

Mills, Michael K. (2008) *Environmentally-active consumers' preferences for zero-emission vehicles: public sector and marketing implications*. Journal of Nonprofit and Public Sector Marketing, 19 (1). pp. 1-33. ISSN 1049-5142)

Table 1
- SAMPLE PROFILE -

SEX:		WHERE RESIDE:	
Male	47%	Northern California	52%
Female	53%	Southern California	48%
AGE:		MARITAL STATUS:	
21-35	39%	Married	64%
36-50	32%	Single (never married)	20%
51-70	29%	Separated/Divorced/Widowed	16%
Mean age	41 ½		
RESIDENCE:		INCOME	
Single Family Home	64%	\$50,000-\$59,999	52%
Apartment	18%	\$60,000-\$99,999	34%
Condo/Duplex/Other	18%	\$100,000 or more	14%
		Average income	\$70,800
NUMBER OF VEHICLES OWN:		AUTO CLUB MEMBER:	
Two	66%	Yes	71%
Three	21%	No	29%
Four +	13%		
Average	2.6		
MILES DRIVE PRIMARY VEHICLE:		MILES DRIVE SECONDARY VEHICLE:	
Under 10,000	22%	Under 10,000	52%
10,000 – 19,999	52%	10,000 – 19,999	40%
20,000 or more	26%	20,000 or more	8%
Mean	16,300 miles	Mean	10,600 miles
CONTRIBUTED VERY SIG.TIME &/OR MONEY TO ECOLOGY:		RACE	
	54%	Caucasian/White	87%
		Black/Afro American	5%
		Hispanic	4%
		Asian	2%
		American Indian	2%

Table 2
CLUSTER GROUP NUMBER

VEHICLE	TOTAL	1	2	3
		(ICE/SPACE)	(SPEED/TIME/ LOW COST)	(POLLUTION/ SAFETY)
Mid-Sized (HIGH)	53%	61%	50%	48%
Mid-Sized (LOW)	15%	13%	14%	17%
SMALL & COMFORTABLE	24%	23%	26%	23%
SMALL & SPARTAN	8%	3%	10%	12%

Figure 1
- TRADE-OFF ATTRIBUTES FOR ELECTRIC VEHICLE STUDY -

ELECTRIC PACKAGE:

Electric Windows/Mirrors/Seats
No Package

SEATING CAPACITY:

2-No Back Seat
4-Small Back Seat
4/5-Full Back Seat

TOP CRUISING SPEED:

55 MPH
70 MPH
85 MPH

TAX INCENTIVES/REBATES:

None
10% Off Electric Bill
10% Off Electric Bill & \$1500 Credit on Taxes

RECHARGE TIME:

3-4 Hours
7-8 Hours
11-12 Hours

SAFETY SPECS:

Meet US Gov't Requirements
Exceed US Requirements by 10%
Exceed US Requirements by 25%

AIR BAGS & ABS:

Has Air Bag & ABS
Has Air Bag Only
Has ABS Only
Neither

PURCHASE PRICE:

\$ 7,000
\$11,000
\$15,000
\$19,000
\$23,000

INTERIOR:

Functional
Practical
Space Ship Like
"Office-On-Wheels"
Luxurious

AIR CONDITIONING:

Air Conditioning
No Air Conditioning

STYLING:

Looks like Conventional Car.
Similar to Conventional./Can Tell Electric
Unique, But Attractive

CARGO SPACE:

23 Grocery Bags
5-6 Grocery Bags
8-10 Grocery Bags

REDUCES TOXIC EMISSIONS:

100%
67%
33%

ACCELERATION:

More Than Adequate
Comparable to Conventional.
Barely Acceptable

BATTERY RANGE:

50 Miles
100 Miles
150 Miles
200 Miles

POWER SOURCE:

Electric Battery Only
Electric & Solar Batteries
Electric & Methanol Engine
Electric & Gasoline Engine

OPERATING COSTS:

25% Less than Conventional
10% Less Than Conventional
Same As Conventional
10% More Than Conventional
25% More Than Conventional

ENDORSEMENTS:

Consumer Reports
Motor Trend Magazine
AAA
EPA
Sierra Club
DOT
None

Figure 2
- 10 MOST IMPORTANT TRADE-OFF ISSUES -

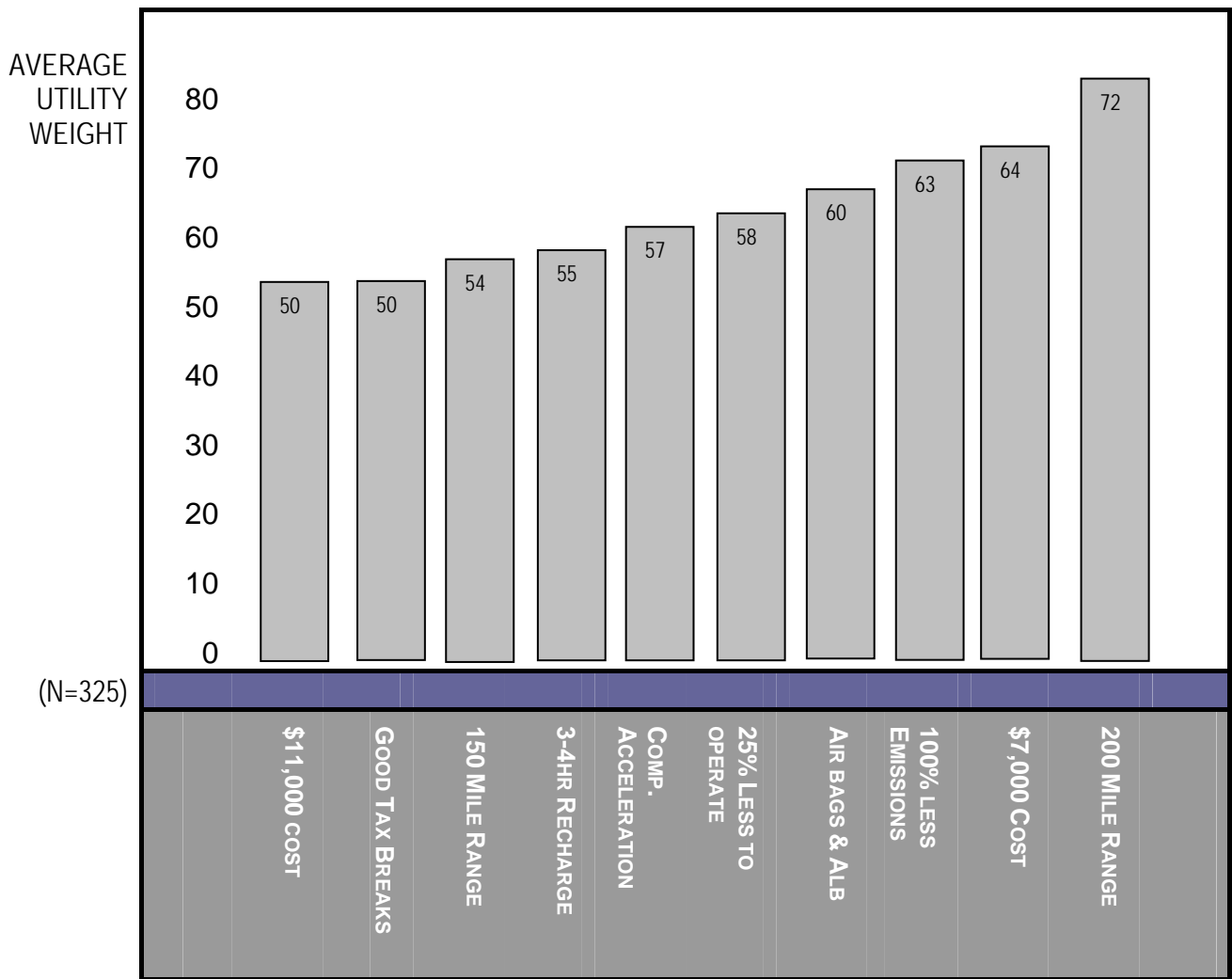


Figure 3
ATTRIBUTE IMPORTANCE
- ACCELERATION -

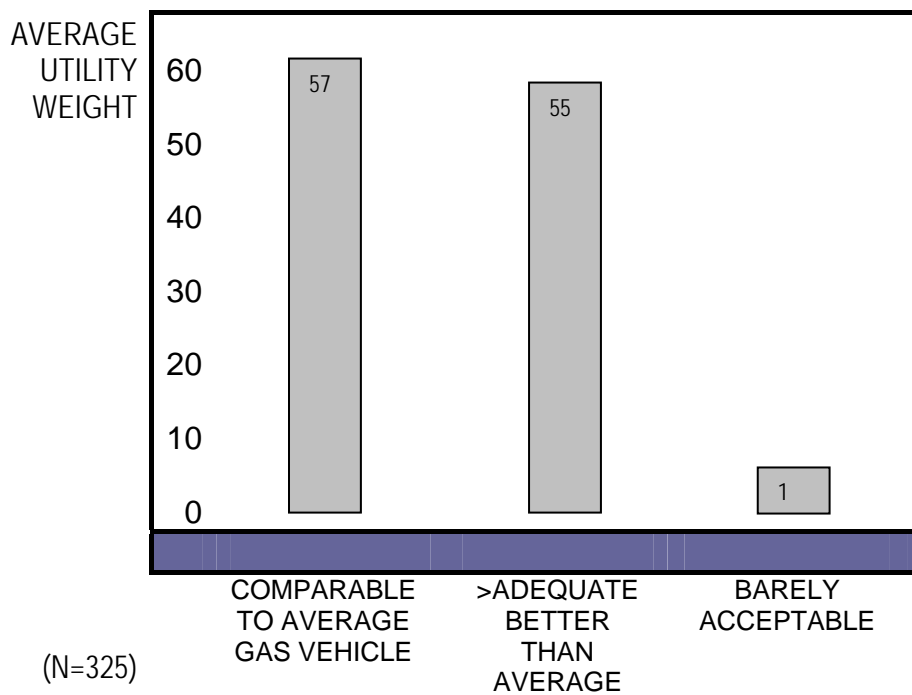


Figure 4
ATTRIBUTE IMPORTANCE
- AIR BAG/ANTI-LOCK BRAKES -

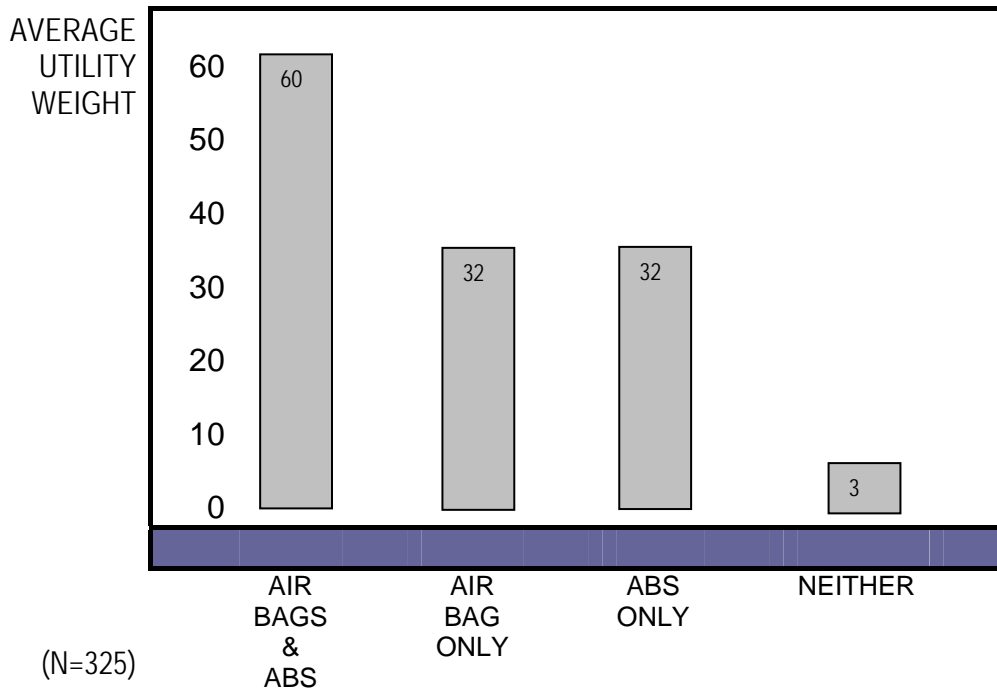


Figure 5
ATTRIBUTE IMPORTANCE
- AIR CONDITIONING -

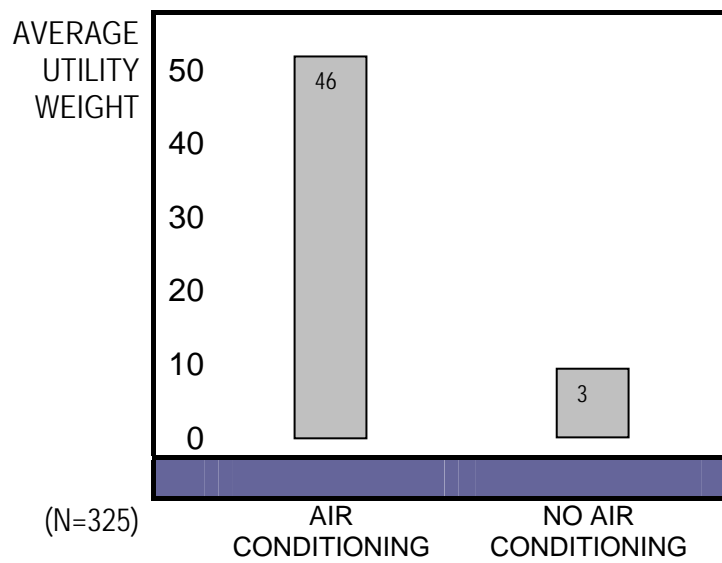


Figure 6
ATTRIBUTE IMPORTANCE
- BATTERY RANGE -

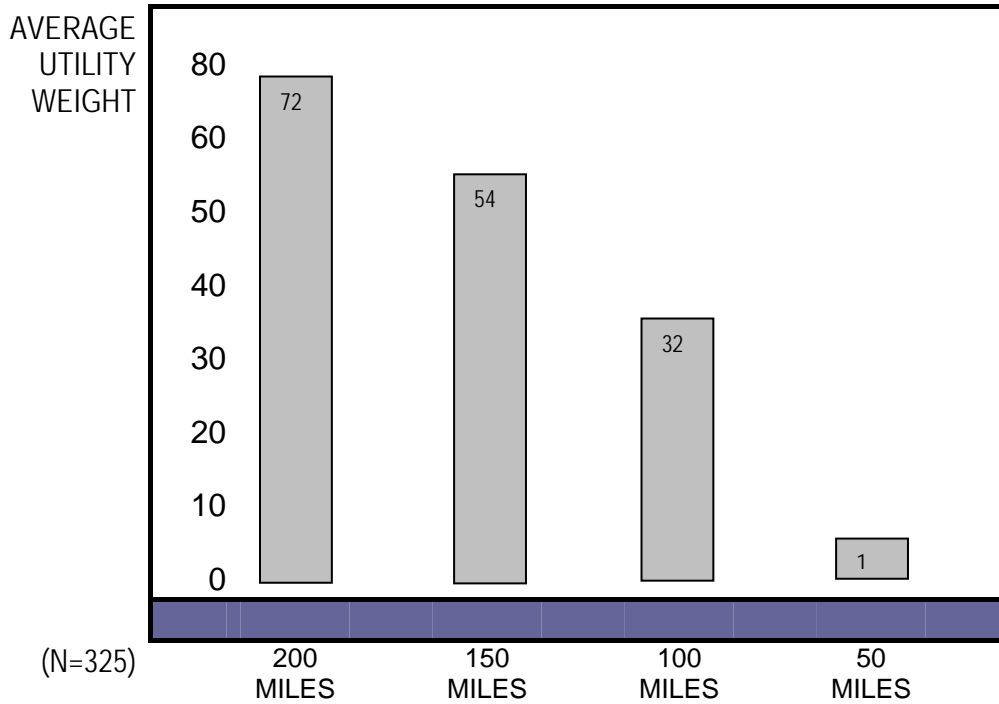


Figure 7
ATTRIBUTE IMPORTANCE
- CARGO SPACE -

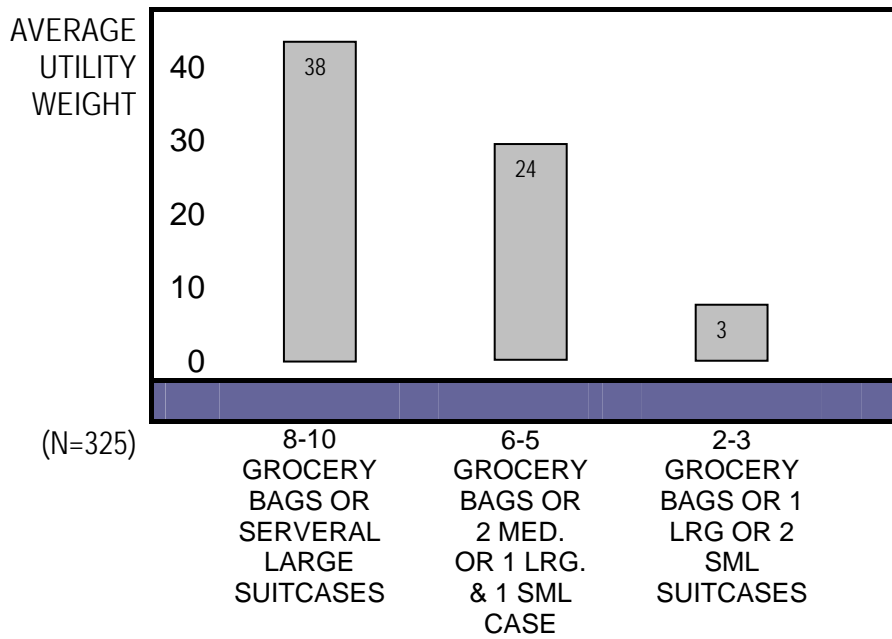


Figure 8
ATTRIBUTE IMPORTANCE
- TOP CRUISING SPEED -

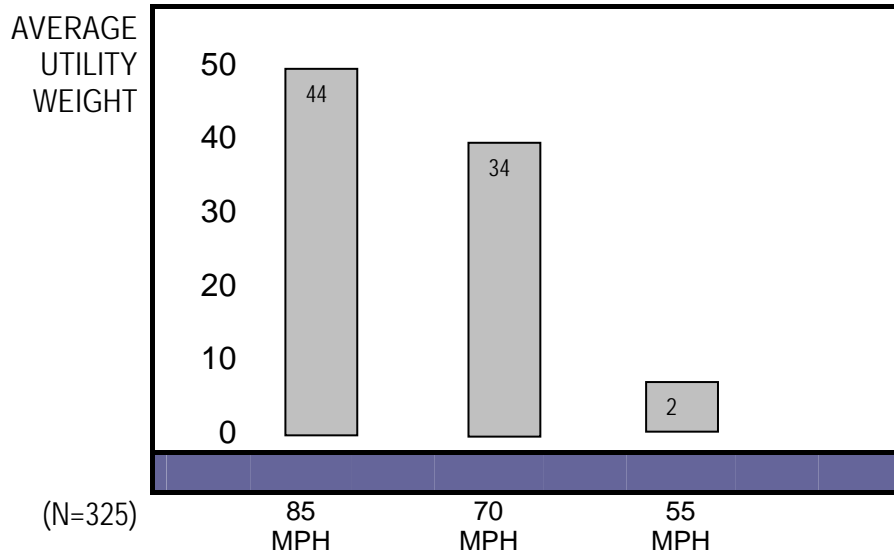


Figure 9
ATTRIBUTE IMPORTANCE
- ELECTRIC PACKAGE -

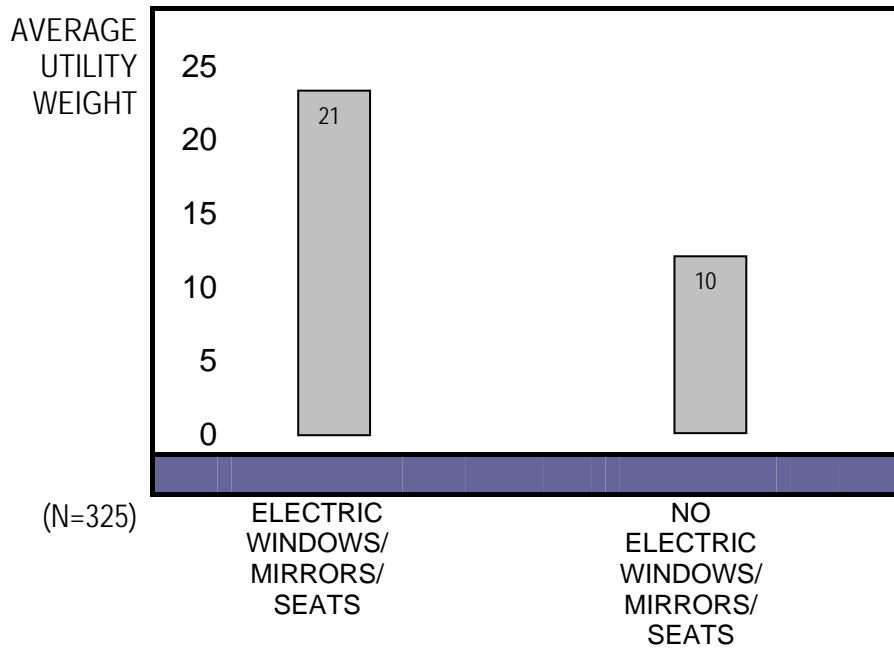


Figure 10
ATTRIBUTE IMPORTANCE
- ELECTRIC PACKAGE -

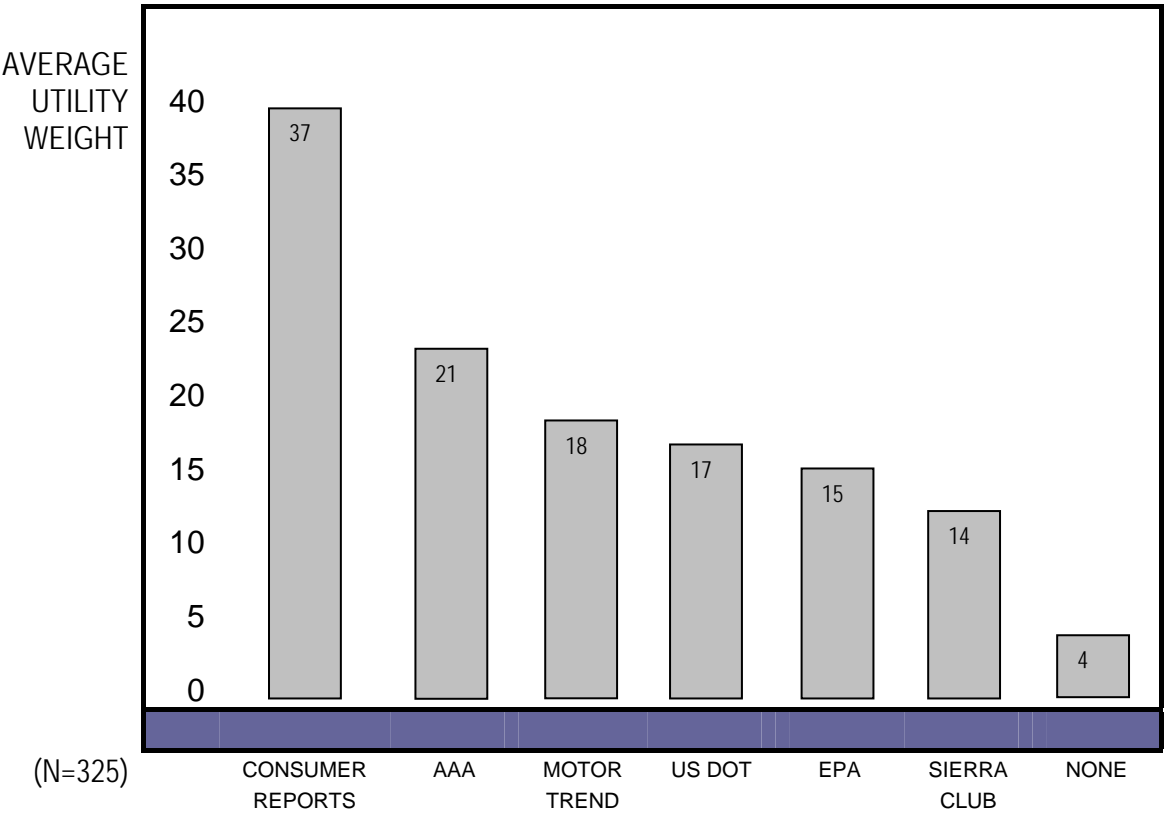


Figure 11
ATTRIBUTE IMPORTANCE
- ENERGY SOURCE -

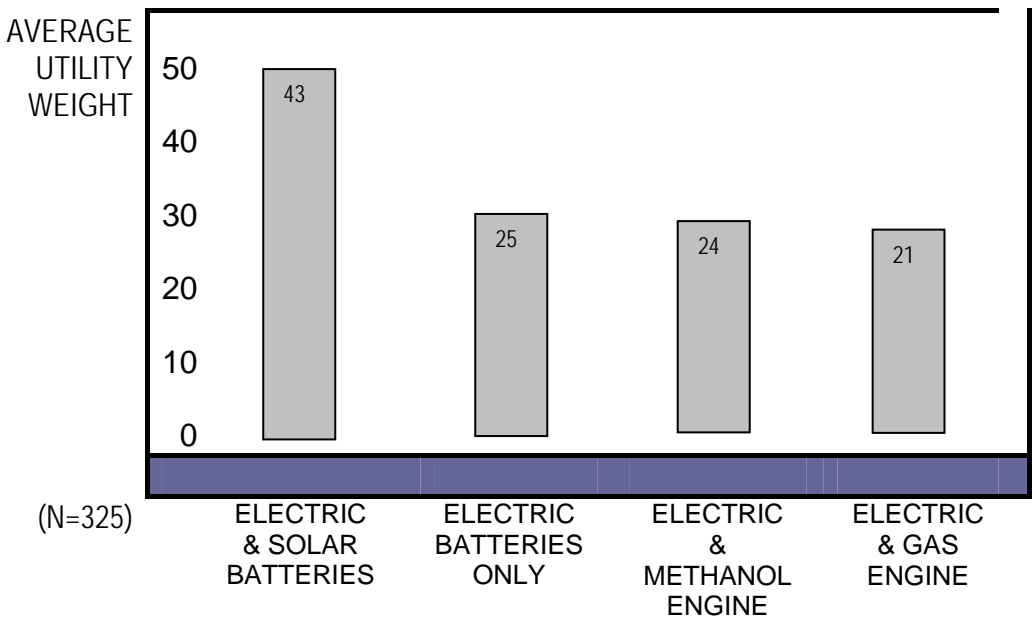


Figure 12
ATTRIBUTE IMPORTANCE
- INTERIOR -

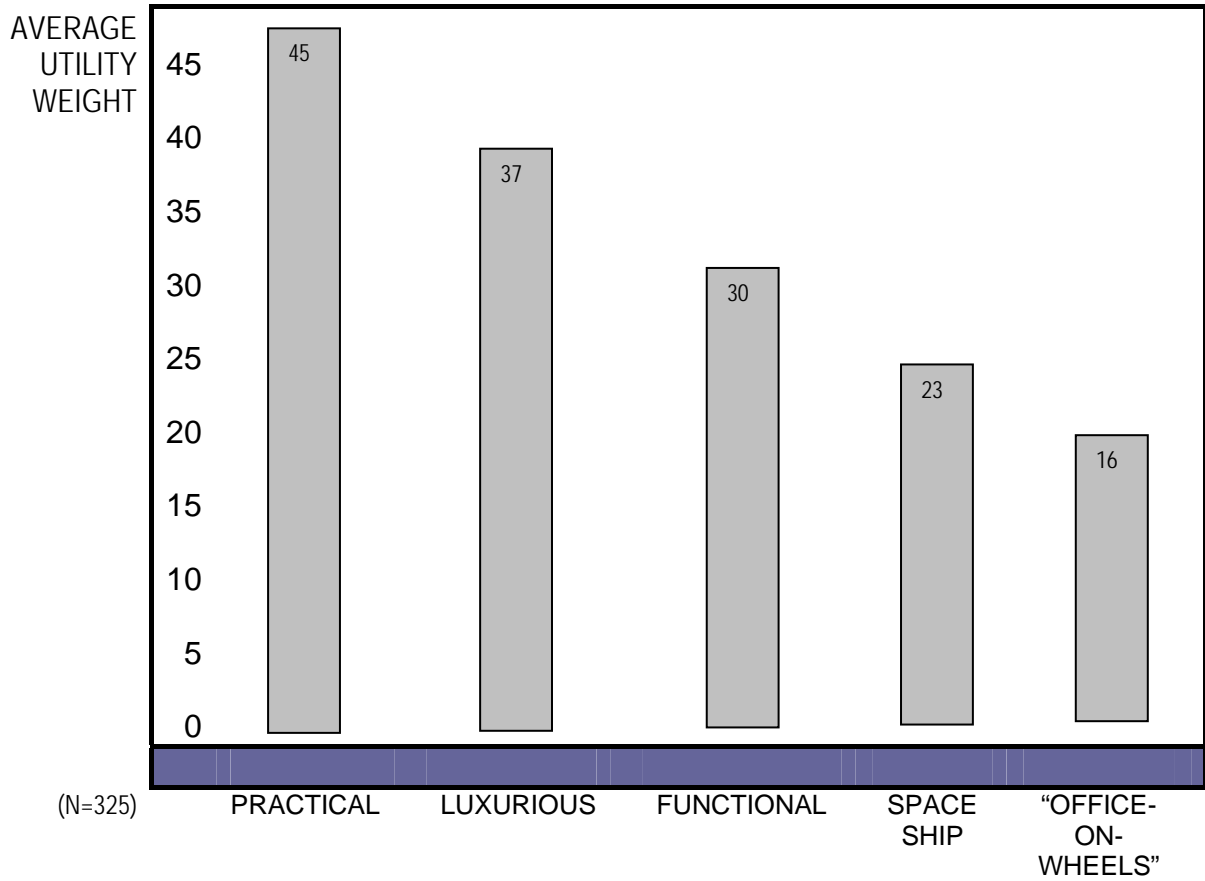


Figure 13
ATTRIBUTE IMPORTANCE
- TAX REBATE INCENTIVE -

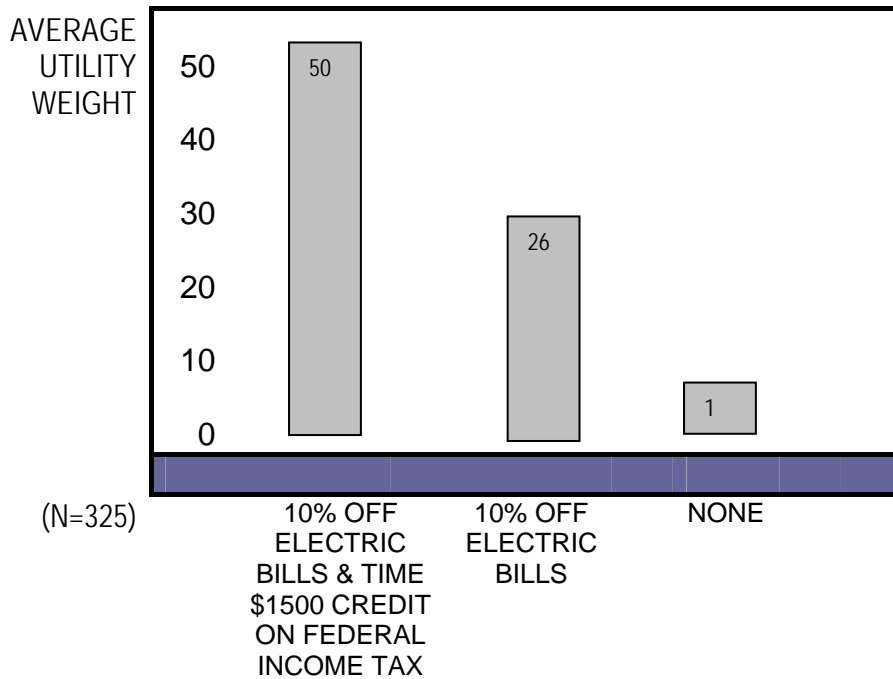


Figure 14
ATTRIBUTE IMPORTANCE
- OPERATING COSTS OVER 5 YEARS -

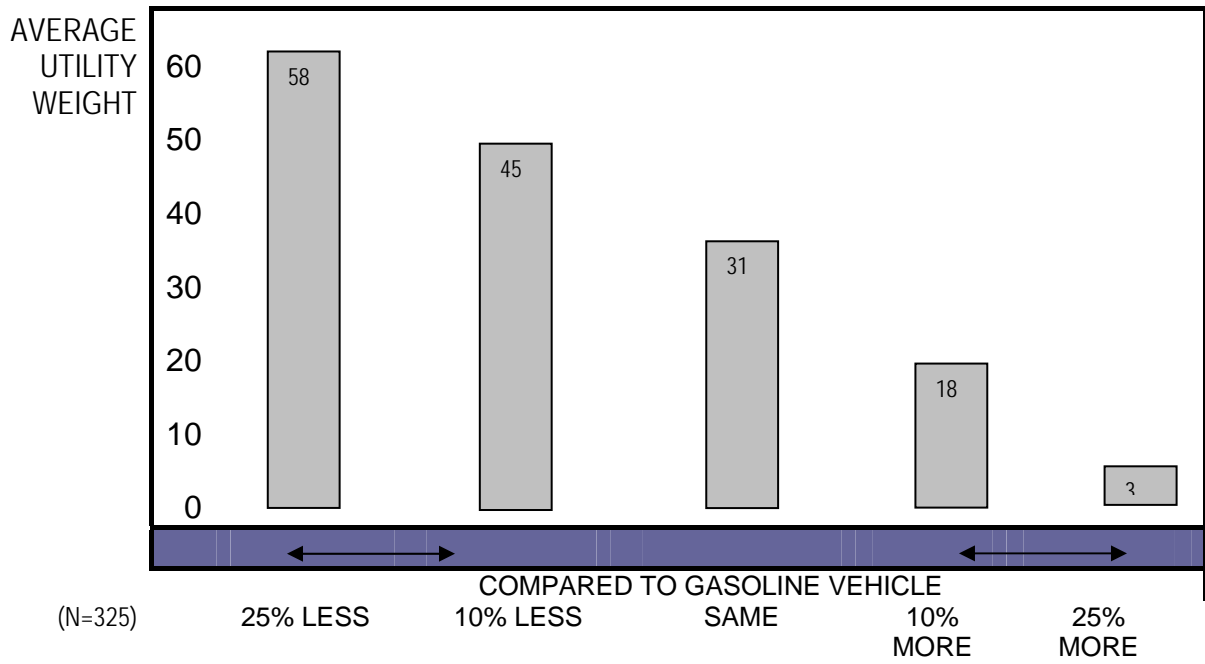


Figure 15
ATTRIBUTE IMPORTANCE
- PURCHASE PRICE -

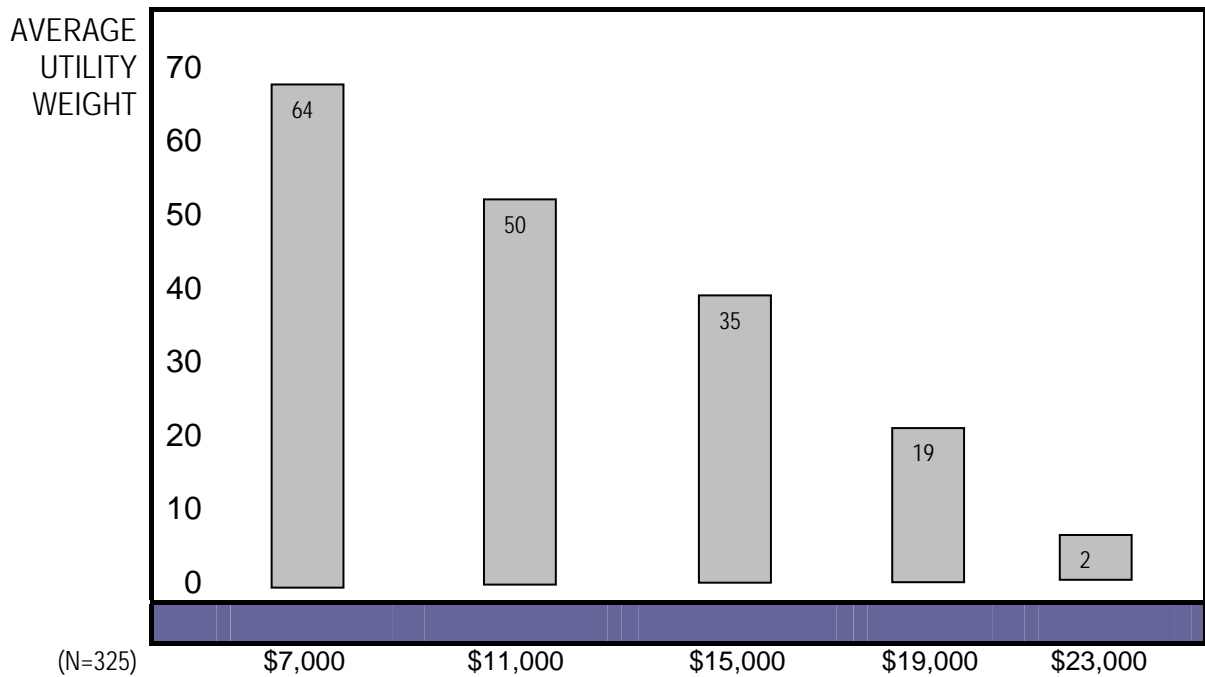


Figure 16
ATTRIBUTE IMPORTANCE
- BATTERY RECHARGE TIME -

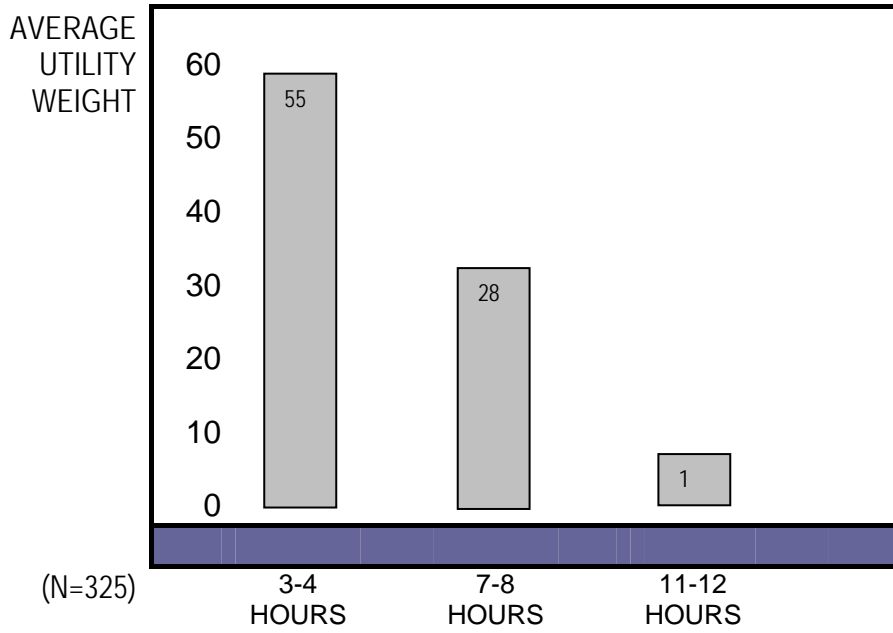


Figure 17
ATTRIBUTE IMPORTANCE
- SAFETY SPECS -

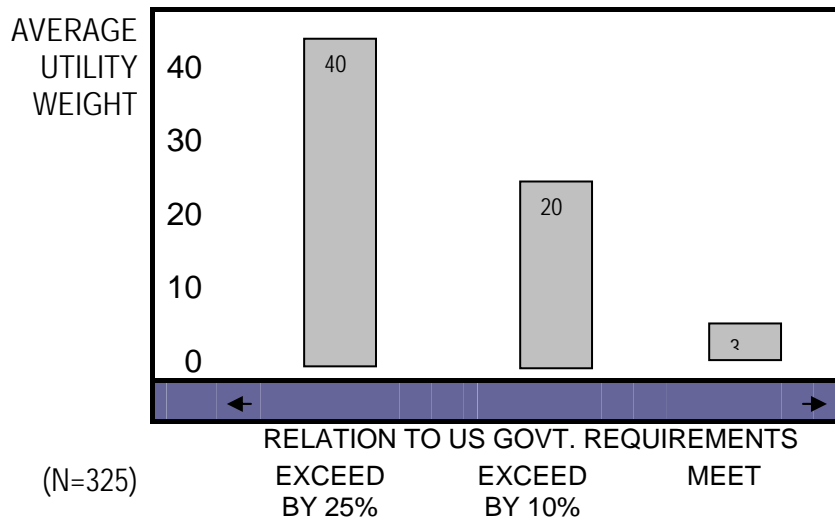


Figure 18
ATTRIBUTE IMPORTANCE
- SEATING CAPACITY -

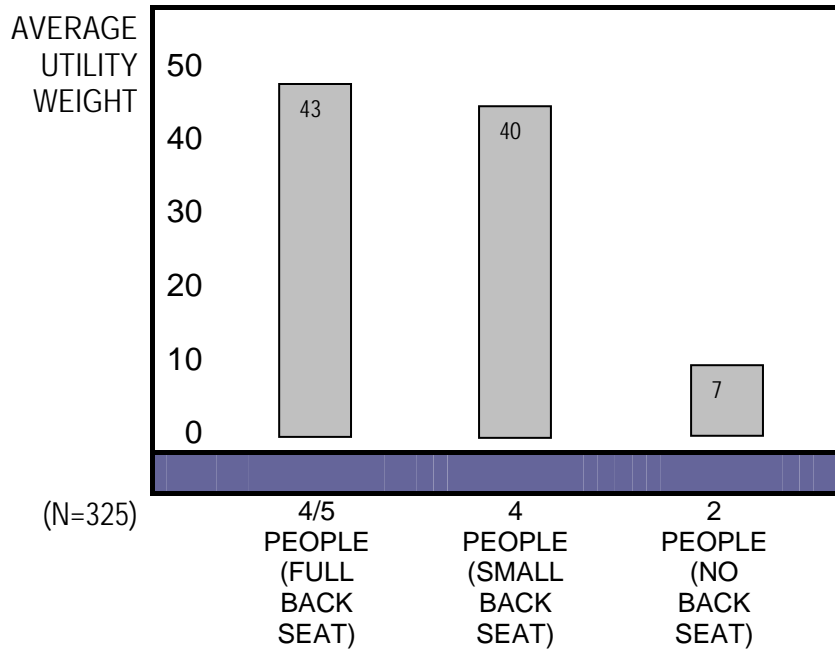


Figure 19
ATTRIBUTE IMPORTANCE
- STYLING -

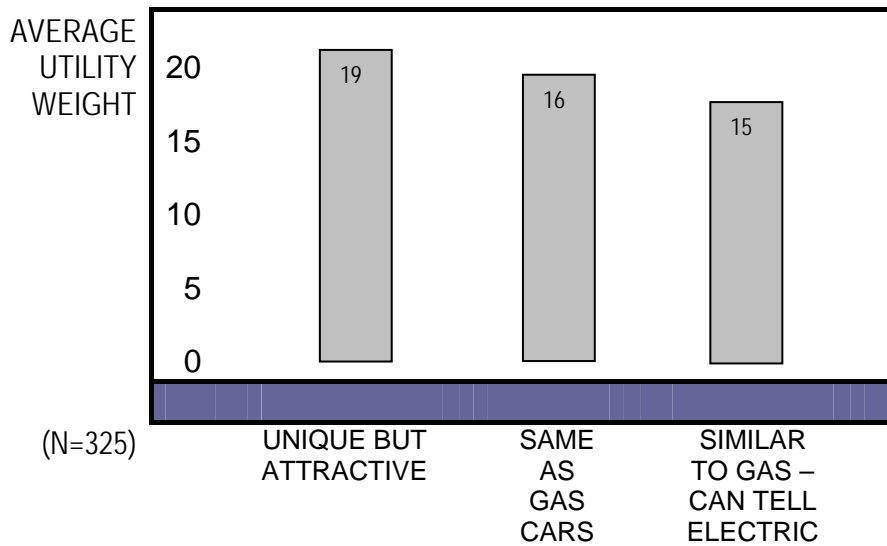


Figure 20
ATTRIBUTE IMPORTANCE
- REDUCES TOXIC EMISSIONS -

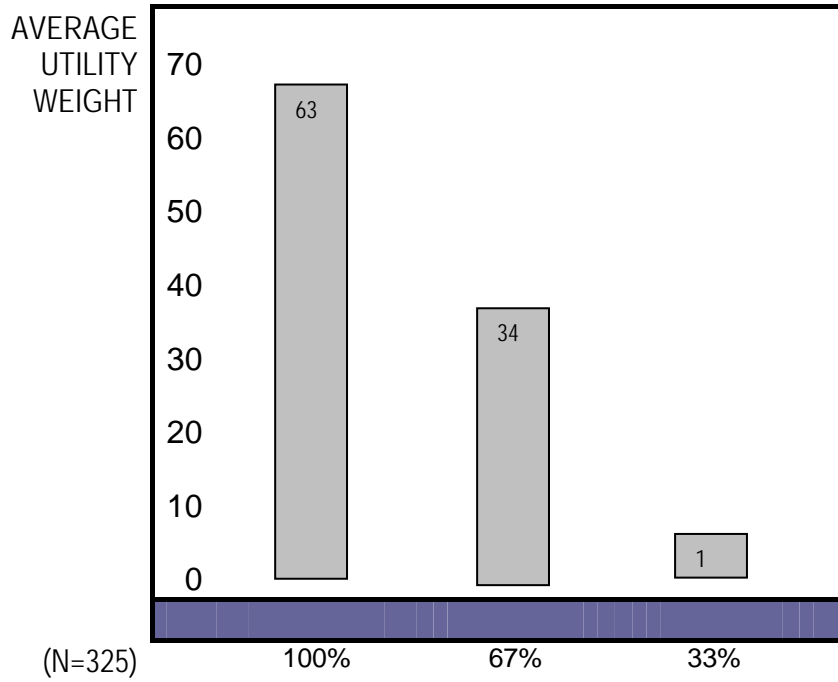


Figure 21

Group 1. Comfort and Space Orientation:

This group places an excessive significance on getting high-end conventional (ICE) features....

- Seating Capacity
- Air Conditioning
- Cargo Space
- Battery Range
- Interior Design

Group 2. Speed, Time and Low Cost Orientation:

This group places special relevance to fast performance and low cost issues.....

- Acceleration
- Top Cruising Speed
- Low Operating Costs
- Fastest Recharge Time
- Lowest Purchase Prices

Group 3. Pollution Controls and Safety Orientation:

This group places extraordinary emphasis on pollution and safety factors....

- 100% Reduction in Emissions
- Fuel Versatility/(Electric and Solar)
- Safety Specifications >Government Endorsements
- Safety Features

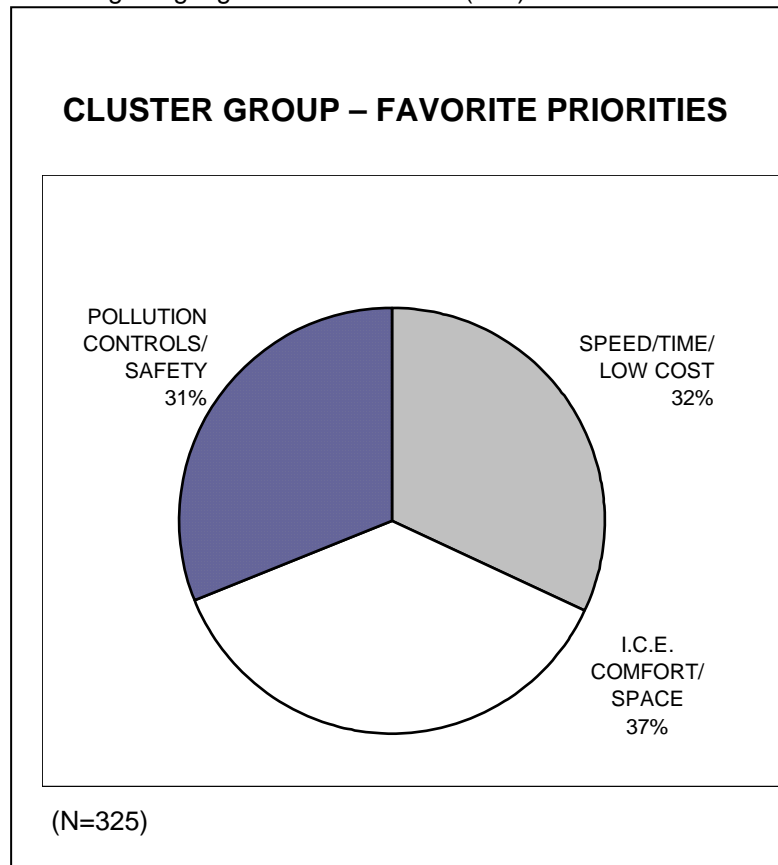


Figure 22

	CLUSTER GROUP PROFILES			
	TOTAL (325)	I.C.E. COMFORT/ SPACE (121)	SPEED/ TIME LOW COST (103)	POLLUTION CONTROLS/ SAFETY (101)
	%	%	%	%
NORTHERN CA	52	60	45	50
SOUTHERN CA	48	40	45	50
MALES	47	41	61	42
FEMALES	53	59	39	58
AGE (AVERAGE)	41.5 YRS	39.4 YRS	43.9 YRS	41.6 YRS
MARRIED	64	80	52	57
SINGLE FAMILY HOME	64	73	54	64
INCOME (AVERAGE)	\$70,800	\$70,300	\$66,400	\$76,000
POST GRAD SCHOOL	34	35	35	31
# VEHICLES OWNED (AVERAGE)	2.6	2.5	2.5	2.7
# MILES PRIMARY	16,300	16,700	16,600	15,400
# MILES SECONDARY	10,600	11,000	9,700	14,000
AUTO CLUB MEMBER	71	74	66	73
CONTRIBUTED VERY SIGNIFICANT TIME &/OR MONEY TO ECOLOGY	54	53	47	62

Figure 23

ATTRIBUTES	BASE CASE DEFINITIONS			
	SMALL & SPARTAN	SMALL & COMFORTABLE	MID-SIZED	
			LOW END	HIGH END
SEATING CAPACITY	2 (No Back Seat)	4 (Small Back Seat)	4/5 (Full Back Seat)	4/5 (Full Back Seat)
STYLING	Same as ICE	Similar to ICE	Same as ICE	Similar to ICE
TOP CRUISING SPEED	55 MPH	70 MPH	70 MPH	85 MPH
BATTERY RANGE	100 Miles	150 Miles	150 Miles	200 Miles
PURCHASE PRICE	\$7,000	\$11,000	\$17,000	\$21,000
OPERATING COSTS (Over 5 yrs)	25% Less than ICE	10% Less than ICE	10% Less than ICE	10% Less than ICE
INTERIOR	Functional	Luxurious	Practical	Luxurious
CARGO SPACE	2-3 Grocery bags or 1 large or 2 small suitcases	5-6 Grocery bags or 2 medium or 1 large & 1 small suitcase	5-10 Grocery bags or 2 medium or 1 large & 1 small suitcase or several large suitcases	8-10 Grocery bags or several large suitcases
ELECTRIC PACKAGE	No	Yes	No	Yes
AIR CONDITIONING	No	Yes	No	Yes
TAX INCENTIVES/REBATES	No	No	No	No
AIR BAGS & ABS	No	No	No	Both
REDUCED EMISSIONS	Reduces by 100%	Reduces by 100%	Reduces by 100%	Reduces by 100%
POWER SOURCE(S)	Electric batteries only	Electric batteries only	Electric batteries only	Electric batteries only
RECHARGE TIME	7-8 Hours	7-8 Hours	7-8 Hours	7-8 Hours
ACCELERATION	Barely acceptable	Comparable to average ICE	Comparable to average ICE	Exceed US Gov't requirements by 10%
SAFETY SPECS	Meet US Gov't requirements	Exceed US Gov't requirements by 10%	Meet US Gov't requirements	Exceed US Gov't requirements by 10%
ENDORSEMENTS	DOT	DOT	DOT	Consumer Reports

Figure 24
- **BASE CASE SIMULATION -**
- **(4 PRODUCT SCENARIO)**

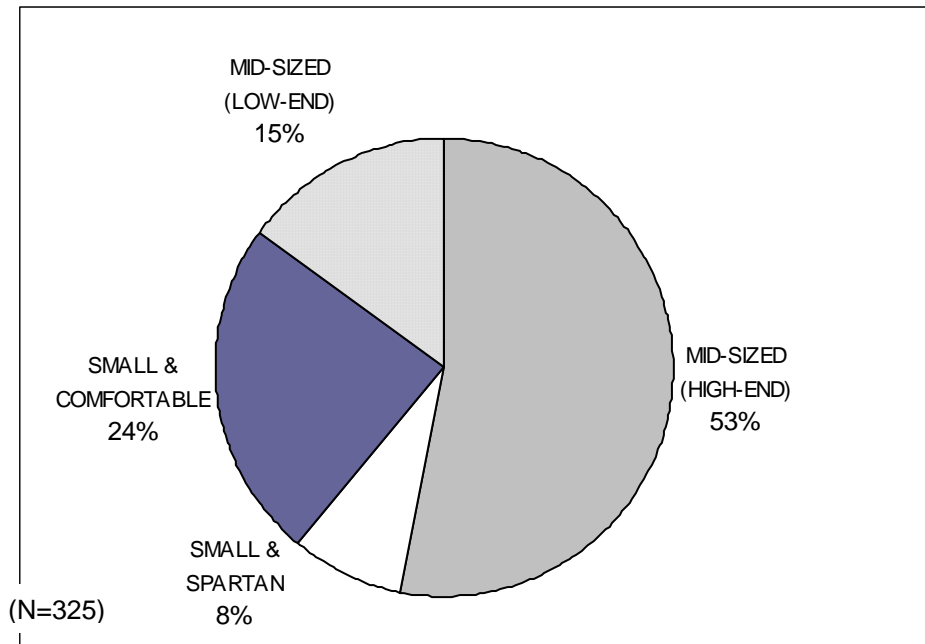


Figure 25
- **LOW-END SIMULATION -**
- **(3 PRODUCT SCENARIO)**

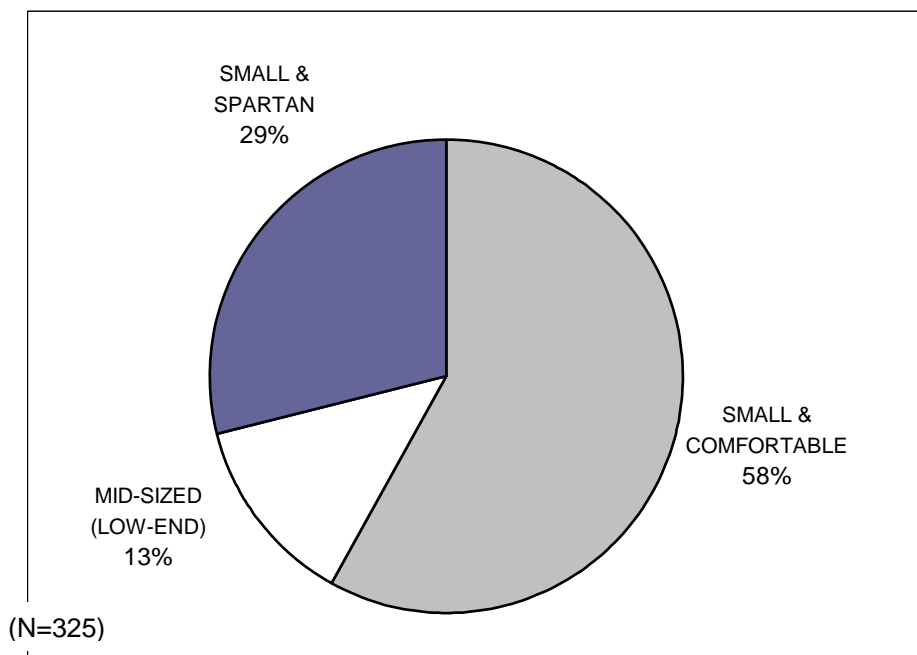


Figure 26
- HIGH-END SIMULATION -
(3 PRODUCT SCENARIO)

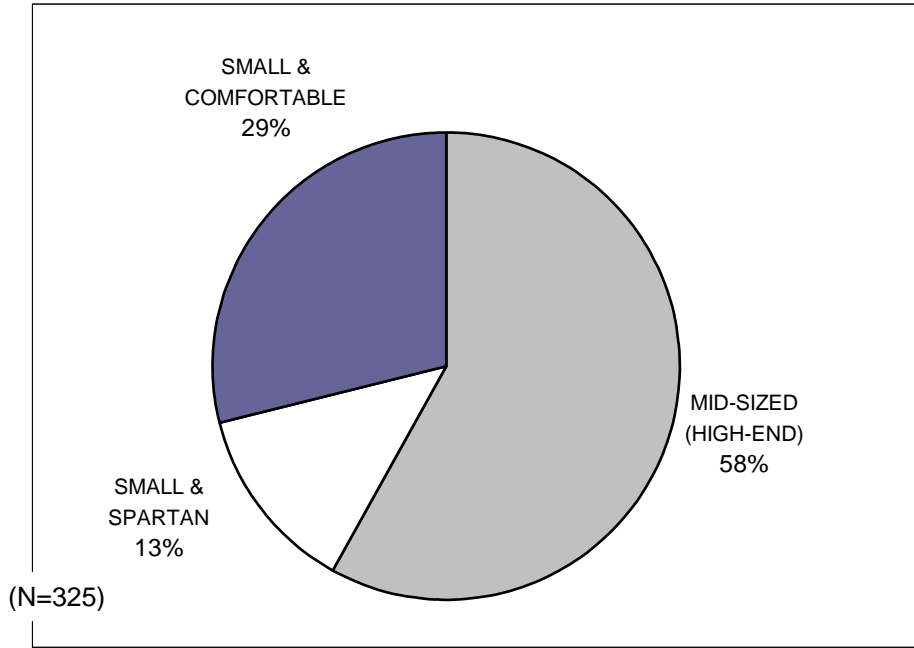


Figure 27
- WHAT IF? SIMULATIONS -

