ARIZONA DEPARTMENT OF TRANSPORTATION

REPORT NUMBER: FHWA/AZ 85/198-III

AN EVALUATION OF ALTERNATIVE ECONOMIC INDUCEMENTS TO RIDESHARING FOR THE ARIZONA COMMUTER

Volume III: Appendices

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JUNE 1985

Prepared for:
Arizona Department of Transportation
206 South 17th Avenue
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in cooperation with
U.S. Department of Transportation
Federal Highway Administration

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Technical Report Documentation Page

1. Report No. FHWA/AZ-85/198-III	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle An Evaluation of Alternative Economic Inducements to Ridesharing for the Arizona Commuter Volume III, Appendices.		5. Report Date June, 1985
		6. Performing Organization Code
7. Author(s) Drs. William C. Black, David A. Plane, and Robert A. Westbrook		8. Performing Organization Report No.
9. Performing Organization Name and Address Departments of Marketing and Geography and Regional Development, in conjunction with the Arizona Transportation and Traffic Institute and the University of Arizona; Tucson, Arizona 85721		10. Work Unit No. (TRAIS)
		11. Contract or Grant No. HPR-1-27(198)
12. Sponsoring Agency Name and Address Arizona Transportation Research Center Arizona Department of Transportation 206 South 17th Avenue Phoenix, Arizona 85007		13. Type of Report and Period Covered Final Report Nov '83 - Feb '85
		14. Sponsoring Agency Code

15. Supplementary Notes
In cooperation with U. S. Department of Transportation
Federal Highway Administration

16. Abstract

A report is offered on a study of the relative effectiveness of alternative inducements to ridesharing in the Phoenix and Tucson metropolitan areas. The objectives are to provide evidence on the efficacy of a broad range of incentives and to establish a clearly defined methodology for such assessment.

The study was conducted in three phases:

I. Comprehensive inventory of ridesharing incentives currently employed in metropolitan areas across the country, from which a group of incentives appropriate to the Arizona study areas were selected for further analysis.

II. Surveys of both commuters and their employers were conducted. For commuters, information on present commuting arrangements, demographic and economic characteristics and general attitudes and perceptions of ridesharing, along with the conjoint analysis procedure designed to determine the effect of incentives upon ridesharing lieklihood was gathered. Employer opinions about ridesharing, the acceptability or feasibility of each incentive, and the perceived effect on their employees were also gathered.

III. A market segmentation methodology was first developed to categorize commuters based on behavioral indicators. Statistical estimation of each incentive's effect by segment was then performed. Finally, comparison of segments both within and between study areas was performed.
Volume I, 68 pages, contains Project Overview.
Volume II, 54 pages, contains Research Methodology.

17. Key Words Ridesharing, Carpooling, Market Segmentation, Conjoint Analysis, Transportation System Management, Ridesharing Incentives Design of Ridesharing Programs	18. Distribution Statement No restrictions. This report is available to the public through NTIS, Springfield, Virginia 22161

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
		44	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

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TABLE C1

Demographic/Economic Profiles of Phoenix Respondent Groups

Characteristics	Non-Ridesharers	Bus-Riders	Poolers
Age			
Under 25	6.7%	9.1%	12.5%
25 to 34	39.4	18.2	25.0
35 to 44	31.7	45.5	30.0
45 to 54	12.5	18.2	15.0
54 and over	9.6	9.1	17.5
	100.0%	100.0%	100.0%
Sex			
Male	59.6%	36.4%	47.5%
Female	40.4	63.6	52.5
	100.0%	100.0%	100.0%
Marital Status			
Married	58.7%	63.6%	67.5%
Single	16.3	27.3	15.0
Separated or Divorced	23.1	9.1	15.0
Widowed	1.9	0.0	2.5
	100.0%	100.0%	100.0%
Education			
Non High School Graduate	4.8%	9.1%	7.5%
High School Graduate	23.1	36.4	32.5
1 - 3 Years of College	43.3	36.4	50.0
College Graduate	14.4	0.0	10.0
Post Graduate Work	14.4	18.2	0.0
	100.0%	100.0%	100.0%
Occupation			
Professionals	21.4%	0.0%	10.0%
Managers or Administrators	34.0	27.3	22.5
Sales	0.0	0.0	5.0
Clerical & Support Staff	23.3	72.7	40.0
Craftsmen	8.7	0.0	12.5
Assembly or Line Workers	1.0	0.0	7.5
Laborers	1.9	0.0	0.0
Service Workers	9.7	0.0	2.5
	100.0%	100.0%	100.0%
Household Income			
Less than $10,000	1.0%	9.1%	0.0%
$10,000 to $19,999	18.6	18.2	27.5
$20,000 to $29,999	28.4	36.4	22.5
$30,000 to $39,999	16.7	9.1	30.0
$40,000 to $49,999	16.7	18.2	12.5
$50,000 and over	18.6	9.1	7.5
	100.0%	100.0%	100.0%
Number of Respondents	111	11	40

TABLE C2

Characteristics Of The Journey-to-Work: Phoenix Sample

Characteristics	Non-Ridershares	Bus-Riders	Poolers
Travel Time			
Less than 5 minutes	2.7%	0.0%	0.0%
5 to 15 minutes	23.6	0.0	9.8
16 to 30 minutes	43.6	18.2	46.3
31 to 45 minutes	20.9	36.4	34.1
46 to 60 minutes	4.5	36.4	4.9
More than 1 hour	4.5	9.1	4.9
	100.0%	100.0%	100.0%
Distance (one-way)			
Less than 1 mile	2.9%	0.0%	0.0%
1 to 5 miles	26.9	0.0	19.4
6 to 10 miles	22.1	54.5	19.4
11 to 15 miles	22.1	18.2	22.2
16 to 25 miles	19.2	27.3	37.8
26 to 35 miles	3.8	0.0	8.3
More than 35 miles	2.9	0.0	2.8
	100.0%	100.0%	100.0%
Type of Parking at Work Place			
Public lot or garage	3.7%	-	7.9%
Pay lot or garage	23.9	-	26.3
Employer-Owner lot or garage	63.3	-	47.4
On the street	5.5	-	7.9
Other	1.8	-	5.3
Do not park	1.7	-	5.3
	100 .0%	-	100.0%
Payment For Parking At Work Place			
Respondent pays all	38.9%	-	19.4%
Employer pays all	5.3	-	6.5
Employer pays part	4.2	-	12.9
Cost shared with other poolers	-	-	12.9
Other	2.1	-	3.2
Parking is free	49.5	-	45.2
	100.0%	-	100.0%

TABLE C3

Weekly Pattern Of Modes Used To Commute To Work:
Phoenix Sample

	Number of Days per Week Mode is Used (Percentage of Respondents)						
Mode	0 Days	1 Day	2 Days	3 Days	4 Days	5 Days	6 days
Drive Car/Truck Alone	25.2%	8.0	3.7	1.2	1.8	58.9	1.2
Carpool/Vanpool	72.4%	1.2	1.2	2.5	6.1	16.6	-
Bus	91.4%	0.6	-	1.8	1.2	4.9	-
Motorcycle	98.8%	0.6	-	-	-	0.6	-
Bicycle	98.2%	-	-	1.2	0.6	-	-
Taxi	100.0%	-	-	-	-	-	-
Walk	99.4%	-	0.6	-	-	-	-
Other	98.8%	-	0.6	0.6	-	-	-
Combination of Modes	100.0%	-	-	-	-	-	-

Classification of Respondents by Main Mode of Commuting	Number	Percent of Total
Non-Ridesharers	111	68.1%
Bus Riders	11	6.7
Poolers	41	25.1
Total	163	100.0%

TABLE C4

Daily Activity Patterns Having An Impact
On Ridesharing: Phoenix Sample

Activity Pattern Characteristic	Percentage of Respondents	
	Non-Ridesharers	Poolers
Average Number of Days Respondent's Car is Used During Work Hours		
0 Days per Week	43.2%	43.9%
1 Day per Week	21.6	26.8
2 Days per Week	10.8	14.6
3 Days per Week	13.5	7.3
4 Days per Week	1.8	4.9
5 Days per Week	9.0	2.4
	100%	100%
Mean Days per Week:	1.36	1.10
Reason(s) Car is Used During Work Hours		
For Work-Related Activites	27.0%	21.9%
To Get a Meal or Snack	39.6	31.7
To Pick Up a Few Grocery Items	12.6	9.8
To Pick Up Another Person	0.9	7.3
To Shop for Clothes	6.3	12.2
To Go to Another Job or School	1.8	7.3
To Run Errands	38.7	43.1
Average Number of Days Stops Are Made On The Way To and From Work		
0 Days per Week	18.0%	26.8%
1 Day per Week	22.5	29.3
2 Days per Week	23.4	17.1
3 Days per Week	18.0	7.3
4 Days per Week	6.3	12.2
5 Days per Week	10.8	7.3
6 Days per Week	0.9	-
	100%	100%
Mean Days per Week:	2.08	1.71

Continued

Table C4 (Continued)

Activity Pattern Characteristic	Percentage of Respondents	
	Non-Ridesharers	Poolers
Reason(s) Stops Are Made		
To Get a Meal or Snack	22.5	22.0
To Pick Up a Few Grocery Items	46.8	39.0
To Pick Up Another Person	6.3	26.8
To Shop for the Week's Groceries	9.0	17.1
To Shop for Clothes	12.6	12.2
To Go to Another Job or School	7.2	4.9
To Run Errands	48.6	43.9
Number of Respondents:	111	41

TABLE C5

Structure of Car/Van Pools: Phoenix Sample

Characteristic	Percentage
Size of Pool (Including Respondent)	
2 Persons	63.4%
3 Persons	9.8
4 Persons	14.6
5 Persons	4.9
6 or More Persons	7.3
	100%
Mean Size of Pools	**3.17 persons**
Type of Pool	
All Poolers Work at the Same Site.	68.3%
Poolers Work at More Than One Site.	31.7
	100%
Number of Days per Month Respondent Drives for the Pool	
0 Days	22.0%
1 to 10 Days	17.1
11 to 15 Days	7.3
16 to 20 Days	31.7
21 to 25 Days	17.1
26 Days of More	4.9
	100%
Reimbursement Policy in the Pool	
Others Pay Respondent	27.5%
Respondent Shares Expenses	40.0
No Money is Transferred	32.5
	100%
Number of Respondents:	41

TABLE C6

Overall Satisfaction With Current Commuting Arrangements:

Phoenix Sample

Satisfaction with Current Commuting Arrangement	Percentage of Respondents		
	Non-Ridesharers	Bus Riders	Poolers
"Delighted"	13.0%	0.0%	23.1%
"Pleased"	31.0	9.1	35.9
"Mostly Satisfied"	35.0	54.5	23.1
"Mixed (About Equally) Satisfied and Dissatisfied"	8.0	18.2	10.3
"Mostly Dissatisfied"	6.0	9.1	5.1
"Unhappy"	3.0	9.1	2.6
"Terrible"	4.0	0.0	0.0
	100.0%	100.0%	100.0%
Number of Respondents	100	11	39

	Non-Ridesharers	Bus-Riders	Poolers
Satisfaction Mean[a]	5.12	4.46	5.54

[a] Mean of Responses by Respondent Group Based on "Terrible" = 1, "Unhappy" = 2, "Mostly Dissatisfied" = 3, "Mixed" = 4, "Mostly Satisfied" = 5, "Pleased" = 6, "Delighted" = 7.

Table C7

Sources of Dissatisfaction with Current Commuting Arrangements: Phoenix Sample

Potential Source of Dissatisfaction	Percentage Distributions on 0 to 4 Rating Scale[a]					Mean Rating on 0-4 Scale	Number of Respondents
	0	1	2	3	4		
Worksite Parking							
Non-Ridesharers	65.7%	8.3	8.3	6.5	11.1	0.89	108
Poolers	53.7%	19.5	7.3	4.9	14.6	1.07	41
Road Congestion							
Non-Ridesharers	11.1%	15.7	25.9	17.6	29.6	2.39	108
Bus Riders	20.0%	-	10.0	10.0	60.0	2.90	0
Poolers	9.8%	19.5	14.6	22.0	34.1	2.51	41
Trip Duration							
Non-Ridesharers	37.6%	20.2	16.5	10.1	15.6	1.46	109
Bus Riders	10.0%	20.0	40.0	30.0	-	1.90	10
Poolers	9.8%	19.5	14.6	22.0	34.1	2.51	41
Other (Individually Specified)							
Non-Ridesharers	9.5%	-	4.8	28.6	57.1	3.24	21
Bus Riders	-	-	-	25.0	75.0	3.75	4
Poolers	20.0%	-	-	20.0	60.0	3.00	10

[a] Expressed on a 5-point scale with 0 = "Not at all Bothersome" to 4 = "Very Bothersome."

TABLE C8

Phoenix Commuters' Attitudes Toward

Ridesharing

Attitudes Toward Ridesharing[a]	Non-Ridesharers	Bus Riders	Poolers	All Respondents
Generally Unfavorable	22.9%	0.0%	4.9%	16.8%
Neutral or Mixed	41.0	22.2	14.6	32.9
Generally Favorable	32.4	66.7	63.4	42.6
Highly Favorable	3.8	11.1	17.1	7.7
	100.0%	100.0%	100.0%	100.0%
Number of Respondents:	105	9	41	155

[a] Based on 9 item ridesharing attitude scale

TABLE C9
Opinions About Ridesharing: Phoenix Sample

Opinion Statements	Mean Response[a]		
	Non-Ridesharers	Bus Riders	Poolers
"Compared to driving alone...			
...Ridesharing is safer."	2.96	3.40	3.29
...Ridesharing is a faster way to get to and from work."	2.30	2.80	2.56
...Ridesharing saves money."	4.10	4.50	4.37
...Ridesharing makes the ride to and from work more relaxing."	3.14	3.80	3.76
...Ridesharing reduces pollution."	4.10	4.40	4.10
...Ridesharing reduces the strain of commuting."	3.50	4.00	3.61
...Ridesharing reduces traffic congestion."	4.14	4.20	4.37
...Ridesharing gets you home from work when expected."	2.97	3.30	3.44
...Ridesharing is convenient."	2.82	3.60	3.68
...Ridesharing saves energy."	4.12	4.44	4.27
...Ridesharing gives you a chance to be with friends or coworkers."	3.64	3.80	3.90
...Ridesharing is the 'right' thing to do."	3.29	3.70	3.71
...Ridesharing provides more personal security."	2.92	3.50	3.39

Continued

a Expressed on a 5-point scale with 5 = "strongly agree", 4 = "agree", 3 = "neither agree nor disagree", 2 = "disagree", 1 = "strongly disagree."

TABLE C9 (Continued)

Opinion Statements	Mean Response[a]		
	Non-Ridesharers	Bus Riders	Poolers
"Compared to driving alone...			
...Ridesharing makes the vehicle too croweded."	3.19	3.50	3.76
...Ridesharing is not a reliable way to get to work."	3.12	4.00	3.76
...Ridesharing prevents you from doing errands or shopping on the way."	2.08	2.00	2.49
...Ridesharing increases the liklihood of being late for work."	2.73	3.10	3.10
...Ridesharing is more expensive than driving my own car."	3.80	3.60	4.12
...Ridesharing makes you wait."	2.42	3.10	2.93
...Ridesharing doesn't give you enough space for your packages."	3.13	3.10	3.49
...Ridesharing is not fashionable in most social circles."	3.28	3.60	3.49
...Ridesharing is a nuisance to arrange."	2.74	2.80	3.27
...Ridesharing doesn't allow the flexibility of setting your own work schedule."	2.15	2.30	2.56
...Ridesharing is really sort of a bother."	2.54	3.00	3.27
...Ridesharing can be aggravating."	2.30	2.40	2.59
...Ridesharing would increase my exposure to smoking."	2.83	2.60	3.34
Number of Respondents:	108	10	41

[a] Expressed on a 5-point scale with 5 = "strongly agree", 4 = "agree", 3 = "neither agree nor disagree", 2 = "disagree", 1 = "strongly disagree."

TABLE C10

General Attitudes Toward Ridesharing:

Pheonix Sample

Attitude	Percentage Distribution of Overall Impressions of Ridesharing (Based on 7-Point Scale)							Mean Rating on 1-7 Scale	Number of Respondents
Ridesharing is ...	[Bad] <——————+——————> [Good]								
	1	2	3	4	5	6	7		
Non-Ridesharers	1.0	1.0	5.7	24.8	21.9	21.9	23.8	5.27	105
Bus Riders	0.0	0.0	0.0	0.0	12.5	50.0	37.5	6.25	8
Poolers	0.0	0.0	5.1	2.6	12.8	28.2	51.3	6.18	38
Ridesharing is ...	[Foolish] <——————+——————> [Wise]								
	1	2	3	4	5	6	7		
Non-Ridesharers	0.0	1.0	3.9	26.5	25.5	21.6	21.6	5.28	102
Bus Riders	0.0	0.0	0.0	25.0	0.0	25.0	50.0	6.00	8
Poolers	0.0	0.0	5.3	5.3	5.3	31.6	52.6	6.21	38
Ridesharing is ...	[Undesirable] <——+——> [Desirable]								
	1	2	3	4	5	6	7		
Non-Ridesharers	7.8	6.9	12.7	35.3	13.7	10.8	12.7	4.24	102
Bus Riders	0.0	0.0	0.0	12.5	50.0	12.5	25.0	5.50	8
Poolers	2.6	2.6	5.3	5.3	23.7	28.9	31.6	5.58	38

TABLE C11

Likelihood of Ridesharing During the Next 12 Months:

Phoenix Sample

Percentage Likelihood	Percentage of Respondents		
	Non-Ridesharers	Bus Riders	Poolers
0%	36.9%	11.1%	7.3%
10	30.1	33.3	2.4
20	9.7	-	2.4
30	2.9	-	2.4
40	3.9	11.1	2.4
50	5.8	11.1	2.4
60	2.9	-	2.4
70	2.9	11.1	-
80	2.9	-	9.8
90	1.0	11.1	14.6
100	1.0	11.1	53.7
	100.0%	100.0%	100.0%
Number of Respondents	103	9	41
Mean Likelihood	18.3%	42.2%	79.8%

TABLE C12

Bus Rider Satisfaction:

Phoenix Sample

Pooling Experiences	Percentage of Poolers
Feelings About Pooling Experiences	
"Delighted"	0.0%
"Pleased"	27.3
"Mostly Satisfied"	45.5
"Mixed"	18.2
"Mostly Dissatisfied"	0.0
"Unhappy"	9.1
"Terrible"	0.0
	100.0%
Number of Respondents:	11
Bus Rider Experiences Have Been	
"Much better than expected"	27.3%
"Slightly better than expected"	27.3
"About as expected"	45.7
"Slightly worse than expected"	0.0
"Much worse than expected"	0.0
	100.0%
Number of Respondents:	35

TABLE C13

Car/Van Pooler Satisfaction:

Phoenix Sample

Pooling Experiences	Percentage of Poolers
Feelings About Pooling Experiences	
"Delighted"	12.5%
"Pleased"	40.0
"Mostly Satisfied"	32.5
"Mixed"	10.0
"Mostly Dissatisfied"	0.0
"Unhappy"	2.5
"Terrible"	2.5
	100.0%
Number of Respondents:	40
Car/Van Pooling Experiences Have Been	
"Much better than expected"	45.7%
"Slightly better than expected"	8.6
"About as expected"	45.7
"Slightly worse than expected"	0.0
"Much worse than expected"	0.0
	100.0%
Number of Respondents:	35

TABLE C14

Socio-Economic Profiles Of Target Market Segments:

Phoenix Non-Ridesharers

Characteristics	All Non-Ridesharers	Target Market Segment			
		A	B	C	D
Sex					
Male	59.6%	75.0%	54.2%	50.0%	56.3%
Female	40.4	24.0	45.8	50.0	48.8
	100.0%	100.0%	100.0%	100.0%	100.0%
Age					
Under 35	46.1%	16.7%	54.2%	33.3%	56.3%
35 to 44	31.7	50.0	25.0	50.0	18.8
45 and Over	22.1	33.3	20.8	16.7	25.1
	100.0%	100.0%	100.0%	100.0%	100.0%
Education					
No College	27.9%	8.3%	37.5%	33.3%	37.6%
1 to 3 Yrs. of College	43,3	58.8	45.8	41.7	18.8
College Graduate	288.8	33.3	16.6	25.0	43.8
	100.0%	100.0%	100.0%	100.0%	100.0%
Total Household Income					
Less than $20,000	19.6%	8.3%	25.0%	25.0%	12.6%
$20,000 - $39,999	45.1	25.0	50.0	41.7	50.6
$40,000 or more	35.3	66.7	25.0	33.3	37.6
	100.0%	100.0%	100.0%	100.0%	100.0%
Number of Respondents:	104	12	24	12	16

TABLE C15

Satisfaction With Current Commuting Arramgements:

Phoenix Non-Ridesharers

Aspect of Commuting	Mean Rating of "Bothersomeness" Target Market Segmemt			
	A	B	C	D
Worksite Parking	0.75	0.76	0.86	1.25
Road Congestion	2.42	2.12	2.57	2.50
Trip Length	1.33	1.64	1.29	1.56
Number of Respondents:	12	25	14	16

[a] Expressed on a 5-point scale with 0 = "Not at all Bothersome" and 4 = "Very Bothersome"

TABLE D1
Demographic/Economic Profiles of Tucson Respondent Groups

Characteristics	Non-Ridesharers	Bus-Riders	Poolers
Age			
Under 25	2.9%	0.0%	6.5%
25 to 34	35.9	20.0	30.6
35 to 44	36.9	20.0	33.9
45 to 54	18.4	20.0	17.7
54 and over	5.9	40.0	11.3
	100.0%	100.0%	100.0%
Sex			
Male	33.0%	20.0%	48.4%
Female	67.0	80.0	51.6
	100.0%	100.0%	100.0%
Marital Status			
Married	66.0%	80.0%	66.1%
Single	15.5	10.0	22.6
Separated or Divorced	16.5	10.0	8.1
Widowed	1.9	0.0	3.2
	100.0%	100.0%	100.0%
Education			
Non High School Graduate	2.9%	0.0%	1.6%
High School Graduate	20.4	40.0	19.4
1 - 3 Years of College	42.7	40.0	35.5
College Graduate	19.4	10.0	21.0
Post Graduate Work	14.6	10.0	22.6
	100.0%	100.0%	100.0%
Occupation			
Professionals	30.6%	10.0%	50.8%
Managers or Administrators	24.5	10.0	9.8
Sales	10.2	20.0	3.3
Clerical & Support Staff	26.5	60.0	32.8
Craftsmen	3.1	0.0	1.6
Assembly or Line Workers	3.1	0.0	1.6
Laborers	2.0	0.0	0.0
Service Workers	0.0	0.0	0.0
	100.0%	100.0%	100.0%
Household Income			
Less than $10,000	6.1%	11.1%	1.7%
$10,000 to $19,999	16.3	11.1	12.1
$20,000 to $29,999	25.5	44.4	32.8
$30,000 to $39,999	19.4	11.1	25.9
$40,000 to $49,999	17.3	22.2	19.0
$50,000 and over	15.3	0.0	8.6
	100.0%	100.0%	100.0%
Number of Respondents	103	10	65

TABLE D2

Characteristics of the Journey-to-Work: Tucson Sample

Characteristics	Non-Ridesharers	Bus-Riders	Poolers
Travel Time			
Less than 5 minutes	4.5%	0.0%	1.6%
5 to 15 minutes	32.7	10.0	1.6
16 to 30 minutes	39.1	30.0	40.6
31 to 45 minutes	20.9	40.0	40.6
46 to 60 minutes	2.7	20.0	14.1
More than 1 hour	0.0	0.0	1.6
	100.0%	100.0%	100.0%
Distance (one-way)			
Less than 1 mile	2.8%	11.1%	0.0%
1 to 5 miles	21.7	11.1	5.1
6 to 10 miles	31.1	11.1	6.8
11 to 15 miles	17.9	11.1	8.5
16 to 25 miles	19.8	44.4	45.8
26 to 35 miles	4.7	11.1	18.6
More than 35 miles	1.9	0.0	15.3
	100.0%	100.0%	100.0%
Type of Parking at Work Place			
Public lot or garage	15.9%	-	6.5%
Pay lot or garage	3.7	-	0.0
Employer-Owner lot or garage	71.0	-	90.3
On the street	2.8	-	1.6
Other	5.6	-	0.0
Do not park	0.9	-	1.6
	100.0%	-	100.0%
Payment For Parking At Work Place			
Respondent pays all	16.0%	-	0.0%
Employer pays all	0.0	-	0.0
Employer pays part	0.0	-	0.0
Cost shared with other poolers	-	-	0.0
Other	4.9	-	10.6
Parking is free	79.0	-	89.4
	100.0%	-	100.0%

TABLE D3

Weekly Pattern of Modes Used to Commute to Work:

Tucson Sample

Mode	Number of Days per Week Mode is used (Percentage of Respondents)							
	0 Day	1 Day	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days
Drive Car /Truck Alone	32.8%	3.7	4.2	2.1	7.9	47.1	1.6	0.5
Carpool /Vanpool	65.1%	1.6	0.5	4.8	6.9	21.2	-	-
Bus	94.2%	-	-	0.5	1.6	3.7	-	-
Motorcycle	100.0%	-	-	-	-	-	-	-
Bicycle	98.0%	1.0	-	0.5	-	0.5	-	-
Taxi	100.0%	-	-	-	-	-	-	-
Walk	99.5%	0.5	-	-	-	-	-	-
Other	100.0%	-	-	-	-	-	-	-
Combination of Modes	100.0%	-	-	-	-	-	-	-

Classification of Respondents by Main Mode of Commuting	Number	Percent of Total
Non-Ridesharers	114	60.3%
Bus Riders	10	5.3
Poolers	65	34.4
Total	189	100.0%

TABLE D4

Daily Activity Patterns Having An Impact
On Ridesharing: Tucson Sample

Activity Pattern Characteristic	Percentage of Respondents	
	Non-Ridesharers	Poolers
Average Number of Days Respondent's Car is Used Druing Work Hours		
0 Days per Week	53.5%	70.8%
1 Day per Week	21.9	16.9
2 Days per Week	7.9	10.8
3 Days per Week	7.9	1.5
4 Days per Week	-	-
5 Days per Week	7.9	-
6 Days per Week	0.9	-
	100%	100%
Mean Days per Week:	1.06	0.43
Reason(s) Car is Used During Work Hours		
For Work-Related Activites	22.8%	16.9%
To Get a Meal or Snack	28.1	20.0
To Pick Up a Few Grocery Items	9.6	7.7
To Pick Up Another Person	4.4	6.2
To Shop for Clothes	1.8	3.12
To Go to Another Job or School	6.1	6.2
To Run Errands	26.3	13.8
Average Number of Days Stops Are Made On The Way To and From Work		
0 Days per Week	16.7%	49.2%
1 Day per Week	20.2	20.0
2 Days per Week	25.4	12.3
3 Days per Week	19.3	7.7
4 Days per Week	5.3	3.1
5 Days per Week	12.3	7.7
6 Days per Week	0.9	-
	100%	100%

Continued

TABLE D4 (Continued)

Activity Pattern Characteristic	Percentage of Respondents	
	Non-Ridesharers	Poolers
Reason(s) Stops Are Made		
To Get a Meal or Snack	22.8	13.8
To Pick Up a Few Grocery Items	51.8	24.6
To Pick Up Another Person	10.5	32.3
To Shop for the Week's Groceries	16.7	7.7
To Shop for Clothes	7.0	1.5
To Go to Another Job or School	12.3	4.6
To Run Errands	57.0	26.2
Number of Respondents:	114	65

TABLE D5

Structure of Car/Van Pools: Tucson Sample

Characteristic	Percentage
Size of Pool (Including Respondent)	
2 Persons	42.2%
3 Persons	6.3
4 Persons	23.4
5 Persons	12.5
6 or More Persons	15.6
	100%
Mean Size of Pools	**3.86 persons**
Type of Pool	
All Poolers Work at the Same Site.	90.6%
Poolers Work at More Than One Site.	9.4
	100%
Number of Days per Month Respondent Drives for the Pool	
0 Days	21.0%
1 to 10 Days	21.0
11 to 15 Days	6.5
16 to 20 Days	29.0
21 to 25 Days	11.3
26 Days of More	11.3
	100%
Reimbursement Policy in the Pool	
Others Pay Respondent	3.1%
Respondent Shares Expenses	14.1
No Money is Transferred	82.8
	100%
Number of Respondents:	64

TABLE D6

Overall Satisfaction With Current Commuting Arrangements:

Tucson Sample

Percentage of Respondents Who Feel:	Non-Ridesharers	Bus Riders	Poolers
"Delighted"	26.9%	11.1%	20.0%
"Pleased"	23.7	22.2	30.0
"Mostly Satisfied"	24.7	55.6	31.7
"Mixed (About Equally) Satisfied and Dissatisfied"	14.0	11.1	16.7
"Mostly Dissatisfied"	5.4	0.0	1.7
"Unhappy"	3.2	0.0	0.0
"Terrible"	2.2	0.0	0.0
	100.0%	100.0%	100.0%
Total Respondents:	93	9	60

	Non-Ridesharers	Bus-Riders	Poolers
Satisfaction Mean*	5.34	5.33	5.50

* Mean of Responses by Respondent Group Based on Terrible = 1, Unhappy = 2, Mostly Dissatisfied = 3, Mixed = 4, Mostly Satisfied = 5, Pleased = 6, Delighted = 7.

Table D7

Sources of Dissatisfaction with Current Commuting Arrangements: Tucson Sample

Potential Source of Dissatisfaction	Percentage Distributions on 0 to 4 Rating Scale[a]					Mean Rating on 0-4 Scale	Number of Respondents
	0	1	2	3	4		
Worksite Parking							
Non-Ridesharers	6.6%	13.4	8.0	5.4	11.6	0.92	112
Poolers	83.1%	7.7	-	1.5	7.7	0.43	65
Road Congestion							
Non-Ridesharers	17.0%	12.5	20.5	24.1	25.9	2.30	112
Bus Riders	28.6%	-	-	-	71.4	2.86	7
Poolers	21.8%	15.4	29.2	23.1	10.8	1.86	65
Trip Duration							
Non-Ridesharers	41.1%	19.6	17.0	9.8	12.5	1.33	112
Bus Riders	42.9%	-	-	14.3	42.9	2.14	7
Poolers	29.2%	18.5	26.2	10.8	15.4	1.65	65
Other (Individually Specified)							
Non-Ridesharers	25.9%	-	3.7	11.1	59.3	2.78	27
Bus Riders	-	-	-	50.0	50.0	3.50	2
Poolers	12.5%	-	12.5	37.5	37.5	2.88	8

[a] Expressed on a 5-point scale with 0= "Not at all Bothersome" to 4= "Very Bothersome."

TABLE D8

Tucson Commuters' Attitudes Toward

Ridesharing

Attitudes Toward Ridesharing[a]	Non-Ridesharers	Bus Riders	Poolers	All Respondents
Generally Unfavorable	29.6%	22.2%	3.2%	20.1%
Neutral or Mixed	40.7	22.2	16.1	31.3
Generally Favorable	24.1	33.3	53.2	34.6
Highly Favorable	5.6	22.2	27.4	14.0
	100.0%	100.0%	100.0%	100.0%
Number of Respondents:	108	9	62	179

[a] Based on 9 item ridesharing attitude scale

TABLE D9

Opinions About Ridesharing: Tucson Sample

Opinion Statements	Mean Response[a]		
	Non-Ridesharers	Bus Riders	Poolers
"Compared to driving alone...			
...Ridesharing is safer."	2.98	3.11	3.52
...Ridesharing is a faster way to get to and from work."	2.11	2.44	2.42
...Ridesharing saves money."	4.05	4.11	4.43
...Ridesharing makes the ride to and from work more relaxing."	3.00	3.78	3.78
...Ridesharing reduces pollution."	4.07	4.44	4.11
...Ridesharing reduces the strain of commuting."	3.40	4.00	3.86
...Ridesharing reduces traffic congestion."	4.14	4.40	4.29
...Ridesharing gets you home from work when expected."	3.08	3.30	3.22
...Ridesharing is convenient."	2.75	3.78	3.61
...Ridesharing saves energy."	4.16	4.44	4.40
...Ridesharing gives you a chance to be with friends or coworkers."	3.64	3.44	3.87
...Ridesharing is the 'right' thing to do."	3.31	3.22	3.76
...Ridesharing provides more personal security."	3.12	3.11	3.40

Continued

[a] Expressed on a 5-point scale with 5 = "strongly agree", 4 = "agree", 3 = "neither agree nor disagree", 2 = "disagree", 1 = "strongly disagree."

Table D9 (Continued)

Opinion Statements	Mean Response[a]		
	Non-Ridesharers	Bus Riders	Poolers
"Compared to driving alone...			
...Ridesharing makes the vehicle too croweded."	3.33	3.67	3.69
...Ridesharing is not a reliable way to get to work."	3.12	3.22	4.14
...Ridesharing prevents you from doing errands or shopping on the way."	1.97	2.33	2.70
...Ridesharing increases the liklihood of being late for work."	2.75	3.78	3.34
...Ridesharing is more expensive than driving my own car."	3.63	3.89	4.30
...Ridesharing makes you wait."	2.32	2.89	2.84
...Ridesharing doesn't give you enough space for your packages."	3.10	3.44	3.54
...Ridesharing is not fashionable in most social circles."	3.37	3.44	3.49
...Ridesharing is a nuisance to arrange."	2.56	2.67	3.30
...Ridesharing doesn't allow the flexibility of setting you own work schedule."	2.06	2.33	2.62
...Ridesharing is really sort of a bother."	2.44	3.00	3.49
...Ridesharing can be aggravating."	2.30	2.56	2.75
...Ridesharing would increase my exposure to smoking."	2.65	2.89	3.68
Number of Respondents:	113	9	64

a Expressed on a 5-point scale with 5 = "strongly agree", 4 = "agree", 3 = "neither agree nor disagree", 2 = "disagree", 1 = "strongly disagree."

TABLE D10

General Attitudes Toward Ridesharing:

Tucson Sample

Attitude	Percentage Distribution of Overall Impressions of Ridesharing (Based on 7-Point Scale)							Mean Rating on 1-7 Scale	Number of Respondents
Ridesharing is ...	[Bad] <----------+----------> [Good]								
	1	2	3	4	5	6	7		
Non-Ridesharers	0.0	1.9	1.9	34.3	22.2	22.2	17.6	5.14	108
Bus Riders	0.0	0.0	0.0	14.3	14.3	0.0	71.4	6.29	7
Poolers	0.0	0.0	0.0	9.7	11.3	29.0	50.0	6.19	62
Ridesharing is ...	[Foolish] <---------+----------> [Wise]								
	1	2	3	4	5	6	7		
Non-Ridesharers	0.0	0.9	0.0	26.9	27.8	26.9	17.6	5.32	108
Bus Riders	0.0	0.0	14.3	14.3	0.0	0.0	71.4	6.00	7
Poolers	0.0	0.0	1.6	4.8	16.1	29.0	48.4	6.18	62
Ridesharing is ...	[Undesirable] <----+----> [Desirable]								
	1	2	3	4	5	6	7		
Non-Ridesharers	9.3	11.1	6.5	31.5	14.8	11.1	15.7	4.28	108
Bus Riders	12.5	0.0	12.5	12.5	12.5	0.0	50.0	5.13	8
Poolers	1.6	1.6	1.6	8.2	19.7	26.2	41.0	5.85	61

TABLE D11

Likelihood of Ridesharing During the Next 12 Months:

Tucson Sample

Percentage Likelihood	Percentage of Respondents		
	Non-Ridesharers	Bus Riders	Poolers
0%	45.5%	66.7%	4.7%
10	28.6	-	-
20	8.0	-	-
30	0.9	-	3.1
40	2.7	-	1.6
50	8.0	11.1	4.7
60	-	-	3.1
70	0.9	-	1.6
80	1.8	-	10.9
90	0.9	-	28.1
100	2.7	22.2	42.2
	100.0%	100.0%	100.0%
Number of Respondents	112	9	64
Mean Likelihood	15.4%	27.8%	83.1%

TABLE D12

Bus Rider Satisfaction:

Tucson Sample

Pooling Experiences	Percentage of Poolers
Feelings About Pooling Experiences	
"Delighted"	10.0
"Pleased"	20.0
"Mostly Satisfied"	50.0
"Mixed"	10.0
"Mostly Dissatisfied"	10.0
"Unhappy"	0.0
"Terrible"	0.0
	100.0
Number of Respondents:	10
Bus Riders Experiences Have Been	
"Much better than expected"	30.0
"Slightly better than expected"	30.0
"About as expected"	20.0
"Slightly worse than expected"	20.0
"Much worse than expected"	0.0
	100.0%
Number of Respondents:	10

TABLE D13

Car/Van Pooler Satisfaction:

Tucson Sample

Pooling Experiences	Percentage of Poolers
Feelings About Pooling Experiences	
"Delighted"	24.6
"Pleased"	31.1
"Mostly Satisfied"	34.4
"Mixed"	9.8
"Mostly Dissatisfied"	0.0
"Unhappy"	0.0
"Terrible"	0.0
	100.0
Number of Respondents:	60
Car/Van Pooling Experiences Have Been	
"Much better than expected"	40.6
"Slightly better than expected"	9.4
"About as expected"	48.4
"Slightly worse than expected"	1.6
"Much worse than expected"	0.0
	100.0%
Number of Respondents:	64

TABLE D14

Socio-Economic Profiles Of Target Market Segments:

Tucson Non-Ridesharers

Characteristics	All Non-Ridesharers	Target Market Segment			
		A	B	C	D
Sex					
Male	33.0%	22.7%	43.8%	12.5%	42.1%
Female	67.0	77.3	56.3	87.5	57.9
	100.0%	100.0%	100.0%	100.0%	100.0%
Age					
Under 35	38.8%	40.9%	31.3%	50.0%	31.6%
35 to 44	36.9	45.5	43.8	37.5	26.3
45 and Over	24.3	13.5	25.1	12.5	42.1
	100.0%	100.0%	100.0%	100.0%	100.0%
Education					
No College	23.3%	27.3%	12.5%	22.5%	21.1%
1 to 3 Yrs. of College	42.7	40.9	43.8	62.5	42.1
College Graduate	34.0	31.8	43.8	25.0	36.8
	100.0%	100.0%	100.0%	100.0%	100.0%
Total Household Income					
Less than $20,000	22.4%	19.0%	20.0%	12.5%	15.8%
$20,000 - $39,999	44.9	71.4	33.4	25.0	47.4
$40,000 or more	32.6	9.5	46.6	62.5	36.8
	100.0%	100.0%	100.0%	100.0%	100.0%
Number of Respondents:	103	21	15	8	19

TABLE D15

Satisfaction With Current Commuting Arrangements:

Tucson Non-Ridesharers

Aspect of Commuting	Mean Rating of "Bothersomeness" Target Market Segmemt			
	A	B	C	D
Worksite Parking	1.17	0.63	0.50	1.00
Road Congestion	1.96	1.95	1.75	2.65
Trip Length	0.74	1.32	0.88	1.65
Number of Respondents:	23	19	8	20

[a] Expressed on a 5-point scale with 0 = "Not at all Bothersome" and 4 = "Very Bothersome"

TABLE E1

Characteristics of Responding Organizations:

Phoenix and Tucson

Characteristics	Phoenix	Tucson
Type of Organization		
Manufacturing	11.1%	50.0%
Retailing	11.1	12.5
Education	22.2	25.0
General Offices	22.2	0.0
Mining	0.0	12.5
Government	33.3	0.0
	100.0%	100.0%
Employee Size		
Less than 200 employees	33.3%	25.0%
201 - 499	11.1	12.5
500 - 999	0.0	0.0
1000 - 1999	11.1	12.5
2000 - 4999	11.1	12.5
5000 and over	22.2	12.5
Not specified	11.1	12.5
	100.0%	100.0%
Number of Respondents:	9	8

TABLE E2

Organizational Support for Ridesharing

Attitude Toward Ridesharing	Support for Ridesharing Evaluation Provided By Key Informant[a]	
	Phoenix Employers	Tucson Employers
Degree of Active Encouragement of Ridesharing	2.111	2.750
Degree of Support and Enthusiasm for Ridesharing	2.111	2.250
Perception of Benefit of Ridesharing to Organization	1.556	1.500
Perception of Benefit of Ridesharing to Employee	2.333	2.875
Degree of Favorability Toward Ridesharing by:		
Top Management	1.444	1.875
Middle/Lower Management	1.333	2.000
Remainder of Workforce	1.556	2.000
Number of Respondents:	9	8

[a] Expressed on 11-point scale (+5 to -5) with +5 representing highest degree of favorability and zero representing neutrality.

TABLE E3

Current Implementation of Ridesharing Incentive Programs
by Respondent Organizations

Ridesharing Incentive Program	Percentage of Employers Offering Program	
	Phoenix Employers	Tucson Employers
Parking		
Parking lot for all employees	77.8%	75.0%
Reserved parking for ridesharers	22.2	25.0
Covered parking for ridesharers	0.0	0.0
Free parking for ridesharers	0.0	12.5
Reimpursement of ridesharers parking cost	11.1	0.0
Transit		
Employee discounts for transit use	11.1	25.0
Specially arranged transit stops	11.1	25.0
Express bus service	0.0	12.5
Hours		
Staggered work hours	44.4	27.5
Flexible work hours	33.3	25.0
Ridesharing Programs		
Ridematching service	88.9	50.0
Employee time off to arrange pooling	22.2	12.5
Company-owned vans provided	0.0	12.5
Direct ridesharing subsidies	11.1	0.0
Distribution of ridesharing literature	66.7	62.5
Number of Respondents:	9	8

TABLE E4

Increase in Likelihood of Adoption of Selected Incentive Programs Due to Employers' Cost Reimbursement

Ridesharing Incentive Program	Number of Firms Showing Percent Increase in Likelihood of Adoption Due to Reimbursement of 1/2 of Employer's Costs							
	.0%	.10%	.20%	.30%	.40%	.50%	.60%	.70%*
Phoenix Employers								
Free Computerized Ridematching	4	1						
Full-Time Ridesharing Coordinator	6			1	1			
Vans Provided for Ridesharing	6	1			1			
One-half of Employee Commuting Costs Reimbursed	4	3	1		1			
All Commuting Costs Reimbursed	5	2				1		
Tucson Employers								
Free Computerized Ridematching	4		1	1				
Full-Time Ridesharing Coordinator	5		1					
Vans Provided for Ridesharing	5			1			1	1
One-half of Commuting Costs Reimbursed	5		1	1		1		
All Commuting Costs Reimbursed	5		1	1				

* 70% and higher.