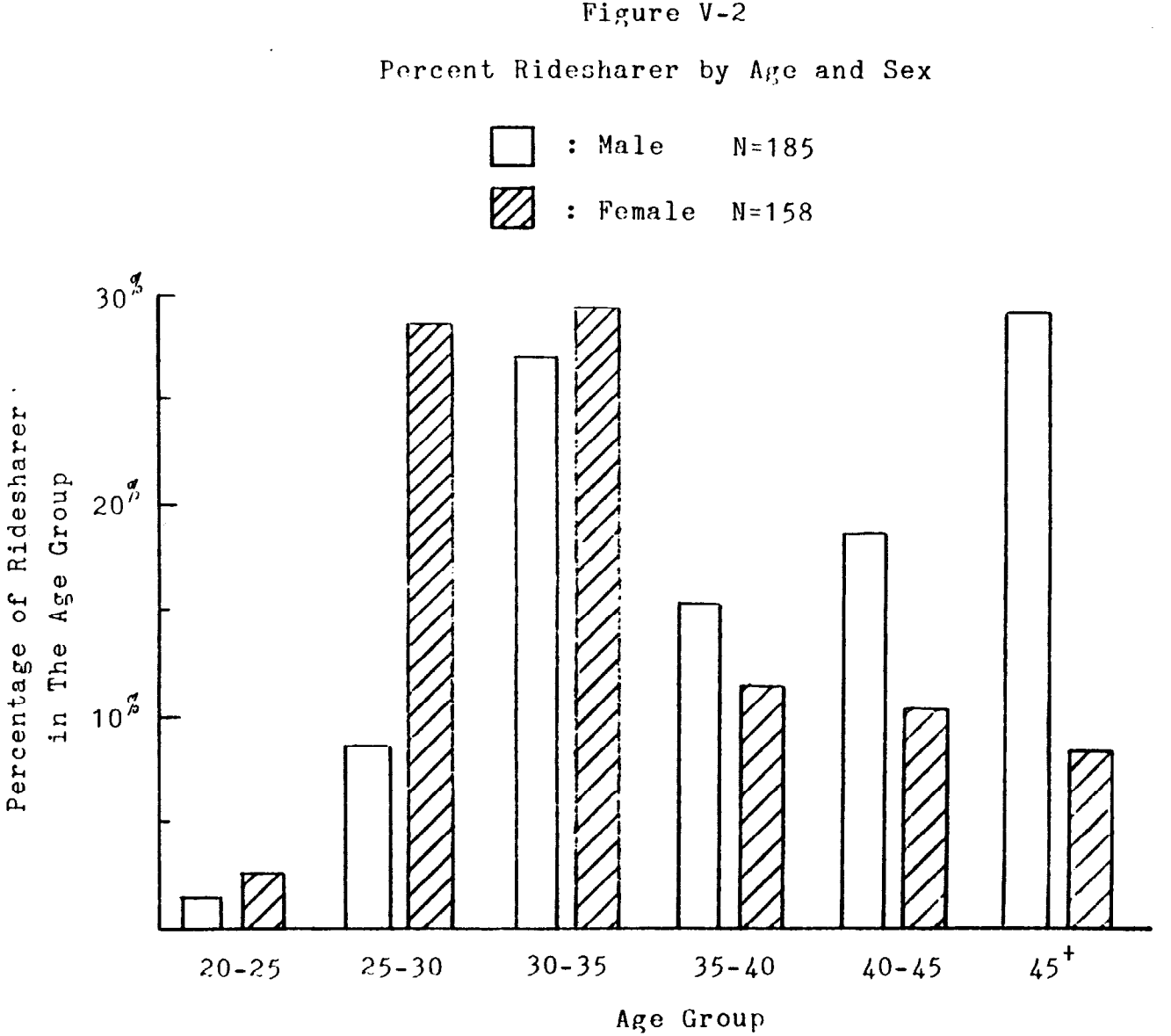


TABLE V-23

Reasons for Ridesharing by Sex

Reasons	Frequency Male	Frequency Female	Percent Male	Percent Female
To save money on gasoline	142	94	43.4	43.7
To save money on parking	44	38	13.5	17.7
To save money from wear and tear on cars	120	78	36.7	36.2
To avoid owning a car	4	1	1.2	.5
To meet opposite sex	3	1	.9	.5
	327	215	100.0	100.0

TABLE V-24

Personal and Other Details Divulged by Sex

$N_{Male} = 196$ $N_{Female} = 165$

Information	Frequency Male	Frequency Female	Percent Male	Percent Female
Name	163	119	83.2	72.1
Department telephone number	153	107	78.1	64.8
Home telephone number	138	106	70.4	64.2
Work schedule	130	113	66.3	68.5

The survey results also reveal that about 93 percent of male and about 85 percent of female respondents feel that the information divulged did not make them hesitant to join a ridesharing program. On the other hand, about 7 percent of males and 15 percent of females feel that the information divulged made them hesitant to join the ridesharing programs. The survey suggests that it is important to prevent personal information given by ridesharers from being divulged by ridesharing program coordinators. It goes without saying that this is especially important from the point of view of

those who are sensitive about giving private information.

The respondents did not feel that information divulgence has a major impact on ridesharing. Table V-25 summarizes the responses to the question "Do you agree that the way and manner in which the above (private) information was divulged made you hesitant to join the ridesharing program?"

TABLE V-25

Reactions to Information Divulged

Degree	Frequency		Percent	
	Male	Female	Male	Female
Strongly Agree	3	7	1.6	4.7
Agree	10	14	5.5	9.5
Disagree	73	71	40.1	48.0
Strongly Disagree	6	56	52.8	37.8
	186	148	100.0	100.0

V.4.3 Ridesharer Group Formation

Table V-26 displays data regarding the formation of a group by sex. About 60 percent of both males and females form ridesharing groups with their co-workers, and about 10 percent of both sexes form ridesharing groups with their families, and the remaining 30 percent form ridesharing groups along other lines. These include ethnicity, job status, similar occupational levels, etc. There were no significant differences between the sexes in their ridesharing group forming behavior.

TABLE V-26

Ridesharer Group Formation by Sex

Group	Frequency Male	Frequency Female	Percent Male	Percent Female
Family members	23	19	10.2	11.0
Co-workers at the same department/section	133	99	59.1	57.2
Same ethnicity	19	14	8.4	8.1
Same status position on job	18	11	8.0	6.4
Other	32	30	14.2	17.3
	225*	173*	99.9	100.0

V.4.9 Factors Affecting Ridesharing Programs

Responses to the question relating to factors affecting ridesharing programs show that 94 percent of the males and 84 percent of the females both suggested that economic factors influence their decisions on joining ridesharing programs. (Refer to Table V-27.) Male and female respondents did not believe that social status or personal factors affected their ridesharing behavior. Both males and females believe psychological factors to be relatively unimportant. Female respondents (about 30 percent) attach greater importance to psychological factors than their male counterparts (about 20 percent).

These findings suggest that next to economic factors, personal factors affect ridesharing programs the most. Very few ridesharers (7 percent of males and 8 percent of females) believe that social factors/status affect ridesharing programs. The list of factors affecting ridesharing programs in descending rank order is:

*Total frequency is greater than total number of respondents due to selecting multiple answers. This question was answered by 196 males and 165 females.

TABLE V-27

Rideshare's Perceptions of How Factors Affect Ridesharing Program by Sex

	Frequency		Percentage	
	Male	Female	Male	Female
ECONOMIC				
Very Important	146	118	73.7	71.5
Important	39	20	19.7	12.1
Neither Important or Unimportant	3	14	2.5	8.5
Unimportant	3	7	1.5	4.2
Very Unimportant	1	1	.5	.6
Refused to Answer	4	5	2.0	3.0
	196	165	99.9	99.9
SOCIAL STATUS				
Very Important	3	6	1.5	3.6
Important	10	7	5.1	4.2
Neither Important or Unimportant	71	53	36.2	32.1
Unimportant	45	36	23.0	21.8
Very Unimportant	59	49	30.1	29.7
Refused to Answer	8	14	4.1	8.5
	196	165	100.0	99.9
PERSONAL				
Very Important	28	34	14.3	20.6
Important	57	45	29.1	27.3
Neither Important or Unimportant	54	40	27.6	24.2
Unimportant	25	22	12.8	13.3
Very Unimportant	20	11	10.2	6.7
Refused to Answer	12	13	6.0	7.9
	196	165	100.0	100.0
PSYCHOLOGICAL				
Very Important	12	24	6.1	14.5
Important	28	27	14.3	16.4
Neither Important or Unimportant	64	54	32.7	32.7
Unimportant	39	28	19.9	17.0
Very Unimportant	42	16	21.4	9.7
Refused to Answer	11	16	5.6	9.7
	196	165	100.0	100.0

1) economic factors
2) personal factors
3) psychological factors
4) social factors/status

V.5 Differences Among Income Groups and Ridesharing

V.5.1 Reasons for Joining Ridesharing Programs

The survey results as shown in Table V-28 reveal that there are no significant differences among different income groups of ridesharers in their behavior as inferred from the reasons given why they joined ridesharing programs. However, it is important to note that "to save money on parking" as a reason for ridesharing decreased steadily from 17 percent in the income range of $10,000 to $15,000 to 8 percent for income group earning more than $35,000. This is obvious when we consider that higher income group riders are less likely to be motivated by relatively small economic advantages such as the free parking spaces. Forsaking such "parking" may be a way of attaining status and a motivating factor in their decision to pool.

On the average, about 82 percent of ridesharers of all income groups joined ridesharing because they wanted to save money on gasoline, parking, and car repair. Only about 18 percent of ridesharers joined the program for other reasons.

V.5.2 Arrangements of Prospective Ridesharers

It has been shown in this chapter that most ridesharing arrangements were made by personal contact through word of mouth by prospective and current riders. It appeared that there were no significant differences among riders of different income groups regarding how the prospective ridesharers were met (See Table V-29). About 70 percent of all ridesharers met prospective ridesharers by personal contact or privately made arrangements. This strongly suggests that ridesharing programs could be marketed more successfully if existing riders were provided with personal incentives to bring other riders into the program. The range of incentives indirectly considered have included: free parking and reserved parking spaces for ridesharers, construction of new high occupancy lanes, flexible work hours, and raising gasoline taxes.

TABLE V-28

Why Different Income Group Ridesharers Join Ridesharing Programs

Reasons Why Joining Ridesharing	RIDESHARER INCOME														TOTAL
	Less than $5,000		$5,000-9,999		$10,000-14,999		$15,000-19,999		$20,000 24,999		$25,000 34,999		More than $35,000		
To save money on gas	2	40.0	3	42.9	20	42.6	42	34.7	28	38.4	68	40.7	55	38.5	18
To save money on parking	1	20.0	1	14.3	8	17.0	19	15.7	9	12.3	22	13.2	12	8.4	72
To save money on car repairs	1	20.0	2	28.6	11	23.4	35	28.9	21	28.8	56	33.5	48	33.6	174
To avoid owning a car							2	1.7	2	2.7	3	1.8	8	5.6	15
To meet people					1	2.1			1	1.4	1	0.6	1	0.7	4
To meet opposite sex	1	20.0	1	14.3									2	1.4	4
Other					7	14.9	23	19.0	12	16.4	17	10.2	17	11.9	76
TOTAL	5	100.0	7	100.1	47	100.0	121	100.0	73	100.0	167	100.0	143	100.1	563

TABLE V-29

How Different Income Group Ridesharers Met Prospective Ridesharer

	HOUSEHOLD INCOME												
	Less than $5,000		$5,000-9,999		$10,000-14,999		$15,000-19,999		$20,000-24,999		$25,000-34,999		More than $35,000		TOTAL
		%		%		%		%		%		%		%	
Employer Computer matching	1	33.3	1	33.3	2	6.5	9	11.8	3	7.0	13	14.6	9	11.2	38
Vango					2	6.5	2	2.6	4	9.3	1	1.1	12	15.0	21
Personal contact/ arrangements	1	33.3	1	33.3	25	80.6	52	68.4	31	72.1	67	75.3	50	62.5	227
Employer Billboard matching	1	33.3					6	7.9	1	2.3	2	2.2	7	8.8	17
Other			1	33.3	2	6.5	7	9.2	4	9.3	6	6.7	2	2.5	22
		%		%		%		%		%		%		%	
TOTAL	3	99.9	3	99.9	31	100.1	76	99.9	43	100.0	89	99.9	80	100.0	325

V.5.3 How People Learn About Ridesharing Programs

Table V-30 shows that about 60 percent of all ridesharers across all income groups learned of ridesharing programs by word of mouth. Another 30 percent of ridesharers across all income groups learned about ridesharing programs either from employer billboard or from employer computer matching. However, it is interesting to note that the higher the income, the more frequently respondents learned of ridesharing programs by employer billboard or employer computer matching (21 percent for the income group earning $10,000-$15,000 and (35 percent for the income group earning more than $35,000).

It appears that techniques such as radio and TV, fliers and posters, or newspapers and magazine advertisements were not major methods of attracting ridesharers to the programs. This, however, is an aspect of ridesharing upon which this study touched only minimally.

V.5.4 Ridesharer's Perception of Factors Affecting Ridesharing Programs

The survey revealed that the ridesharers' average income was relatively higher than expected with about 90 percent of respondents having personal incomes of more than $15,000, and 60 percent earning more than $25,000 annually. It is interesting to note that even though they belonged to high income brackets, most of them (about 90 percent) perceived economic factors to be "very important" or "important" in promoting ridesharing programs.

Figure V-3 shows how each income group of ridesharers perceives the impact of economic factors on ridesharing programs. Generally, the higher the income group, the more likely are respondents to believe that economic factors are important in joining the ridesharing programs. This is true until their personal income reaches about $35,000. It is interesting to note that almost all of the respondents (98 percent) in the income bracket between $25,000 and $35,000 believe that economic factors are important factors in joining the ridesharing programs. For the income group of $35,000 or more, the number of people joining the ridesharing due to economic factors declined slightly (90 percent). This is about the same level as income groups earning $15,000 to $20,000 and $20,000 to $25,000.

TABLE V-30

How Different Income Group Ridesharers Learned about Ridesharing Program

	RIDESHARER INCOME												
	Less than $5,000		$5,000-9,999		$10,000-14,000		$15,000-19,999		$20,000-24,999		$25,000-34,999		More than $35,000		TOTAL
		%		%		%		%		%		%		%	
Through Vango	1	33.3			2	6.1	3	4.8	4	11.4	2	2.2	8	11.3	20
Employer Billboard	1	33.3			2	6.1	12	19.4	7	20.0	15	16.5	21	29.6	58
Employer Computer Matching					5	15.2	5	8.1	4	11.4	11	12.1	4	5.6	29
Radio/Television					1	3.0									1
Fliers/Posters					1	3.0			1	2.9	1	1.1	2	2.8	5
Newspaper/Magazine					2	6.1	1	1.6			2	2.2			5
Word of Mouth	1	33.3	2	100.0	20	60.6	41	66.1	19	54.3	60	65.9	36	50.7	179
TOTAL	3	99.9	2	100.0	33	100.1	62	100.0	35	100.0	91	100.0	71	100.0	296
Refuse to Answer			1		5		12		14		8		14		

FIGURE V-3

How Different Income Group Riders Perceive the Importance
of
Economic Factors to Join Ridesharing Programs

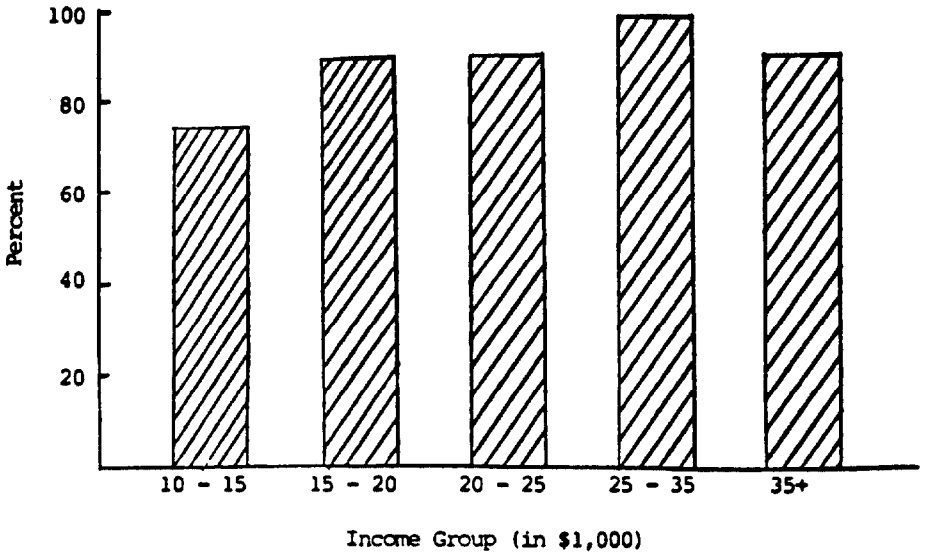


FIGURE V-4

How Riders of Each Income Group Perceive Psychological Factors
as
Important to Joining Ridesharing Programs

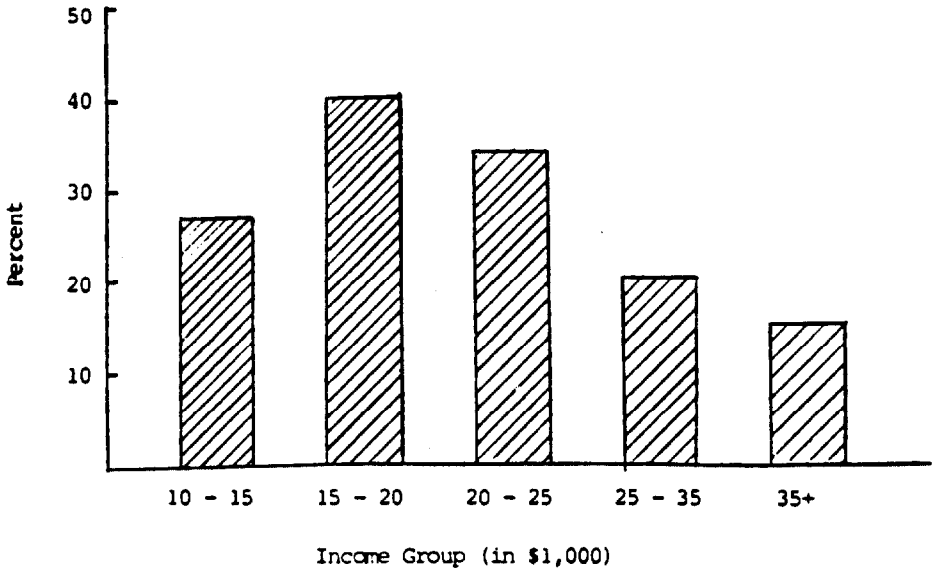


Figure V-4 shows how ridesharers of each income group perceive psychological factors to affect ridesharing programs. The figure shows that the higher the incomes, the less likely the belief that psychological factors are important in making a decision to join the ridesharing programs.

There was no significant difference noticed among riders of different income groups as far as personal and social factors are concerned. However, it is interesting that riders of different income groups rated psychological factors differently even though very few of them believe psychological factors are important factors in joining the ridesharing programs (overall 26 percent).

How different income group riders perceive the importance of these factors (i.e., economic, personal, social and psychological factors) on ridesharing programs are discussed earlier and more detailed data are displayed in Tables V-31, V-32, V-33, and V-34, respectively.

V.6 Some Aspects of Ridesharing Programs by Marital Status

Three different aspects of the effect of marital status on ridesharing were investigated. The first subject area was with whom participants in ridesharing programs shared rides. The second question examined whether or not they would continue to participate in case of gasoline price decline. The third was how the four different factors (i.e., economic, social, personal and psychological) influence their behavior in joining ridesharing programs.

The survey results indicate that more male ridesharers are married (88 percent) compared with female counterparts (60 percent). This is probably due to the lower age of females who are joining ridesharing programs (See Table V-35).

TABLE V-31

How Different Income Group Ridesharers Perceive Economic Factors Would Affect Ridesharing

Degree of Importance	RIDESHARER'S INCOME														TOTAL
	Less than $5,000		$5,000-9,999		$10,000-14,999		$15,000-19,999		$20,000-24,999		$25,000-34,999		More than $35,000		
		%		%		%		%		%		%		%	
Very Important	2	100.0	3	100.0	22	71.0	52	72.2	34	80.9	68	77.3	57	71.2	238
Important					1	3.2	13	18.1	4	9.5	18	20.5	15	18.8	51
Neither Important nor Unimportant					6	19.4	4	5.6	2	4.8	1	1.1	5	6.3	18
Unimportant					2	6.5	2	2.8	1	2.4	1	1.1	3	3.8	9
Very Unimportant							1	1.4	1	2.4					2
TOTAL	2	100.0	3	100.0	31	100.1	72	100.1	42	100.0	88	100.0	80	100.1	318
Refused to Answer	1		3				4		3		1				

TABLE V-32

How Different Income Group Ridesharers Perceive Personal Factors Would Affect Ridesharing

Degree of Importance	RIDESHARER's INCOME													
	Less than $5,000		$5,000-9,999		$10,000-14,999		$15,000-19,999		$20,000-24,999		$25,000-34,999		More than $35,000	TOTAL
		%		%		%		%		%		%		
Very Important	1	50.0			7	23.3	13	18.3	9	23.1	13	15.5	14	18.2	57
Important			2	66.7	11	36.7	19	26.8	12	30.8	29	34.5	24	.31.2	97
Neither Important nor Unimportant	1	50.0	1	33.3	6	20.0	23	32.4	14	35.9	22	26.2	18	23.4	85
Unimportant					5	16.7	12	16.9	3	7.7	8	9.5	13	16.9	41
Very Unimportant					1	3.3	4	5.6	1	2.6	12	14.3	8	10.4	26
TOTAL	2	100.0	3	100.0	30	100.0	71	100.0	39	100.1	84	100.0	77	100.1	306
Refused to Answer	1				1		5		6		5		3		

TABLE V-33

How Different Income Group Ridesharers Perceive Social Factors Would Affect Ridesharing

Degree of Importance	RIDESHARER'S INCOME												TOTAL
	Less than $5,000		$5,000-9,999		$10,000-14,999		$15,000-19,999		$20,000-24,999		$25,000-34,999		More than $35,000		
		%		%		%		%		%		%		%	
Very Important	1	50.0	1	33.3	1	3.3	2	2.8	1	2.5	3	3.5			9
Important					2	6.7	6	8.5			4	4.7	3	3.9	15
Neither Important nor Unimportant	1	50.0	1	33.3	8	26.7	25	35.2	19	47.5	35	40.7	27	35.1	116
Unimportant					9	30.0	21	29.6	5	12.5	19	22.1	20	26.0	74
Very Unimportant			1	33.3	10	33.3	17	23.9	15	37.5	25	29.1	27	35.1	95
TOTAL	2	100.0	3	99.9	30	100.0	71	100.0	40	100.0	86	100.1	77	100.1	309
Refused to Answer	1				1		5		5		3		3		

TABLE V-34

How Different Income Group Ridesharers Perceive Psychological Factors Would Affect Ridesharing

Degree of Importance	HOUSEHOLD INCOME												TOTAL
	Less than $5,000		$5,000-9,999		$10,000-14,999		$15,000-19,999		$20,000-24,999		$25,000-34,999		More than $35,000		
		%		%		%		%		%		%		%	
Very Important	1	50.0			5	16.7	12	17.9	6	14.6	5	6.0	2	2.6	31
Important			2	66.7	3	10.0	14	20.9	8	19.5	12	14.3	10	13.0	49
Neither Important nor Unimportant	1	50.0	1	33.3	10	33.3	22	32.8	15	36.6	29	34.5	29	37.7	107
Unimportant					9	30.0	14	20.9	8	19.5	12	14.3	21	27.3	64
Very Unimportant					3	10.0	5	7.5	4	9.8	26	31.0	15	19.5	53
TOTAL	2	100.0	3	100.0	30	100.0	67	100.0	41	100.0	84	100.1	77	100.1	304
Refused to Answer	1				1		9		4		5		3		

TABLE V-35

Marital Status of Ridesharers by Sex

Marital Status	Frequency		Percentage	
	Male	Female	Male	Female
Married	169	97	87.6	59.9
Widowed	1	4	.5	2.5
Separated	4	12	2.1	7.4
Divorced	5	21	2.6	13.0
Single (Never Married)	14	28	7.3	17.3
	193	162	100.1	100.1

The survey indicates that there were no significant differences between married persons and singles regarding those with thom ridesharing groups are formed and how their behavior would change in the event of a reduction in gasoline prices. About 70 percent of both married and unmarried respondents shared rides with their co-workers and more than 95 percent of both groups of riders stated that they would not change their ridesharing behavior in the event of a gasoline price decline. (See Tables V-36 and Table V-37.)

TABLE V-36

Marital Status and Pool Members

Type of People	Frequency		Percentage	
	Married	Unmarried	Married	Unmarried
Family Members	38	5	15.0	7.6
Co-workers at the Same Department	135	31	53.1	47.0
Co-workers at the Same Section	36	14	14.2	21.2
Same Ethnicity	23	9	9.1	13.6
Same Status/Position on the Job	22	7	8.7	10.6
	254	66	100.1	100.0

TABLE V-37

Change in Attitude Toward Ridesharing From Declining Gasoline Prices by Marital Status

Change in Attitude	Frequency		Percentage	
	Married	Unmarried	Married	Unmarried
No change	261	82	96.7	95.3
Reduce a few	4	2	1.5	2.3
Reduce some	1	—	.3	---
Reduce most	2	—	.7	---
Eliminate totally	1	--	.3	---
Combine Driving to Ride-sharing	1	2	.3	2.3
	270	86	99.8	99.9

Again, the most important factors affecting ridesharing programs continue to be economic factors. These constantly appeared to be the most important variables noted by both singles and married persons. However, married ridesharers believe more strongly (about 90 percent) that economic factors are important than do unmarried ridesharers (about 85 percent). Psychological factors are believed to be of greater importance by the unmarried. Thirty percent cite psychological factors important as compared with only 23 percent of their married counterparts. Both groups consider social and personal factors less important. (See Table V-38.)

TABLE V-38

Ridesharer's Perception of How Factors Affecting Ridesharing Program by Marital Status

	Frequency		Percentage	
	Married	Unmarried	Married	Unmarried
ECONOMIC				
Very Important	203	62	74.4	69.7
Important	42	15	15.4	16.9
Neither Important or Unimportant	12	7	4.4	7.9
Unimportant	6	4	2.2	4.5
Very Unimportant	1	1	.4	1.1
Refused to Answer	9	0	3.3	0
	273	89	100.0	100.0
SOCIAL STATUS				
Very Important	5	4	1.8	4.5
Important	12	4	4.4	4.5
Neither Important or Unimportant	95	30	34.8	33.7
Unimportant	58	22	21.2	34.7
Very Unimportant	86	24	31.5	27.0
Refused to Answer	17	5	6.2	5.6
	273	89	99.9	100.0
PERSONAL				
Very Important	44	19	16.1	21.3
Important	79	22	28.9	24.7
Neither Important or Unimportant	75	19	27.5	21.3
Unimportant	27	20	9.9	22.5
Very Unimportant	29	3	10.6	3.4
Refused to Answer	19	6	7.0	6.7
	273	89	100.0	99.9
PSYCHOLOGICAL				
Very Important	23	13	8.4	14.6
Important	41	14	15.0	15.7
Neither Important or Unimportant	92	26	33.7	29.2
Unimportant	45	21	16.5	23.6
Very Unimportant	52	8	19.0	9.0
Refused to Answer	20	7	7.3	7.9
	273	89	99.9	100.0

ENDNOTES

[1]Mass Transit Administration (MTA), "Maryland Vanpooling Profile," p. 2, 1980.

[2]Maryland Department of Transportation, "Ridesharing Awareness Survey." p. 13., 1981.

VI

SUMMARY AND FINDINGS

This study, focusing on Maryland, added indepth knowledge to our total store of information regarding ridesharing programs. The study involved the construction and administration of surveys of ridesharing agencies as well as ridesharers. The principal findings of the analysis of the data are as follows:

- An employment level of 100 appears to be the threshold point at which a successful program of pooling can be undertaken. This refutes conventional wisdom which sets the threshold level for a potential successful program at 500[1] and strongly suggests that the payoff for encouraging pooling at levels lower than 500 is great.
- Size of the agency itself is not a major determinant to the successfulness of ridesharing programs. Quality of management support appears to be crucial. This suggests that coordination and management of the pooling efforts is quite important.
- Many larger organizations have participation rates that are quite low. This further suggests that attention should be paid to encouraging management support at larger organizations.
- In the 24 percent of the organizations offering marketing programs, pooling participation rates were significantly higher. This suggests that the development of marketing strategies have high payoffs.
- In the 20 percent of the organizations providing some kind of parking for ridesharing employees, pool participation rates were significantly higher. This suggests that this incentive is particularly useful in encouraging ridesharing among employees.
- Thirty-nine percent of the ridesharing coordinators argued that the organization of work into discrete shifts deters pool formation. Also, ridesharer based survey results reveal that predominant reasons for not sharing a ride with potential partners are incompatible work time schedules (33 percent) and living locations (25 percent). This suggests that the development of variable work hours may well encourage pooling.

• The survey indicated that employers provided one or more of the following incentives: preferential parking, lower parking fees, flexible work hours, recognition and encouragement, contest/awards and subsidy. Ridesharers selected preferential parking space as a prime incentive (53 percent) and free parking and flexible work hours as the next important incentives (about 45 percent each).

• Many studies suggest that social, personal, and psychological factors may have a far larger implication for attracting ridesharers than economic factors. Consistently, among all income groups, among both men and women, across all age groups, our study indicated that economic factors were perceived to be the prime motivating forces in influencing the ridesharing decision. Only 1.3 percent of people surveyed joined ridesharing for "meeting people" while more than 65 percent joined "to save on gas." Moveover, the majority of ridesharers themselves reject the notion that social, personal, and psychological factors influenced their ridesharing decisions. This suggests that marketing techniques concentrate on a basic "bread and butter" approach.

• Our survey results indicated that marketing techniques such as Vango, Computeride, Employer Computer Matching, Radio/TV, Fliers, and Newspapers/ Magazines, have so far not been successful in attracting prospective riders. This may lead to two conclusions. The first is that there is not a high enough level of advertising on ridesharing programs (only 23 percent of respondents learned through advertisements mentioned above). The other is that the advertisements may be sufficient, but the effectiveness of them is low. Further study in this area is recommended.

• One assumption made prior to the design of the study was that a reduction in gasoline prices would result in a decline in the rate of ridesharing. The survey results reveal that a majority of the ridesharers indicate that they would not alter their ridesharing behavior even if gasoline prices decline significantly. This alone suggests the development of a behavioral preference for pooling. This suggests further that car and vanpooling have become linked with concepts of economy and ridesharing and are becoming a habit with many ridesharers. Moreover, other data suggested that once a person joins a van or carpool, continued membership is a function of perceived characteristics of the usefulness of the ridesharing program.

• The survey indicated that the overwhelming majority of carpoolers (93 percent of the men and 85 percent of the women) did not feel that the provision of information about themselves deterred them from joining pools provided it was not made public. This suggests that considerable latitude exists in the soliciting of information as part of the establishment of a pool, but that information should not be displayed publicly, e.g., on bulletin boards. A strengthened role for the coordinator may be warranted.

ENDNOTES

[1]Douglas W. Wiersig, Planning Guidelines for Selecting Ridesharing Strategies, Transportation Research Record 876, National Research Council, Washington, D.C., 1982.

Appendix A

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Center for Transportation Studies
(301) 444-3348

A Study to Assess the Importance of Personal, Social, Psychological and Other Factors in Ridesharing Programs

The Center for Transportation Studies (CTS), at Morgan State University is undertaking the above study on Ridesharing programs in Maryland. The Center was awarded a research grant by the Urban Mass Transportation Administration of the USDOT in the Fall of 1982.

The main purpose of the research effort is to investigate the various factors affecting the success of ridesharing programs across various agency types. The study is also aimed at determining the extent to which employer sponsorship influences participation in ridesharing programs.

The purpose of this letter is to acquaint and introduce you to the CTS, the research study and to request your cooperation and assistance in the execution of this research project that could be of tremendous and potential benefit to your agency. We seek your help and cooperation in this exercise by asking you, or the appropriate person(s) in your agency to complete the attached questionnaire(s).

Your agency was selected for this project because of its uniqueness in the operation and management of ridesharing programs. We believe that your agency provides and possesses the potential to conduct a research of this nature. You or the person designated by you and the ridesharers of your agency will serve as liaison and potential interaction between your agency and CTS.

Data collected by this questionnaire will be treated confidentially and will enable CTS to identify the important factors affecting ridesharing programs. Between now and the final execution of the project, we hope to interact at various levels. We hope you will let the participants in your ridesharing program know about this study.

Your cooperation is appreciated. Should you have any questions about this study, please do not hesitate to contact me at the above address, or phone (301) 444-4438. Please return the questionnaire(s) and/or comments to me at your earliest convenience.

Thank you.

Sincerely,

H. Njame-Mensah, Ph.D.
Principal Investigator

gcs

RIDESHARING AGENCY SURVEY

A. Agency Name _____ Agency Code _____

B. Address _____

_____

C. Telephone Number _____

D. Representative/Coordinator _____ Title _____

E. Date Ridesharing Started _____
Month Day Year

---

1. Agency Type 1

Federal	1
State	2
Local/County	3
Private	4

2. Location of Agency 2

Downtown Washington	1
Downtown Baltimore	2
Surburban D.C.	3
Surburban Baltimore	4
Rural Baltimore	5

3. Agency Size 3

Number of Employees _____

Estimated Number in Ridesharing _____ 4

4. Agency Business 5

Manufacturing	1
Service	2
Government	3

5. Agency Ridesharing Type 6

Owner Operated	1
Third Party Lease (Through Vango)	2
Other leasing Company	3
Agency/Employer Run	4
Employee Run	5
Private Arrangement	6

6. Vango is the Third Party Ridesharing broker in Maryland. Is your agency familiar with the activities of Vango? 7

Yes	1	then go to Question 7
No	2	then go to Question 8

7. What is the kind of service(s) offered to your agency by Vango? 8

Matching List	1
Van Acquisition	2
Driver Training	3
General Information	4
Marketing	5
No Service Offered	6

8. Present status of relation to your agency with Vango. 9

Sought Vango assistance recently	1
Intend to seek Vango assistance	2
We possess all services rendered by Vango	3

9. In our Dealings and experience with Vango, we were 10

Very Satisfied	1
Somewhat Satisfied	2
Somewhat Dissatisfied	3
Very Dissatisfied	4

10. Ridesharing support offered by this agency include: 11

In-house ridesharing matching through a computer	1
In-house matching through a bulletin board	2
Advice to potential ridesharers	3
General Marketing program	4
General Incentives of subsidy, preferential parking, etc.	5

11. The following incentives, privileges have been offered by this agency to promote ridesharing: 12

a. 13

Free parking for ridesharers	1
Preferential parking for ridesharers	2
Free parking for all employees	3
Subsidy	4

b. Cash Incentive/Subsidy 14

Yes	1
No	2

11. c. Other incentives offered at this agency include: 15
    Early pickup time for participants 1
    Time allowance for drop off 2
    Flexible employee hours 3

12. Problems affecting Ridesharing Program

    Indicate in the appropriate cell below, the degree to which the following problems identified affect your agency in organizing ridesharing programs.

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. Lack of support from management				
b. Non interest from employees				
c. Lack of support from Vango				
d. Employee apprehension about program				
e. Lack of funds to undertake program				
f. Others				

13. In your own words, identify and indicate other issues and problems you think confront the organization, management and attraction of employees to rideshare.

_____

_____

_____

_____

_____

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Date: _____

Enumerator: _____

Appendix B

MORGAN
STATE UNIVERSITY
Cold Spring Lane & Hillen Rd. Baltimore, Md 21239

Center for Transportation Studies
(301) 444-3348

A Study to Assess the importance of Personal, Social, Psychological and Other Factors in Ridesharing Programs

Thank you for participating in this survey.

The purpose of this questionnaire is to obtain information on the various factors affecting the success of ridesharing programs across various agencies. Different agencies have different characteristics. In this research, the information you provide will be compared with similar information of other ridesharers in the Baltimore-Washington Metropolitan Area. Your answers will be kept strictly confidential.

Most of the questions can be answered by circling the appropriate codes. If you do not understand a question or wish to discuss it, please feel free to talk to the interviewer. You can help us in our research by completing the questionnaire, and/or allowing a member of our staff to interview you. It will take 10-15 minutes.

We sincerely appreciate the help you can give us. Our preliminary analysis indicates that some people we have interviewed have enjoyed the interview because it makes them think carefully about ridesharing and how it can help them in their choice of transportation modes.

If you have any questions, please do not hesitate to call your ridesharing coordinator or Dr. Mensah at 444-3348.

RIDESHARER SURVEY

Agency Code: _____ (Do not Fill) Ridesharing Group: _____ (Do not Fill)

Ridesharing Type: Carpooling/Vanpooling/Bus Pooling (Circle one)

---

1. How long have you been ridesharing? 1

0 - 6 months	1
6 - 12 months	2
1 - 2 years	3
2 - 3 years	4
3 - 4 years	5
4 - 5 years	6
5 - 6 years	7
6 - 7 years	8
7 - 8 years	9
Over 8	10

2. How many people are in your carpool/vanpool group? 2

0 - 2	1
3 - 5	2
6 - 10	3
11 - 15	4
16 - 20	5
20+	6

3. What were your main reason(s) for joining a carpool/vanpool? 3

To save money on gas	1
To save money on parking	2
To save money on wear and tear on car	3
To avoid owning a car	4
To meet people	5
To meet opposite sex	6
Other _____	7
_____	8
_____	9

4. How did you learn about your present ridesharing group? 4

Through Vango Computeride	1
Employer billboard notice	2
Employer computer matching	3
Radio/TV	4
Fliers/Posters	5
Newspaper/Magazine	6
Word of mouth	7
Other _____	8

5. How did you join or meet your prospective ridesharer(s)? 5

Employer computer matching	1
Vango	2
Personal contact/arrangements	3
Employer billboard matching	4
Other _____	5

6. For the above type of meeting with your present/prospective ridesharer, the following personal details were divulged: 6

Name(s)	1
Department phone number	2
Home phone number	3
Work schedule	4
Other _____	5

7. Do you agree that the way and manner in which the above information was divulged made you hesitant to join the car pool or vanpool? 7

Strongly agree	1
Agree	2
Disagree	3
Strongly disagree	4

8. Which of the following factors made you hesitate to join a ridesharing group? 8

Employer pressure	1
Potential divulsion of privacy e.g., address, phone number, etc.	2
Method of solicitation	3
Background of prospective partners; ethnicity, sex, status, position	4
Other (Specify) _____	5

9. What were some of the reason(s) you considered for the choice of potential or existing carpool partner(s)? 9

Compatibility with potential ridesharer	1
Sex of potential ridesharer	2
Ethnicity of potential ridesharer	3
Personal factors of potential ridesharer	4
Psychological perceptions of crime, etc., of prospective riders	5
Other (Specify) _____	6

10. Of the potential people with which you considered ridesharing, the reasons that they were not satisfactory were 10

Lived too far away.	1
Worked too far away.	2
Poor driving arrangements.	3
Did not know them well enough.	4
Did not have anything personally in common.	5
Time schedules different.	6
Other (Specify) _____	7

11. Of those people in your carpool/vanpool group, most of them are 11

Family members.	1
Co-workers at the same department	2
Co-workers at the same section.	3
Of the same ethnicity.	4
Same status/position on the job.	5
Other (Specify) _____	

12. List the occupations/positions and other characteristics of those people who are in your ridesharing group: 12

Ridesharer #	Position/ Status	Ethnicity	Sex	Age	Marital Status	Religion	Friend Yes/No	Neighbor Yes/No	Co-Worker Yes/No	Approx Income
1										
2										
3										
4										
5										

13. Do you agree with the statement that your ridesharing group came about because of commonality in occupation, job, and/or status on the job. 22

Strongly Agree	1
Agree	2
Disagree	3
Strongly Disagree	4

14. Does your employer offer any of the following incentives to encourage ridesharing? 23

Preferential parking	1
Lower parking fees	2
Flexible work hours	3
Recognition and encouragement	4
Contest/Awards, etc.	5
Subsidy	6
Other (Specify)_____	

15. Which of the following employer incentives are attractive to you? 24

Free parking	1
Reduced parking fees	2
Preferential parking space	3
Administrative time for ridesharing meetings, driver training, etc.	4
Payroll withholdings for the cost of ridesharing	5
Flexible work hours	6
Other (Specify) _____	7
Other (Specify) _____	8

16. Please indicate the importance of each of the following factors as far as they influence you to join a ridesharing program. 25

Factors	Very Important	Important	Neither Important or Unimportant	Unimportant	Very Unimportant
Economic (Savings in gas, repairs, etc.)					
Social/Status (Sex, ethnicity of prospective riders)					
Personal (Privacy, smoking, appearance, etc.)					
Psychological Perceptions (Fear of crime, security, etc.)					

17. How many personal automobiles do you own? 26

None	1
1 car	2
2 cars	3
3 cars	4
4+ cars	5

18. If the price of gasoline continues to fall, do you expect to change the number of times you rideshare to work? 27

No Change	1
Reduce a Few	2
Reduce Some	3
Reduce Most	4
Eliminate Totally	5
Combine driving and Ridesharing	6
Other _____	7

19. Place of residence 28

_____
Zip Code

20. In your own words, indicate your opinions and feelings on ridesharing. 29

_____

_____

_____

_____

21. Ridesharer's Sex: 30

Male	1
Female	2

22. Race or Ethnicity 31

White, Caucasian	1
Hispanic	2
Black, Negro	3
Asian, S. E. Asian, etc.	4
Other (Specify) _____	5

23. Indicate your approximate age group. (e.g., 20-25, 25-30, 30-35, etc.)
Age Group _____

24. At the present time, are you married, widowed, separated, divorced, or single (never married)? 32

Married	1
Widowed	2
Separated	3
Divorced	4
Single (Never married)	5

25. Which of the following groups of income come close to your annual gross income? 34

Less than $5,000	1
$5,000 to $9,999	2
$10,000 to $14,999	3
$15,000 to $19,999	4
$20,000 to $24,999	5
$25,000 to $34,999	6
$35,000 or over	7
Other (Specify)_____	8

26. Circle the approximate position category into which you belong 35

Professional and Technical	1
Manager/Administrator	2
Sales	3
Secretarial/Clerical	4
Craftman/Foreman	5
Factory Operative	6
Transport Operative	7
Laborer (Except Farm)	8
Farm owner	9
Other (Specify)_____	10

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Enumerator _____

Date _____

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TECHNOLOGY SHARING

A PROGRAM OF THE U.S. DEPARTMENT OF TRANSPORTATION