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| East Carolina University |
| Advanced Automobile Concepts |
| Case Project |
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| **4/16/2012** |

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# Unit 1

## Case 1.2

### Brief Summary Of ZEN Motors

Nick Thomas is the CEO of Advanced Automobile Concepts, which is a new division of Zen Motors. Zen has been losing market share to other competitors so ACC was created to revive the aging ZEN automobile brands. They will accomplish this by either fixing their older models or inventing new ones that compete with the models in today’s market.

He believes that their most significant losses are due to foreign brands increasing in popularity in the market place. Nick looked at the company’s sales data from the last ten years and accessed the trade industry articles and noticed that smaller fuel efficient cars are well liked. Zen’s large luxury car has a lot of foreign competition which is detrimental considering they make the most profit from their larger vehicles. They have been reluctant to spend more money on developing new designs because they have done well in the past with their current models.

Due to the current economy, fuel prices have risen causing their sales to plummet. Nick is considered about this and the increasing global warming because it could affect consumer behavior towards their automobiles.

### Types of Marketing Research

1. Identifying Market Opportunities and Problems

-Competitive Analysis

-Environmental Analysis Study

-Product/Service Usage

-Market Demand Determination

1. Generating, Refining, and Evaluating Potential Marketing Actions

-Reformulating Existing Product Testing

-Pricing Tests

-Advertising Pretesting

-New Product Prototype Testing

-Concept Tests of Proposed New Products or Services

1. Monitoring Marketing Performance

-Tracking Studies

-Image Analysis

-Customer Satisfaction Studies

1. Improving Marketing as a Process

-How can ZEN motors use their customers to help them create innovative new products and services?

-How can their advertising better promote their brand?

-How can marketers better access customer satisfaction?

## Case 2.1

### Question 2

Descriptive Research.

-“Describes such things as consumers’ attitudes, intentions, and behaviors or the number of competitors and their strategies. Although most descriptive studies are done through surveys in which respondents are asked questions, sometimes descriptive studies are observational.” –pg. 31

-We feel that the studies presented in this case can be summarized as being a part of Descriptive Research because they talk about how much money the typical consumer has versus the hybrid consumer. They also talk about hybrid consumers’ age in reference to the average consumer, their hobbies, educational levels, political preferences and attitudes.

# Unit 2

## Case 6.2

### Question 1

We can research external secondary data to find out which fuel-efficient cars are the most popular and the different alternate fuel choices. We would use published sources such as statistical sources. We can find these sources in libraries or even online. We would also search for data from other companies on their fuel-efficient car sales.

### Literature Review

A current study suggests that the key to mitigating the risks of climate change is by reducing vehicle emissions. More studies have and are still proving that this statement is correct. Throughout the years car manufacturers have focused on developing and perfecting internal combustion engines. The engines has been a success, however, due to greenhouse gases staying in the atmosphere it has caused some damage to the ozone layer allowing some spots to deteriorate. These deteriorating spots are detrimental to the environment and can lead to global warming. Car manufacturers have decided to focus on alternative technologies and fuel sources that are more “green” to help preserve the environment.

Throughout the years there have been many attempts at trying to find an alternative to vehicles that operate with gas. Gas gives off pollution and emissions into the air which get trapped in the atmosphere and contributes to further destroying the ozone layer. There are a few types of vehicles that have entered the market that can help to reduce additional damage to the environment while still producing a moderate to high mpg. Two types of fuel efficient cars are the hybrid and the electric cars. A hybrid is any vehicle that combines two or more sources of power that can directly or indirectly provide propulsion power. Most hybrids are gas-electric vehicles and an example of this is a moped, which combine a bike and an engine. The electric car is propelled by an electric motor or fuel cell (Berggren, Christian, and Thomas Magnusson).

According to one study, the Obama administration has been trying use incentives and tax credit to the people who buy electric hybrid vehicles. This plan is a part of a goal set to see a future that is more “green”. Section 1131 of the American Recovery and Reinvestment Act of 2009 will give those who purchase the specified “green” vehicles a tax credit between $2,500 and $7,500 depending on their battery life. An example of a fuel-free and rechargeable car from Ford is the Focus (Electric Shock; Pushing a Green Car Agenda). However, compared to purchasing gasoline, the price of the electric vehicles has its drawbacks. The grid that powers the battery for these cars are produced by “gas-fired and coal burning power plants, as well as nuclear reactors” (SAE International).

GM’s vice president of sales, Don Johnson reported “Rising fuel prices have led many to re-think their vehicle choice.” In May of 2011, GM sales were up 27% from last year despite the high gas prices. Not only were sales up, the demand for fuel-efficient cars and crossovers were at an all time high. Hyundai, Kia, Toyota, Nissan and Honda companies were also benefitting from fuel-efficient cars. Hyundai sales in April 2011 were up 40% from the previous year which was the second best month in the automaker’s history. Senior analyst at Edmunds.com, Jessica Caldwell stated that Hyundai was “dangerously close” to selling more cars than Nissan which had a 12% increase in sales from the previous year. (Rooney)

“The change in consumer preference for smaller vehicles will be in place as long as gas prices stay or go above where they are now. It is unlikely that we’ll see a change in this pattern unless gas prices go down dramatically (Rooney).” U.S. automakers have been trying to make smaller cars to compete with Japanese automakers since they lead the market for fuel efficient cars. For example, Ford’s sales rose 16% in April due to the sales of the Fiesta, Focus and Fusion. (Rooney)

To promote alternative fuels, the Federal government has started offering tax incentives to consumers purchasing qualifying alternative fuel vehicles. “These alternative fuels often produce less pollution than gas or diesel (Alternative).” Some alternative fuels are ethanol, biodiesel, natural gas, propane, hydrogen. Ethanol is produced from corn and other crops and produces less greenhouse gases than some other fuels (Alternative). Biodiesel comes from vegetable oils and animal fats. It is known to produce less air pollutants than petroleum-based diesel (Alternative). Natural gas and propane are fossil fuels that also produce less air pollutants and greenhouse gases (Alternative). Hydrogen can be produced from fossil fuels, nuclear power, or renewable resources. Vehicles that run off of hydrogen emit no harmful air pollutants into the air (Alternative).

# Unit 3

## Case 4.2

### Questions

1. There are multiple sources that contribute to Nick Thomas’ problem. The first one is the fact that consumers want to buy fuel-efficient cars since gas prices have raised. He is debating on whether to start selling smaller cars because he thinks once the gas prices come back down, consumers will want to buy larger vehicles again. Another problem is that the market has various attitudes when it comes to global warming. Some people think the whole thing is a hoax while others think that global warming is merely a natural phenomenon of the Earth’s temperature cycles.
2. Nick Thomas has a few problems he is currently facing. The first one is the consumers’ demand for the different basic models. Everyone wants “good” gas mileage but some cars provide better gas mileage than others. There are mainly four different types of cars: very small, small, medium, and large. The decision he has to make is which cars he thinks has the greatest demand. He needs to decide whether to make the larger cars for bigger families or whether to make the smaller fuel-efficient cars for the people concerned with gas prices and global warming. The fuel-efficient cars sound great but there are a few drawbacks to owning one including limited space, speed limitations, poor infrastructure and plug restrictions. That brings me to his next problem which is identifying the market segments. Nick needs to know the approximate age, gender, income level, marital status and type of cars owned/leased of the people who are in the market to buy his cars. There is a lot of competition when it comes to fuel-efficient cars and it is hard for the different companies to make a profit. The Douglas Report suggests that ZEN Motors should make hybrid cars that are both electric and engine powered in order to stand a chance when competing with the other companies. The last problem is marketing efficiency. The new start-up companies are going to be producing energy-saving vehicles which are generally priced lower and have lower profit margins. In order to compete with them, ZEN Motors would have to price their vehicles low. When it comes to promotional materials, Nick needs to make sure he advertises to the correct market so that the company doesn’t waste money on people who are not in the market to buy their cars. This is a hard task because he is still torn on whether consumers are going to want larger vehicles once gas prices come back down.
3. The research objective for Nick’s first problem of choosing which car models are in demand is to research the different features of each car and pick out which ones are most popular. By doing this he will be able to create a car that will be in high demand. His research objective for identifying the market segments is to research the age, gender, education level, income level, etc. of those who are interested in the cars he is promoting. By doing this, he can determine the size, growth trend, and the profit potential for the market segments. The research objective for determining the marketing efficiency is to research other companies with similar cars to see what features and options that are offering to better compete with them. Nick needs to also consider what his target audience is in order to promote to the correct market segment.

## Case 5.2

### Questions

1. To help Nick find the answers to his first set of issues, we would suggest using an exploratory design because exploratory research is used to gain background information and to clarify problems and hypotheses. In order to find out how consumers really feel and what is most important, you would need to either hand out surveys, use focus groups, or use projective techniques.
2. Nick should use the causal research design because it answers the question of “if x then y.” Nick is trying to find out if global warming causes the sales of fuel-efficient cars to rise and that’s basically saying that one causes the other to happen.
3. For Nick’s third set of issues, he is trying to figure out how much of an increase in mpg will it take for customers to buy the ZEN cars over their competitors. Descriptive research is the best choice for this particular situation because it answers the questions of who, what, where, when, and how. Nick is trying to find out how many mpg customers prefer to make a purchase.

### Planning Document

**Research Question to be Answered:**   
What type of car do ZEN Motors’ customers prefer and if the people who prefer the smaller models have different values from the typical ZEN Motors customer.

**Participant Profile:**   
We would ask for volunteers to participate in the focus group. People who come to other dealerships to buy fuel-efficient or small cars would be the type of people that we would be looking for.

**Recruitment Protocol**:   
We would go to a few different car dealerships and ask for records of people who had recently purchased smaller, fuel-efficient cars. If they let us have that information then we would contact them and ask for volunteers. If the dealerships want to keep that information private then we would ask if we could hang around the dealership and ask people ourselves if they want to participate. We could also contact current ZEN Motors customers who have bought our smallest vehicle. Participants can be recruited with flyers placed around the neighborhoods that are within 30 miles of the company and we would place the flyer in newspaper ads as well. Another thing we could do is put information about the focus group on the Zen Motors website so that people could sign up if they were interested.



**Sample Flyer**

Once a group of viable recruits has been established, would we call each one to confirm interest and availability. Give them times and locations of the focus groups and secure verbal confirmation. We will tell them that we will mail (or email) them a written confirmation and call to remind them two days before the scheduled group.



**Screening Questions:**  
1. Do you own a ZEN Motors vehicle? If not, would you consider buying a ZEN Motors vehicle?  
2. Are you in the market to buy a new vehicle within the next five years?  
3. Are you interested in buying a smaller, fuel-efficient vehicle?

**Logistics:**   
The location of our focus group would take place in a public place in a conference room. I feel like a conference room is a good location because everyone can see all of the other participants and it makes open discussion easier. A good place would be in a church, library, office building, or school near the ZEN Motors headquarters. If there is a nice conference room at the headquarters, then that would be a good place too.   
  
We want to have around 36 people for the focus group. We would split them up into four groups of 9. We would talk to the groups individually and see how they respond. We would then bring them together and see if the opinion changes once they are in front of a bigger crowd.

We would devise a form to track invitation phone calls. Include an “Address” box for mailing the confirmation letter and a “Comments” box. For example:



We would also offer to pay the participants a honorarium of $25 for their participation. We would offer refreshments while the focus group was in session.

Some of the ways that we could reduce barriers for attending are by offering:

* Evening or weekend groups for those who work during the day
* Child care services
* Interpreter services
* A familiar public setting

We would arrange for a comfortable room in a convenient location with ample parking. The room would have a door for privacy and table and chairs to seat a circle of up to 8 people (6 participants and the moderator and assistant moderator).

We would tell the participants that the focus group will take about one and half to two hours. Give them a starting time that is 15 minutes prior to the actual start of the focus group to settle in to the group. Before the group session would start, all the participants would be required to complete a consent form.



We would arrange for food before the questioning. We would offer at a minimum, a beverage and light snack (cookies, cheese/crackers, veggie tray, etc.).

Then once consent forms and demographic surveys are collected and reviewed for completeness, the questioning would begin. The moderator would use a prepared script to welcome participants, and remind them of the purpose of the group and also set ground rules.

**Moderator’s Guide:**

The focus group would be conducted by a team consisting of a moderator and assistant moderator. The moderator will facilitate the discussion and the assistant will take notes and run the tape recorder (Before the meeting actually starts).

(Opening)

Good afternoon. How is everyone doing?

(Wait for answer)

Glad to hear it/Sorry to hear that.

What I want to do first is get to know everyone a little better.

Let’s go around the room and if you wouldn’t mind, state your name and what your occupation is.

I’ll start.

My name is Ashley Roberts and I work in the advertising department for ZEN Motors.  
  
(Wait for everyone to answer)

Now that we all are more familiar with each other, let’s get started.

Can I see by a show of hands who all has heard of ZEN Motors.

(Talley up the number of responses)

How many of you own a ZEN Motors vehicle?

(Talley up the number of responses)

How many of you own a small, fuel-efficient car?

(Talley up the number of responses)

For those of you who don’t own a fuel-efficient car, would you consider buying one?

(Talley up the number of responses)

For those of you who do own a fuel-efficient car, what is the most important thing that you look for when buying a car?

(Wait for the responses)

For those of you who do not own a fuel-efficient car, what is the most important thing that you look for when buying a car?

(Wait for responses)

Do you believe in global warming?

(Talley up the responses)

For those of you who do believe in global warming, do you think fuel-efficient cars impact global warming?

(Talley up the responses)

Do you think that Americans need to look for alternative fuels for our vehicles?

(Talley up the responses)

I want to show you this short video.  
(The video will talk about global warming and how it is affecting our daily lives. There will be basic facts in it to inform the participants who don’t know about global warming. It will have testimonials from people who do believe in global warming in it. It will then show what our new fuel-efficient cars will look like. It will also have a list of all of the features that the new cars will have.)

What did you think of the video?

(Wait for responses)

Have your thoughts about global warming changed after watching this video?

(Wait for responses)

Would you consider buying a ZEN Motors fuel-efficient car after seeing this video?

(Wait for responses)

Is there anything else you would like to say?

(Wait for responses)

Are there any questions?

(Wait for responses)

This concludes the focus group questioning. Thank you for coming out today. We appreciate your participation. Please feel free to stick around and ask any of the staff members any questions. If you are interested in learning more about our new cars, there are brochures at the receptionist’s desk. We can also email or mail you any additional information.

# Unit 4

## Case 9.3

### Questions

1. One advantage of mail surveys are that there is no interviewers to recruit, train, monitor, and compensate. Another advantage is that mailing lists are easily accessible and mailing surveys are inexpensive. A disadvantage of using mailing surveys is that they suffer from slow responses from their participants resulting in a 20% lack of unresponsiveness. One special consideration is that if there are not a lot of surveys returned it is not a good representation of America.
2. There are a few advantages to using telephone interviews. One advantage is long-distance charges are cheaper than face-to-face interviews. Another advantage is that it has high quality results. A third advantage is that there are quick turn-around times. The anonymity makes it more likely to have valid responses. However, there are several disadvantages to combat the advantages. One disadvantage is that you cannot observe the respondent. Another disadvantage is that if the respondents are impatient then they will be less likely to answer or hang up. A special consideration is that since you cannot read the respondents’ body language, you do not know if they are giving valid answers.
3. A drop-off survey is not likely to achieve the overriding objective because you want to know how people feel about the topics and they might not go into enough detail if they are quickly filling it out. Also, if there are things that they don’t feel comfortable talking about they might just leave that section blank. It would also be inconvenient to try to get in touch with people if you had questions about their answers.  
   A group self-administered survey would not be appropriate for this kind of objective because once again you want to know people’s true feelings about global warming and it is hard to get that information when talking to a group as a whole. Also people are sometimes discouraged to ask questions if they don’t understand something because they are either embarrassed or not comfortable talking in front of everyone.  
   A mall-intercept survey is not the right survey to use to achieve this overriding objective because the respondents are going to be from the same area and that is not a good representation of America. Also some people won’t want to take the time to stop and answer the questions because they are either pressed for time or they don’t want all of the other shoppers staring at them as they pass by.
4. For the Advanced Automobile Concepts survey, they are trying to find out how consumers feel about global warming, hybrid cars, gasoline prices, etc. They are trying to pick between an in-home survey method and an online survey method. An in-home survey is when an interviewer goes door to door to conduct interviews. Some advantages are that the interviewer can see the respondents’ body language, respondents sometimes feel more comfortable answering the questions because they are in their own home, and in this case the interviewer can actually see what car the respondent drives. Some disadvantages are that it takes longer, interviewers have to travel a lot, and the cost per interview is high. An online survey is when the respondents read the survey on the computer and then answer the questions online. Some advantages of this method are that they are fast, easy, inexpensive, and they have the ability to show pictures and diagrams. A disadvantage is that online surveys have low cooperation rates. I would recommend the in-home survey method for this particular case because I think it is important to be able to read people’s body language and I also think people will be more honest with their responses.

## Case 10.3

### Nominal, Ordinal, Interval, or Ratio

1. What is the size of the vehicle you drive now?   
\_\_\_Economy (Chevy Aveo) \_\_\_Compact (Toyota Yaris) \_\_\_Intermediate (Toyota Corolla)   
\_\_\_Standard (Ford Fussion) \_\_\_Full Size (Dodge Charger) \_\_\_Premium (Toyota Avalon)  
\_\_\_ Luxury (Lincoln Towncar) \_\_\_Minivan \_\_\_Intermediate SUV (Ford Escape)  
 \_\_\_Standard SUV (Jeep Cherokee) \_\_\_ Large SUV (Chevy Tahoe) \_\_\_Truck (Dodge Dakota)  
\_\_\_Large Truck (Chevy Silverado) \_\_\_Cargo Van (GM Express)

2. For the questions below please state your opinion.  
Gas prices are too expensive.  
Strongly Disagree Disagree Neutral Agree Strongly Agree  
0 1 2 3 4 5 6 7 8 9 10  
  
3. Replacing current vehicles with alternative-fuel automobiles will affect global warming.  
Strongly Disagree Disagree Neutral Agree Strongly Agree  
0 1 2 3 4 5 6 7 8 9 10

4. How likely are you to buy an alternative-fuel automobile?  
Not Likely Somewhat Likely Very Likely  
0 1 2 3 4 5 6 7 8 9 10

5. How much do you think the use of gasoline affects global warming? (Circle One)  
Not very much Somewhat A Lot  
0 1 2 3 4 5 6 7 8 9 10

6. Nominal Scale: Check all of the alternative-fuel automobiles that you would consider buying.  
\_\_\_ Mini  
\_\_\_ Economy  
\_\_\_ 2-Door  
\_\_\_ Economy 4-Door  
\_\_\_ Standard

7. For each category circle the genre, type, etc. that you prefer.  
**Television Shows**  
Drama Mini-series Sports Comedy  
**Magazine Type**  
Business Family Living Travel Fashion Cooking/Baking  
**Music Genre**  
Rock Rap Country Jazz Pop Alternative Punk  
**Newspaper Section**  
Local News Sports Editorial Comics

## Case 11.3

### Assignment Survey

Advanced Automobile Concepts

How Are We Doing?

Hello my name is Cory Rogers and I am conducting a research study for Nick Thomas of Advanced Automobile Concepts. We are conducting a survey on the Internet browsers to find out customer interest in regards to car brands and whether certain circumstances have an effect on their car choice and the car’s source of power.

We are committed to providing you with the best experience possible, so we welcome your comments. Please fill out this questionnaire. Thank you!

How convinced are you that global warming is happening? Would you say you are:

⭘ ⭘ ⭘ ⭘

Not At All Convinced Not So Convinced Mostly Convinced Completely Convinced

If you are convinced of global warming, will it affect your choice of your cars’ source of power?

⭘ ⭘

Yes No

In general, do you feel that gasoline prices are:

⭘ ⭘ ⭘ ⭘

Too Low About Right Somewhat High Much Too High

How likely do you think it is that gas prices will remain high over the next several years?

* ⭘ ⭘ ⭘ ⭘

Not Likely Less Likely Neutral Somewhat Likely Very Likely

Rank which car and its mpg ratings appeal to you more on a scale of 1 to 3, with 3 being the lowest.

\_\_\_ Very small autos (1 seat) with very high mpg ratings

\_\_\_ Small autos (2 seats) with high mpg ratings

\_\_\_ Hybrid compact –size autos with moderately high mpg ratings

Rank which fuel/energy source attracts you the most on a scale of 1 to 3, with 3 being the lowest.

\_\_\_ Synthetic fuel hybrids

\_\_\_ Electric hybrids

\_\_\_ Alternative fuel models

Which of these sources was MOST useful in providing you with relevant information about choosing new automobile types?

Reading newspaper

⭘ ⭘ ⭘

Local State National

Watching local news on TV

⭘ ⭘ ⭘ ⭘

6am 8am 6pm 10pm

Listening to FM radio

⭘ ⭘ ⭘ ⭘ ⭘ ⭘

Talk Easy listening Country Top 40 Oldies O

Reading magazine types

⭘ ⭘ ⭘ ⭘

General interest Business Science Sports

What is the highest level of education you have completed?

⭘ ⭘ ⭘ ⭘ ⭘ ⭘ ⭘

High School/GED Some College 2 Year College 4 Year College Masters Ph. D N/A

Which of the following age groups do you fall into?

⭘ ⭘ ⭘ ⭘ ⭘ ⭘

16 – 24 25 – 35 36 – 45 46 – 50 51 – 62 63 or older

Just approximately, which income category best describes your total annual household income?

⭘ ⭘ ⭘ ⭘ ⭘ ⭘

Less than $25,000 $25,001 - $50,000 $50,001 - $75,000 $75,001 - $100,000 $100,001 - $119,999 Over $120,000

Gender

⭘ ⭘

Male Female

Please share any additional comments or suggestions.

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Thank you for participating in this survey.

### Code Sheet

1. How convinced are you that global warming is happening? Would you say you are: **V1**

Not At All Convinced (1)  
Not So Convinced (2)  
Mostly Convinced (3)  
Completely Convinced (4)

1. If you are convinced of global warming, will it affect your choice of your cars’ source of power? **V2**

Yes (1)

No (2)

1. In general, do you feel that gasoline prices are: **V3**

Too Low (1)   
 About Right (2)   
 Somewhat High (3)   
 Much Too High (4)

1. How likely do you think it is that gas prices will remain high over the next several years? **V4**

Not Likely (1)   
Less Likely (2)  
Neutral (3)  
Somewhat Likely (4)   
Very Likely (5)

1. Rank which car and its mpg ratings appeal to you more on a scale of 1 to 3, with 3 being the lowest.

\_\_\_ Very small autos (1 seat) with very high mpg ratings **V5** (1; 2; 3)

\_\_\_ Small autos (2 seats) with high mpg ratings **V6** (1; 2; 3)

\_\_\_ Hybrid compact –size autos with moderately high mpg ratings **V7** (1; 2; 3)

1. Rank which fuel/energy source attracts you the most on a scale of 1 to 3, with 3 being the lowest.

\_\_\_ Synthetic fuel hybrids **V8** (1; 2; 3)

\_\_\_\_ Electric hybrids **V9** (1; 2; 3)

\_ \_\_\_ Alternative fuel models **V10** (1; 2; 3)

1. Which of these sources was MOST useful in providing you with relevant information about choosing new automobile types?
2. Reading newspaper **V11**

Local (1)   
 State (2)   
 National (3)

1. Watching local news on TV **V12**

6am (4)  
8am (5)  
6pm (6)  
10pm (7)

1. Listening to FM radio **V13**

Talk (8)  
Easy listening (9)  
Country (10)  
Top 40 (11)  
Oldies (12)  
Other (13)

1. Reading magazine types **V14**

General interest (14)  
Business (15)  
Science (16)  
Sports (17)

1. What is the highest level of education you have completed? **V15**

High School/GED (1)  
Some College (2)  
2 Year College (3)  
4 Year College (4)  
Masters (5)  
Ph. D (6)  
N/A (7)

1. Which of the following age groups do you fall into? **V17**

16 – 24 (1)   
25 – 35 (2)   
36 – 45 (3)   
46 – 50 (4)  
51 – 62 (5)  
63 or older (6)

1. Just approximately, which income category best describes your total annual household income? **V18**

Less than $25,000 (1)   
$25,001 - $50,000 (2)   
$50,001 - $75,000 (3)   
$75,001 - $100,000 (4)   
$100,001 - $119,999 (5)  
Over $120,000 (6)

1. Gender **V19**

Male (1)   
Female (2)

# Unit 5

## Case 12.3

### Questions

1. The population definition of this sample is all households in the United States whether they own a car or not.
2. A reasonable sample frame for:

Telephone survey: We could use random digit dialing or plus-one dialing.

Mail survey: We could get a list of people who bought cars at ZEN Motors and mail them information. If they won’t let us use their list then we could contact a different car company and buy their list.

1. 1t can be difficult to make sure you give every household in the United States a fair chance to be drawn for the random sample. There is a lot of chance for sample frame error.
2. Advantages of random digit dialing are that they overcome the problems of unlisted and new telephone numbers. A disadvantage is that you might dial a nonexisting telephone number.
3. Advanced Automobile Concept should consider using an online panel. Advantages are that it gives you the ability to reach a lot of people but a disadvantage is that you can’t be sure to reach the entire population. Most everyone has access to the internet and to a computer but not everyone does.

## Case 13.3

### Graph

|  |  |  |
| --- | --- | --- |
| **Sample Size** | **Cost of Sample** | **Sample Error** |
| 20,000 | $200,000 | ±0.69% |
| 10,000 | $100,000 | ±1.0% |
| 5,000 | $50,000 | ±1.4% |
| 2,500 | $25,000 | ±1.96% |
| 1,000 | $10,000 | ±3.1% |
| 500 | $5,000 | ±4.4% |

# Unit 6

## Case 15.3

### Questions

1. The majority of the people in this sample are male (50.5%), married (51.3%), ages 35-49 (25.6%), and have a high school degree (29.8%). The most popular job category is sales and office work (28.5%). Most people make between $25,000 and $49,999 (34.3%).

#### Table A

|  |  |  |
| --- | --- | --- |
| Variables | Categories | Percentages |
| Gender | Male | 50.5% |
|  | Female | 49.5% |
| Marital Status | Unmarried | 48.7% |
|  | Married | 51.3% |
| Age | Ages 18-24 | 12.1% |
|  | Ages 25-34 | 17.4% |
|  | Ages 35-49 | 25.6% |
|  | Ages 50-64 | 23.9% |
|  | Ages 65 and Older | 21% |
| Level of Education | Did Not Complete High School | 19.4% |
|  | High School Degree | 29.8% |
|  | Some College | 21.4% |
|  | College Degree | 22.2% |
|  | Post-undergraduate Degree | 7.2% |
| Job Category | Managerial and Professional | 24.6% |
|  | Sales and Office | 28.5% |
|  | Service | 12% |
|  | Agricultural and Natural Resources | 2.9% |
|  | Precision Production, Craft, Repair | 7.5% |
|  | Operation, Fabrication, General Labor | 10.2% |
|  | Retired | 14.3% |
| Income Category | Under $25000 | 25.6% |
|  | $25000-$49999 | 34.3% |
|  | $50000-$74999 | 19.4% |
|  | $75000-$124999 | 13.7% |
|  | $125000 and Higher | 7% |

1. The majority of the people in this sample have an economy (45.5%) car (43.2%). Look at table B in the appendix.

#### Table B

|  |  |  |
| --- | --- | --- |
| Variables | Categories | Percentages |
| Vehicle Price Type | No Vehicle | 10% |
|  | Economy | 45.5% |
|  | Standard | 27.1% |
|  | Luxury | 17.4% |
| Vehicle Type | No Vehicle | 10% |
|  | Car | 43.2% |
|  | Pick-Up Truck | 21% |
|  | SUV, Van | 25.8% |

1. 62.8% of the people in this sample said they are worried about global warming. 52.4% of the people in this sample said global warming is a real threat. 42.8% of the people feel that we need to do something to slow down global warming. 41.1% of people think that gasoline emissions contribute to global warming. 40.3% of the people in this sample say that Americans use too much gasoline. 42.6% of the people in this sample said that we should be looking for gasoline substitutions.

#### Table C

|  |  |  |
| --- | --- | --- |
| Variables | Categories | Percentages |
| I am worried about global warming | Very Strongly Disagree | 1.5% |
|  | Strongly Disagree | 2.5% |
|  | Disagree | 3.8% |
|  | Neither Agree Nor Disagree | 7.6% |
|  | Agree | 8.8% |
|  | Strongly Agree | 13% |
|  | Very Strongly Agree | 62.8% |
| Global Warming is a Real Threat | Very Strongly Disagree | 5% |
|  | Strongly Disagree | 4.2% |
|  | Disagree | 6.5% |
|  | Neither Agree Nor Disagree | 9.5% |
|  | Agree | 9.7% |
|  | Strongly Agree | 12.7% |
|  | Very Strongly Agree | 52.4% |
| We need to do something about Global Warming | Very Strongly Disagree | 5.7% |
|  | Strongly Disagree | 7.1% |
|  | Disagree | 5.2% |
|  | Neither Agree Nor Disagree | 13.2% |
|  | Agree | 11.3% |
|  | Strongly Agree | 14.7% |
|  | Very Strongly Agree | 42.8% |
| Gasoline Emissions Contribute to Global Warming | Very Strongly Disagree | 14% |
|  | Strongly Disagree | 9.7% |
|  | Disagree | 5.9% |
|  | Neither Agree Nor Disagree | 12.7% |
|  | Agree | 7.5% |
|  | Strongly Agree | 9.1% |
|  | Very Strongly Agree | 41.1% |
| Americans Use Too Much Gasoline | Very Strongly Disagree | 6.9% |
|  | Strongly Disagree | 9.8% |
|  | Disagree | 8% |
|  | Neither Agree Nor Disagree | 14.4% |
|  | Agree | 11.2% |
|  | Strongly Agree | 9.4% |
|  | Very Strongly Agree | 40.3% |

1. 39.7% of the people in this sample feel that hybrid autos that use alternative fuels will reduce fuel emissions. 71.4% of the people in this sample strongly believe that hybrid autos that use alternative fuels will keep gas prices down. 20.9% of the people in this sample strongly believe that hybrid autos that use alternative fuels will slow down global warming.

#### Table D

|  |  |  |
| --- | --- | --- |
| **Variables** | **Categories** | **Percentages** |
| Hybrid Autos That Use Alternative Fuels Will Reduce Fuel Emissions | Very Strongly Disagree | 10.1% |
|  | Strongly Disagree | 3.8% |
|  | Disagree | 10.1% |
|  | Neither Agree Nor Disagree | 12.1% |
|  | Agree | 9.5% |
|  | Strongly Agree | 14.7% |
|  | Very Strongly Agree | 39.7% |
| Hybrid Autos That Use Alternative Fuels Will Keep Gas Price Down | Very Strongly Disagree | 10.9% |
|  | Strongly Disagree | 4.3% |
|  | Disagree | 4.9% |
|  | Neither Agree Nor Disagree | 2.7% |
|  | Agree | 2.3% |
|  | Strongly Agree | 3.5% |
|  | Very Strongly Agree | 71.4% |
| Hybrid Autos That Use Alternative Fuels Will Slow Down Global Warming | Very Strongly Disagree | 16.8% |
|  | Strongly Disagree | 12.6% |
|  | Disagree | 14.4% |
|  | Neither Agree Nor Disagree | 10.3% |
|  | Agree | 16.4% |
|  | Strongly Agree | 8.6% |
|  | Very Strongly Agree | 20.9% |

1. 39.7% of the people in this sample strongly believe that hybrid autos with very high MPG will reduce fuel emissions. 71.4% of the people in this sample strongly believe that hybrid autos with very high MPG will keep gas prices stable. 32.2% of the people in this sample believe that small autos with very high MPG will slow down global warming. Overall, hybrid cars have the most advantages but the small autos are second best.

#### Table E

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | Categories | Sub-Categories | Percentages |
| Very Small Autos With Very High MPG | Will Reduce Fuel Emissions | Very Strongly Disagree | 10.6% |
|  |  | Strongly Disagree | 8.4% |
|  |  | Disagree | 6.1% |
|  |  | Neither | 17.3% |
|  |  | Agree | 10.6% |
|  |  | Strongly Agree | 13.5% |
|  |  | Very Strongly Agree | 33.5% |
|  | Will Keep Gas Prices Stable | Very Strongly Disagree | 20% |
|  |  | Strongly Disagree | 6.6% |
|  |  | Disagree | 7.8% |
|  |  | Neither | 13.8% |
|  |  | Agree | 8.4% |
|  |  | Strongly Agree | 8.1% |
|  |  | Very Strongly Agree | 35.3% |
|  | Will Slow Down Global Warming | Very Strongly Disagree | 30.5% |
|  |  | Strongly Disagree | 10.7% |
|  |  | Disagree | 13.6% |
|  |  | Neither | 12.6% |
|  |  | Agree | 7.9% |
|  |  | Strongly Agree | 9.9% |
|  |  | Very Strongly Agree | 14.8% |
| Small Autos With High MPG | Will Reduce Fuel Emissions | Very Strongly Disagree | 22.6% |
|  |  | Strongly Disagree | 10.9% |
|  |  | Disagree | 12.9% |
|  |  | Neither | 10.3% |
|  |  | Agree | 8.2% |
|  |  | Strongly Agree | 15.9% |
|  |  | Very Strongly Agree | 19.2% |
|  | Will Keep Gas Prices Stable | Very Strongly Disagree | 21.7% |
|  |  | Strongly Disagree | 5% |
|  |  | Disagree | 5.5% |
|  |  | Neither | 6.1% |
|  |  | Agree | 4.8% |
|  |  | Strongly Agree | 3.7% |
|  |  | Very Strongly Agree | 53.2% |
|  | Will Slow Down Global Warming | Very Strongly Disagree | 18.2% |
|  |  | Strongly Disagree | 8.1% |
|  |  | Disagree | 9.9% |
|  |  | Neither | 11.8% |
|  |  | Agree | 8.9% |
|  |  | Strongly Agree | 10.9% |
|  |  | Very Strongly Agree | 32.2% |
| Hybrid Autos That Use Alternative Fuels | Will Reduce Fuel Emissions | Very Strongly Disagree | 10.1% |
|  |  | Strongly Disagree | 3.8% |
|  |  | Disagree | 10.1% |
|  |  | Neither | 12.1% |
|  |  | Agree | 9.5% |
|  |  | Strongly Agree | 14.7% |
|  |  | Very Strongly Agree | 39.7% |
|  | Will Keep Gas Prices Down | Very Strongly Disagree | 10.9% |
|  |  | Strongly Disagree | 4.3% |
|  |  | Disagree | 4.9% |
|  |  | Neither | 2.7% |
|  |  | Agree | 2.3% |
|  |  | Strongly Agree | 3.5% |
|  |  | Very Strongly Agree | 71.4% |
|  | Will Slow Down Global Warming | Very Strongly Disagree | 16.8% |
|  |  | Strongly Disagree | 12.6% |
|  |  | Disagree | 14.4% |
|  |  | Neither | 10.3% |
|  |  | Agree | 16.4% |
|  |  | Strongly Agree | 8.6% |
|  |  | Very Strongly Agree | 20.9% |

1. The probability of buying a standard size synthetic fuel auto within 3 years was the most attractive with 40.17%. The least attractive was the very small (1 seat) hybrid auto with 13.78%.

#### Table F

|  |  |
| --- | --- |
| Variables | Percentages |
| Probability of buying a very small (1 seat) hybrid auto within 3 years. | 13.78% |
| Probability of buying a standard size hybrid auto within 3 years. | 30.12% |
| Probability of buying a small (2 seat) hybrid auto within 3 years. | 20.59% |
| Probability of buying a standard size synthetic fuel auto within 3 years. | 40.17% |
| Probability of buying a standard size electric auto within 3 years. | 34.64% |

## Case 16.3

### Questions

1.

|  |  |
| --- | --- |
|  | Valid Percent |
| Luxury Vehicle | 17.4% |
| Standard Car | 27.1% |
| SUV or Van | 25.8% |

1. 17.4% of the public owns a Luxury vehicle
2. 27.1% of the public owns a standard Car
3. 25.8% of the public owns a SUV or Van

2.

1. 1 through 7: where one is least likely to agree and 7 is to strongly agree, the mean of people who think that by using Hybrid autos that use alternative fuels, it will keep the gas price down is 5.77.
2. The mean of people who think that by using Hybrid autos that use alternative fuels, it will slow down global warming is 4.06.
3. The mean of people who think that by using Hybrid autos that use alternative fuels, it will reduce fuel emissions is 5.10.
4. The Standard deviation of a. is 2.157, b. is 2.133, and c. is 2.052. Normally lower standard deviations are preferable, but these high numbers show that there was a lot of indecisiveness about whether people think that this subject is true or not.

3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Expert Mean | Actual Mean | Significance Level | Explanation |
| Probability of buying a very small (1 seat) hybrid auto within 3 years | 5 | 13.78 | .000 | We would reject this because the significance level for the hypothesis test shows that there is little significance between the expert mean and the actual mean |
| Probability of buying a small (2 seat) hybrid auto within 3 years | 5 | 20.59 | .000 | We would reject this because the significance level for the hypothesis test shows that there is little significance between the expert mean and the actual mean |
| Probability of buying a standard size hybrid auto within 3 years | 15 | 30.12 | .000 | We would reject this because the significance level for the hypothesis test shows that there is little significance between the expert mean and the actual mean |
| Probability of buying a standard size synthetic fuel auto within 3 years | 15 | 40.17 | .000 | We would reject this because the significance level for the hypothesis test shows that there is little significance between the expert mean and the actual mean |
| Probability of buying a standard size electric auto within 3 years | 20 | 34.64 | .000 | We would reject this because the significance level for the hypothesis test shows that there is little significance between the expert mean and the actual mean |

4.

a. I would use the people who were 80-100% sure that they would purchase a very small (1 seat) hybrid auto over the next 3 years. The valid percent of these 3 percent’s are 3.4. If multiplied by the estimated representative sample of American households, which is 111,617,402, then the number of cars purchased would be around 3,794,992 cars.

b. Out of a 90% certainty as to who would buy a small (2 seat) hybrid auto, I would use the percent’s of those who were 80 and 90% sure that they would buy. These percent’s added up to 1% and to find how many of these cars would be bought within the next three years, you would multiply it by the estimated representative sample of American households to get the answer around 111,617 cars.

c. Out of 100%, the people who were 80-100% sure that they would purchase a standard-sized hybrid auto. These were calculated to be around 2.3%. The number of cars that would be bought over the next 3 years would be around 2,567,200 cars.

d. 80-100% of these customers were certain that they would buy a standard-size electric auto. This was calculated to be a total of 5.2%. To see how many of these types of cars would be bought over a period of three years, the percentage was multiplied by the estimated representative of American households. The amount of cars that would be bought is around 5,804,405 cars.

e. Over a period of three years, the percent of 80-100% of the customers that would buy a standard-size synthetic fuel auto is 4%. The number of cars that would be bought would total around 4,464, 696 cars.

## Case 17.3

### Questions

Super cycle one-seat  
**Look at Table 17-A in the appendix for Age.**   
More people prefer super cycle one-seat cars at age 21 than 57. People at age 57 prefer this type of car the least. The preference for this particular car is about the same for ages 30, 70, and 42.

**Look at Table 17-B in the appendix for Education Category.**  
More people prefer this type of car who have less education than the people who have more education.  
  
**Look at Table 17-C in the appendix for Income Category.**  
The type of people who typically buy this car have less income. Their preference is 4.25. The wealthier people preferred this car the least at 1.8.  
  
**Look at Table 17-D in the appendix for Hometown size category.**  
People who live in bigger hometowns or cities prefer this car over people who live in smaller towns or cities. The preference for bigger cities is 4.25 and the preference for smaller cities is around 2.38.  
  
**Look at Table 17-E in the appendix for Gender**  
Men prefer this car more than females do. The mean for men’s preference is 3.5 and women’s is 3.09. Since this study is out of 7, neither gender’s preferred this car very much. The significance is .000.  
  
**Look at Table 17-F in the appendix for Marital Status.**  
More unmarried people prefer this car than married people. The mean for unmarried people is 4.09 and the mean for married people is 2.54. The significance is .000.

Runabout Sport two-seat  
**Look at Table 17-G in the appendix for Age.**  
People who are 21 prefer this type of car over the other age categories with a preference of 5.73. People who are 57 prefer this car the least with a preference of 3.42.  
  
**Look at Table 17-H in the appendix for Education.**  
People who have lower levels of education prefer this type of car over the people with higher education. The less educated people have a preference between 4.56 and 4.73. The people with higher education have a preference between 3.29 and 3.43.  
  
**Look at Table 17-I in the appendix for Income.**  
People who make less income prefer this type of car over people who make more income. People who made $20,000 a year had a preference of 5.09 and people who made $150,000 a year had a preference of 2.64. People who made between $37,500 and $100,000 stand in the middle with a preference between 3.47 and 4.67.  
  
**Look at Table 17-J in the appendix for Hometown size.**  
People who live in a hometown or city of 1500000 tend to prefer this type of car over people who live in a hometown or city of 5000. The people who live in bigger cities have a preference of 5.25 and people who live in smaller cities have a preference of 3.23.  
  
**Look at Table 17-K in the appendix for Gender.**  
There is no significance between males and females in their preference on runabout sport 2 seat hybrid cars.  
  
  
**Look at Table 17-L in the appendix for Marital Status.**More unmarried people prefer this car than married people. The unmarried people’s mean is 4.72 and the married people’s mean is 3.83. The significance is .000.  
  
Runabout with Luggage two-seat  
**Look at Table 17-M in the appendix for Age.**  
People who are age 30 prefer this type of car the most. People who are age 57 prefer this car the least. People who are 30 have a preference of 4.67, people who are 57 have a preference of 3.43, and everyone else falls in the middle.  
  
**Look at Table 17-N in the appendix for Education.**  
People with 14 years of education prefer this car the most with a preference of 4.63. People with 18 years of education prefer this car the least with a preference of 3.15. People with 9-16 years of education fall in the middle.

**Look at Table 17-O in the appendix for Income.**People who make $37500 tend to prefer this car the most with a preference of 4.71. People who make $150000 tend to prefer this car the least with a preference of 2.34. Besides the people who make $20000, everyone else makes between $62500 and $100000.  
  
**Look at Table 17-P in the appendix for Hometown Size.**People who live in a city with a population of 1500000 prefer this car over people who live in a city with a population of 300000. People who live in a population of 150000 have a preference of 5.08 and people who live in a city with a population of 300000 have a preference of 2.32.  
  
**Look at Table 17-Q in the appendix for Gender.**  
There is no significance between males and females in their preference in runabout with luggage 2 seat hybrid cars.  
  
**Look at Table 17-R in the appendix Marital Status.**  
More married people prefer this car than unmarried people. The mean for married people is 4.03 and the mean for unmarried people is 3.53. The significance is .000.

Economy four-seat  
**Look at Table 17-S in the appendix for Age.**  
People who are 57 prefer this car the most with a preference of 4.58. People who are 21 prefer this car the least with a preference of 1.82. People who are 70 prefer this car almost as much as the 57 year olds with a preference of 4.00. 42 year olds have a preference of 3.55 and people who are 30 have a preference of 2.48.  
  
**Look at Table 17-T in the appendix for Education.**  
People who have 16 years of education prefer this car the most with a preference of 4.83 and people who have 12 years of education prefer this car the least with a preference of 2.66. People with 9 years of education have a preference of 2.70, people with 14 years of education have a preference of 3.62. People with 16 years of education have a preference of 4.83 and people with 18 years of education have a preference of 4.60.  
  
**Look at Table 17-U in the appendix for Income.**  
People who make $100000 a year prefer this car the most with a preference of 5.50. People who make $20000 a year have a preference of 2.68 and prefer this car the least. People who make $37500 have a preference of 2.86 and people who make $62500 a year have a preference of 3.64. People who make $150000 have a preference of 5.24.  
  
**Look at Table 17-V in the appendix for Hometown Size.**  
People who live in cities with a population of 750000 prefer this car the most with a preference of 4.24. People who live in cities with a population of 1500000 prefer this car the least with a preference of 2.54. People who live in cities with a population of 5000 have a preference of 3.38 and people who live in cities with a population of 55000 have a preference of 3.53. People who live in cities with a population of 300000 have a preference of 4.06.  
  
**Look at Table 17-W in the appendix for Gender.**  
There is no significance between males and females in their preference in economy 4 seat hybrid cars.  
  
**Look at Table 17-X in the appendix for Marital Status.**  
There is no significance between unmarried and married people in their preference on economy 4 seat hybrid cars.

Standard four-seat  
**Look at Table 17-Y in the appendix for Age.**  
People who are 42 prefer this car the most with a preference of 5.56. People who prefer this car the least are 21 and have a preference of 4.16. All other ages fall in the middle.  
  
**Look at Table 17-Z in the appendix for Education.**People with 16 years of education prefer this car the most with a preference of 5.68. People with 9 years of education prefer this car the least with a preference of 4.08. People with 12-14 years of education have a preference between 4.87 and 4.93. People with 18 years of education have a preference of 5.61.  
  
**Look at Table 17-AA in the appendix for Income.**  
People who make $150000 a year prefer this car the most with a preference of 5.67. People who make $20000 a year prefer this car the least with a preference of 4.49. People who make between $37500 and $100000 have a preference between 4.87 and 5.31.  
  
**Look at Table 17-BB in the appendix for Hometown Size.**  
People who live in cities with a population of 750000 prefer this car the most with a preference of 5.46. People who live in cities with a population of 1500000 prefer this car the least with a preference of 3.64. There wasn’t a huge preference difference between the other population sizes but they all prefer this car. The only people who seemed to not really like this car are the people who live in the very large cities.  
  
**Look at Table 17-CC in the appendix for Gender.**  
Females prefer this car more than males. Female’s mean is 5.1 and males mean is 4.82. The significance is .007.  
  
**Look at Table 17-DD in the appendix for Marital Status.**  
Married people prefer this car more than unmarried people. Married people’s mean is 5.35 and unmarried people’s mean is 4.55. The significance is .000.

## Case 18.4

### Questions

## Case 19.3

### Questions

1. All of the following are significant.
2. Super Cycle one-set hybrid (See tables 19-A and 19-B)  
   Their adjusted R squared value is 0.6.Their beta coefficients are in parenthesis.

* Marital Status (-.195)  
  Directional of the relationship: Inverse
* Income Level (-.280)  
  Directional of the relationship: Inverse
* Size of Home Town or City (.341)  
  Directional of the relationship: Direct
* Age (-.320)  
  Directional of the relationship: Inverse
* Number of People in Household (-.342)  
  Directional of the relationship: Inverse
* Level of Education (-.217)  
  Directional of the relationship: Inverse
* Gender (-.106)  
  Directional of the relationship: Inverse

Runabout Sport two-seat hybrid (See tables 19-C and 19-D)  
Their adjusted R squared value is .471. Their beta coefficients are in parenthesis.

* Income Level (-.313)  
   Directional of the relationship: Inverse
* Size of Home Town or City (.378)  
   Directional of the relationship: Direct
* Number of People in Household (-.484)  
   Directional of the relationship: Inverse
* Age (-.325)  
   Directional of the relationship: Inverse
* Level of Education (-.188)  
   Directional of the relationship: Inverse
* Gasoline Emissions Contribute to Global Warming (-.071)  
   Directional of the relationship: Inverse
* Marital Status (.076)  
   Directional of the relationship: Direct

Runabout with Luggage two-seat hybrid (See tables 19-E and 19-F)  
Their adjusted R squared value is .394. Their beta coefficients are in parenthesis.

* Size of home town or city (.494)  
   Directional of the relationship: Direct
* Age (-.207)  
   Directional of the relationship: Inverse
* Level of Education (.237)  
   Directional of the relationship: Direct
* Income Level (-.233)  
   Directional of the relationship: Inverse
* Marital Status (.291)  
   Directional of the relationship: Direct
* Number of People in Household (-.149)  
   Directional of the relationship: Inverse
* Hybrid Autos That Use Alternative Fuels Will Reduce Fuel Emissions (-.060)  
   Directional of the relationship: Inverse
* Americans Use Too Much Gasoline (.057)  
   Directional of the relationship: Direct

Economy Four-Seat Hybrid (See tables 19-G and 19-H)  
Their adjusted R squared value is .565. Their beta coefficients are in parenthesis.

* Income Level (.340)  
  Directional of the relationship: Direct
* Level of Education (.354)  
  Directional of the relationship: Direct
* Age (.371)  
  Directional of the relationship: Direct
* Size of Home Town or City (-.208)  
  Directional of the relationship: Inverse
* Hybrid Autos That Use Alternative Fuels Will Keep Gas Prices Down (.120)  
  Directional of the relationship: Direct

Standard Four-Seated Hybrid (See tables 19-I and 19-J)  
Their adjusted R squared value is .471. Their beta coefficients are in parenthesis.

* Size of Home Town or City (-.405)  
  Directional of the relationship: Inverse
* Level of Education (.317)  
  Directional of the relationship: Direct
* Number of People in Household (.400)  
  Directional of the relationship: Direct
* Age (.292)  
  Directional of the relationship: Direct
* Income Level (.076)  
  Directional of the relationship: Direct
* Gender (.071)  
  Directional of the relationship: Direct
* We Should Be Looking For Gasoline Substitutes (.050)  
  Directional of the relationship: Direct
* Gasoline Prices Will Remain High in The Future (-.046)  
  Directional of the relationship: Inverse

**The relative importance of the independent variables in order from most important to least important.  
\*The strength of the statistically significant independent variables is greater the closer it gets to 1. (.8-1 = Very Strong) (.5-.7 = Strong) (.2-.4 = Weak) (.1 and below = Very Weak)  
  
Super Cycle one-set hybrid**  
1. Number of People in Household (-.342)  
2. Size of Home Town or City (.341)  
3. Age (-.320)  
4. Income Level (-.280)  
5. Level of Education (-.217)  
6. Gender (-.106)

**Runabout Sport two-seat hybrid**1. Number of people in household (-.484)  
2. Size of Home Town or City (.378)  
3. Age (-.325)  
4. Income Level (-.313)  
5. Level of Education (-.188)  
6. Marital Status (.076)  
7. Gasoline Emissions Contribute to Global Warming (-.071)

**Runabout With Luggage two-seat hybrid**1. Size of Home Town or City (.494)  
2. Marital Status (.291)  
3. Level of Education (.237)  
4. Income Level (-.233)  
5. Age (-.207)  
6. Hybrid Autos That Use Alternative Fuels Will Reduce Fuel Emissions (-.060)  
7. Americans Use Too Much Gasoline (.057)

**Economy four-seat hybrid**1. Age (.371)  
2. Level of Education (.354)  
3. Income Level (.340)  
4. Size of Home Town or City (-.208)  
5. Hybrid Autos That Use Alternative Fuels Wills Keep Gas Prices Down (.120)

**Standard four-seated hybrid**1. Size of Home Town or City (-.405)  
2. Number of People in Household (.400)  
3. Level of Education (.317)  
4. Age (.292)  
5. Income Level (.076)  
6. Gender (.071)  
7. We Should Be Looking For Gasoline Substitutes (.050)  
8. Gasoline Prices Will Remain High in the Future (-.046)

# Discussion

Based on our analysis and interpretations, we now know that 62.8% of people are worried about global warming. About 40% of the people in this sample feel that we need to do something about global warming and also that gasoline emissions contribute to global warming. Currently 43.2% of Americans drive a car over the other types of vehicles and 45.5% of Americans drive economy cars. Only 42.6% of Americans think we should be looking for gasoline substitutions.

People who are male, 21, have 12 years of education, make $20,000 a year, who live in a city or town with a population of 1500000, and who aren’t married prefer the super cycle one-seat hybrid. People who are 21, have 9 years of education, make $20,000 a year, live in a city or town with a population of 1500000, and who aren’t married prefer the runabout sport 2 seat hybrid. People who are 30, have 14 years of education, make $37500 a year, live in a city or town with a population of 1500000, and are married prefer the runabout with luggage 2-seat hybrid. People who are 57, have 16 years of education, make $100000 a year, and who live in a city or town with a population of 750000 prefer the economy 4 seat hybrid. People who are female, 42, have 16 years of education, make $150000 a year, live in a town or city with a population of 750000, and who are married prefer the standard 4 seat hybrid.

In terms of AAC, there is a demand for the small, fuel-efficient vehicles. They were worried that people who liked smaller cars have different values than their current customers. Their typical customer is generally older and wealthier because they buy the luxury cars. The demographics of the people who liked the very small cars are around the age of 21 and they don’t make a lot of money. They should maybe consider making the economy 4-seat hybrid or the standard 4-seat hybrid because older and wealthier people were interested in that type of car.

One limitation is the budget. If money was not a factor, AAC could have gotten information from every single person in the United States using a census. Having that kind of data would give them a very accurate representation of how everyone feels about global warming, alternative fuels, hybrid cars, etc. That type of study is incredibly expensive so there is no way the average person could conduct that study. We can’t think of anything else that they could have done to make it better. This study was very thorough and covered a lot of information. They had access to plenty of data that could help them make their decision. The fact that they couldn’t use a census shouldn’t concern Nick because he still got a good representation of the American public. The decision to make hybrid cars doesn’t require a response from every single person in the United States so he should be more than capable of making a decision from the data we gathered.

# Recommendations

More and more people are going to start looking to buy hybrid cars or smaller cars to help the environment. While most people don’t believe that hybrid autos that use alternative fuels will reduce fuel emissions, they do believe that these types of cars will save them money on gas. I think it is in AAC’s best interest to start selling hybrid cars. Only 42.6% of Americans think we should be looking for gasoline substitutions. Since most people don’t want cars that run on alternative fuel so it wouldn’t be a good idea to make cars like that. Also the majority of people don’t want the very small one seat hybrid cars. They need to make a model that isn’t as big as their current models but also nothing too small. Even though ZEN Motors doesn’t typically sell smaller cars, there is evidently a rising demand for them. Whether people want smaller cars to “go green” or to just save them gas money, it is a good idea to go ahead and make their hybrid, small, fuel-efficient cars.

It is a good idea for ZEN motors to have a variety of cars. Currently they sell bigger luxury cars and they have had a lot of success with it. However, times are changing and gas prices continue to rise. 71.4% of the people in this study strongly believe that hybrid cars will keep gas prices down and only 20.9% strongly believe that hybrid cars will help with global warming. More people are obviously worried about their own bank accounts than global warming. Not to mention the unemployment rate is quite high in America. Not everyone can afford the big cars like they used to be able to. Not only are the prices of the larger cars more expensive, the gas that people have to put into those cars is expensive. In order to compete with their competitors, they need to make a variety of cars to appeal to all types of customers. As we mentioned before, they should make either the economy 4-seat hybrid or the standard 4-seat hybrid since older wealthier people were interested in that type of car and that’s the demographic they are looking for.

# Executive Summary

Nick Thomas is CEO of Advanced Automobile Concepts. He decided to either reengineer the company’s current automobiles or develop new ones because they are losing market share to their competitors. AAC’s large luxury cars are trying to compete with foreign cars and are not doing so well. Nick researched and found out that small, fuel-efficient cars are becoming popular and AAC doesn’t make any cars like that. Nick is now trying to decide whether it is a good idea for AAC to start making the smaller cars. He is reluctant because in the past they have made a lot of money on the large luxury cars. He isn’t sure if he wants to make new cars because the company has done pretty well with making the larger cars. Unfortunately he is forced to reconsider because gas prices are so high and customers are looking for more fuel-efficient cars.

Nick knows that many things affect customers’ attitudes when it comes to purchasing a car. Even though gas prices are high now, Nick isn’t sure if they are going to stay that way or come back down. He is trying to decide whether making smaller cars is a good idea because he thinks if gas prices come back down, people are going to want the larger cars again. He also wants to know how people view global warming because that can also affect whether people want hybrid cars. Nick also questions whether the United States is going to start looking for alternative fuel because that can also affect the type of car people want.

Ashley Roberts researched customer preferences for different types of cars in order to find out what types of people liked which types of cars. She was trying to find out if people who preferred smaller car models had the same values as AAC’s current customers. Cory Rogers then organized focus groups in order to find out how Americans felt about global warming, gasoline prices, alternative fuels, hybrid automobiles and other aspects of the company’s mission. An online survey was sent out using an online panel to prospective automobile purchasers to find out the demographics of the households.

Celeste Brown analyzed the survey using SPSS and presented it to Nick. From her research analysis, Nick was able to come to a conclusion of whether or not to make small, fuel-efficient cars. In the end he decided that in order to keep up with the competitors, AAC needed to offer different types of cars to appeal to a variety of customers. Even though the company has had a lot of success selling their large luxury cars, the sudden gas price increase has affected customers’ attitudes towards purchasing cars. Also, it is hard for AAC to compete with the foreign competition with the luxury cars. AAC will begin the process of making the smaller, fuel-efficient cars real soon.

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# Appendix

Table 15-A

| **Statistics** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Gender | Marital status | Age | Level of education | Job category | Income level |
| N | Valid | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Missing | 0 | 0 | 0 | 0 | 0 | 0 |

| **Gender** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male | 505 | 50.5 | 50.5 | 50.5 |
| Female | 495 | 49.5 | 49.5 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Marital status** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Unmarried | 487 | 48.7 | 48.7 | 48.7 |
| Married | 513 | 51.3 | 51.3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Age** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 21 | 121 | 12.1 | 12.1 | 12.1 |
| 30 | 174 | 17.4 | 17.4 | 29.5 |
| 42 | 256 | 25.6 | 25.6 | 55.1 |
| 57 | 239 | 23.9 | 23.9 | 79.0 |
| 70 | 210 | 21.0 | 21.0 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Level of education** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 9 | 194 | 19.4 | 19.4 | 19.4 |
| 12 | 298 | 29.8 | 29.8 | 49.2 |
| 14 | 214 | 21.4 | 21.4 | 70.6 |
| 16 | 222 | 22.2 | 22.2 | 92.8 |
| 18 | 72 | 7.2 | 7.2 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Job category** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Managerial and Professional | 246 | 24.6 | 24.6 | 24.6 |
| Sales and Office | 285 | 28.5 | 28.5 | 53.1 |
| Service | 120 | 12.0 | 12.0 | 65.1 |
| Agricultural and Natural Resources | 29 | 2.9 | 2.9 | 68.0 |
| Precision Production, Craft, Repair | 75 | 7.5 | 7.5 | 75.5 |
| Operation, Fabrication, General Labor | 102 | 10.2 | 10.2 | 85.7 |
| Retired | 143 | 14.3 | 14.3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Income level** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 20.0 | 256 | 25.6 | 25.6 | 25.6 |
| 37.5 | 343 | 34.3 | 34.3 | 59.9 |
| 62.5 | 194 | 19.4 | 19.4 | 79.3 |
| 100.0 | 137 | 13.7 | 13.7 | 93.0 |
| 150.0 | 70 | 7.0 | 7.0 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

15-B

| **Primary vehicle type** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No vehicle | 100 | 10.0 | 10.0 | 10.0 |
| Car | 432 | 43.2 | 43.2 | 53.2 |
| Pick-Up Truck | 210 | 21.0 | 21.0 | 74.2 |
| SUV, Van | 258 | 25.8 | 25.8 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Primary vehicle price type** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No vehicle | 100 | 10.0 | 10.0 | 10.0 |
| Economy | 455 | 45.5 | 45.5 | 55.5 |
| Standard | 271 | 27.1 | 27.1 | 82.6 |
| Luxury | 174 | 17.4 | 17.4 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

15-C

| **I am worried about global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 15 | 1.5 | 1.5 | 1.5 |
| Strongly disagree | 25 | 2.5 | 2.5 | 4.0 |
| Disagree | 38 | 3.8 | 3.8 | 7.8 |
| Niether disagree nor agree | 76 | 7.6 | 7.6 | 15.4 |
| Agree | 88 | 8.8 | 8.8 | 24.2 |
| Strongly agree | 130 | 13.0 | 13.0 | 37.2 |
| Very strongly agree | 628 | 62.8 | 62.8 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **We need to do something to slow global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 57 | 5.7 | 5.7 | 5.7 |
| Strongly disagree | 71 | 7.1 | 7.1 | 12.8 |
| Disagree | 52 | 5.2 | 5.2 | 18.0 |
| Niether disagree nor agree | 132 | 13.2 | 13.2 | 31.2 |
| Agree | 113 | 11.3 | 11.3 | 42.5 |
| Strongly agree | 147 | 14.7 | 14.7 | 57.2 |
| Very strongly agree | 428 | 42.8 | 42.8 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Gasoline emissions contribute to global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 140 | 14.0 | 14.0 | 14.0 |
| Strongly disagree | 97 | 9.7 | 9.7 | 23.7 |
| Disagree | 59 | 5.9 | 5.9 | 29.6 |
| Niether disagree nor agree | 127 | 12.7 | 12.7 | 42.3 |
| Agree | 75 | 7.5 | 7.5 | 49.8 |
| Strongly agree | 91 | 9.1 | 9.1 | 58.9 |
| Very strongly agree | 411 | 41.1 | 41.1 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Americans use too much gasoline.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 69 | 6.9 | 6.9 | 6.9 |
| Strongly disagree | 98 | 9.8 | 9.8 | 16.7 |
| Disagree | 80 | 8.0 | 8.0 | 24.7 |
| Niether disagree nor agree | 144 | 14.4 | 14.4 | 39.1 |
| Agree | 112 | 11.2 | 11.2 | 50.3 |
| Strongly agree | 94 | 9.4 | 9.4 | 59.7 |
| Very strongly agree | 403 | 40.3 | 40.3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **We should be looking for gasoline substitutes.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 113 | 11.3 | 11.3 | 11.3 |
| Strongly disagree | 73 | 7.3 | 7.3 | 18.6 |
| Disagree | 71 | 7.1 | 7.1 | 25.7 |
| Niether disagree nor agree | 90 | 9.0 | 9.0 | 34.7 |
| Agree | 110 | 11.0 | 11.0 | 45.7 |
| Strongly agree | 117 | 11.7 | 11.7 | 57.4 |
| Very strongly agree | 426 | 42.6 | 42.6 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

15-D

| **Hybrid autos that use alternative fuels will reduce fuel emissions.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 101 | 10.1 | 10.1 | 10.1 |
| Strongly disagree | 38 | 3.8 | 3.8 | 13.9 |
| Disagree | 101 | 10.1 | 10.1 | 24.0 |
| Niether disagree nor agree | 121 | 12.1 | 12.1 | 36.1 |
| Agree | 95 | 9.5 | 9.5 | 45.6 |
| Strongly agree | 147 | 14.7 | 14.7 | 60.3 |
| Very strongly agree | 397 | 39.7 | 39.7 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Hybrid autos that use alternative fuels will keep gas prices down.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 109 | 10.9 | 10.9 | 10.9 |
| Strongly disagree | 43 | 4.3 | 4.3 | 15.2 |
| Disagree | 49 | 4.9 | 4.9 | 20.1 |
| Niether disagree nor agree | 27 | 2.7 | 2.7 | 22.8 |
| Agree | 23 | 2.3 | 2.3 | 25.1 |
| Strongly agree | 35 | 3.5 | 3.5 | 28.6 |
| Very strongly agree | 714 | 71.4 | 71.4 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Hybrid autos that use alternative fuels will slow down global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 168 | 16.8 | 16.8 | 16.8 |
| Strongly disagree | 126 | 12.6 | 12.6 | 29.4 |
| Disagree | 144 | 14.4 | 14.4 | 43.8 |
| Niether disagree nor agree | 103 | 10.3 | 10.3 | 54.1 |
| Agree | 164 | 16.4 | 16.4 | 70.5 |
| Strongly agree | 86 | 8.6 | 8.6 | 79.1 |
| Very strongly agree | 209 | 20.9 | 20.9 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

15-E

| **Very small autos with very high mpg's will reduce fuel emissions.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 106 | 10.6 | 10.6 | 10.6 |
| Strongly disagree | 84 | 8.4 | 8.4 | 19.0 |
| Disagree | 61 | 6.1 | 6.1 | 25.1 |
| Niether disagree nor agree | 173 | 17.3 | 17.3 | 42.4 |
| Agree | 106 | 10.6 | 10.6 | 53.0 |
| Strongly agree | 135 | 13.5 | 13.5 | 66.5 |
| Very strongly agree | 335 | 33.5 | 33.5 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Very small autos with very high mpg's will keep gas prices stable.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 200 | 20.0 | 20.0 | 20.0 |
| Strongly disagree | 66 | 6.6 | 6.6 | 26.6 |
| Disagree | 78 | 7.8 | 7.8 | 34.4 |
| Niether disagree nor agree | 138 | 13.8 | 13.8 | 48.2 |
| Agree | 84 | 8.4 | 8.4 | 56.6 |
| Strongly agree | 81 | 8.1 | 8.1 | 64.7 |
| Very strongly agree | 353 | 35.3 | 35.3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Very small autos with very high mpg's will slow down global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 305 | 30.5 | 30.5 | 30.5 |
| Strongly disagree | 107 | 10.7 | 10.7 | 41.2 |
| Disagree | 136 | 13.6 | 13.6 | 54.8 |
| Niether disagree nor agree | 126 | 12.6 | 12.6 | 67.4 |
| Agree | 79 | 7.9 | 7.9 | 75.3 |
| Strongly agree | 99 | 9.9 | 9.9 | 85.2 |
| Very strongly agree | 148 | 14.8 | 14.8 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Small autos with high mpg's will reduce fuel emissions.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 226 | 22.6 | 22.6 | 22.6 |
| Strongly disagree | 109 | 10.9 | 10.9 | 33.5 |
| Disagree | 129 | 12.9 | 12.9 | 46.4 |
| Niether disagree nor agree | 103 | 10.3 | 10.3 | 56.7 |
| Agree | 82 | 8.2 | 8.2 | 64.9 |
| Strongly agree | 159 | 15.9 | 15.9 | 80.8 |
| Very strongly agree | 192 | 19.2 | 19.2 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Small autos with high mpg's will keep gas prices stable.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 217 | 21.7 | 21.7 | 21.7 |
| Strongly disagree | 50 | 5.0 | 5.0 | 26.7 |
| Disagree | 55 | 5.5 | 5.5 | 32.2 |
| Niether disagree nor agree | 61 | 6.1 | 6.1 | 38.3 |
| Agree | 48 | 4.8 | 4.8 | 43.1 |
| Strongly agree | 37 | 3.7 | 3.7 | 46.8 |
| Very strongly agree | 532 | 53.2 | 53.2 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Small autos with high mpg's will slow down global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 182 | 18.2 | 18.2 | 18.2 |
| Strongly disagree | 81 | 8.1 | 8.1 | 26.3 |
| Disagree | 99 | 9.9 | 9.9 | 36.2 |
| Niether disagree nor agree | 118 | 11.8 | 11.8 | 48.0 |
| Agree | 89 | 8.9 | 8.9 | 56.9 |
| Strongly agree | 109 | 10.9 | 10.9 | 67.8 |
| Very strongly agree | 322 | 32.2 | 32.2 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Hybrid autos that use alternative fuels will reduce fuel emissions.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 101 | 10.1 | 10.1 | 10.1 |
| Strongly disagree | 38 | 3.8 | 3.8 | 13.9 |
| Disagree | 101 | 10.1 | 10.1 | 24.0 |
| Niether disagree nor agree | 121 | 12.1 | 12.1 | 36.1 |
| Agree | 95 | 9.5 | 9.5 | 45.6 |
| Strongly agree | 147 | 14.7 | 14.7 | 60.3 |
| Very strongly agree | 397 | 39.7 | 39.7 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Hybrid autos that use alternative fuels will keep gas prices down.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 109 | 10.9 | 10.9 | 10.9 |
| Strongly disagree | 43 | 4.3 | 4.3 | 15.2 |
| Disagree | 49 | 4.9 | 4.9 | 20.1 |
| Niether disagree nor agree | 27 | 2.7 | 2.7 | 22.8 |
| Agree | 23 | 2.3 | 2.3 | 25.1 |
| Strongly agree | 35 | 3.5 | 3.5 | 28.6 |
| Very strongly agree | 714 | 71.4 | 71.4 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Hybrid autos that use alternative fuels will slow down global warming.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 168 | 16.8 | 16.8 | 16.8 |
| Strongly disagree | 126 | 12.6 | 12.6 | 29.4 |
| Disagree | 144 | 14.4 | 14.4 | 43.8 |
| Niether disagree nor agree | 103 | 10.3 | 10.3 | 54.1 |
| Agree | 164 | 16.4 | 16.4 | 70.5 |
| Strongly agree | 86 | 8.6 | 8.6 | 79.1 |
| Very strongly agree | 209 | 20.9 | 20.9 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

15-F

| **Probability of buying a very small (1 seat) hybrid auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 616 | 61.6 | 61.6 | 61.6 |
| 10 | 88 | 8.8 | 8.8 | 70.4 |
| 20 | 69 | 6.9 | 6.9 | 77.3 |
| 30 | 73 | 7.3 | 7.3 | 84.6 |
| 40 | 40 | 4.0 | 4.0 | 88.6 |
| 50 | 36 | 3.6 | 3.6 | 92.2 |
| 60 | 22 | 2.2 | 2.2 | 94.4 |
| 70 | 22 | 2.2 | 2.2 | 96.6 |
| 80 | 10 | 1.0 | 1.0 | 97.6 |
| 90 | 13 | 1.3 | 1.3 | 98.9 |
| 100 | 11 | 1.1 | 1.1 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a small (2 seat) hybrid auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 293 | 29.3 | 29.3 | 29.3 |
| 10 | 162 | 16.2 | 16.2 | 45.5 |
| 20 | 183 | 18.3 | 18.3 | 63.8 |
| 30 | 124 | 12.4 | 12.4 | 76.2 |
| 40 | 120 | 12.0 | 12.0 | 88.2 |
| 50 | 61 | 6.1 | 6.1 | 94.3 |
| 60 | 38 | 3.8 | 3.8 | 98.1 |
| 70 | 9 | .9 | .9 | 99.0 |
| 80 | 7 | .7 | .7 | 99.7 |
| 90 | 3 | .3 | .3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a standard size hybrid auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 137 | 13.7 | 13.7 | 13.7 |
| 10 | 142 | 14.2 | 14.2 | 27.9 |
| 20 | 160 | 16.0 | 16.0 | 43.9 |
| 30 | 173 | 17.3 | 17.3 | 61.2 |
| 40 | 131 | 13.1 | 13.1 | 74.3 |
| 50 | 126 | 12.6 | 12.6 | 86.9 |
| 60 | 71 | 7.1 | 7.1 | 94.0 |
| 70 | 37 | 3.7 | 3.7 | 97.7 |
| 80 | 16 | 1.6 | 1.6 | 99.3 |
| 90 | 6 | .6 | .6 | 99.9 |
| 100 | 1 | .1 | .1 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a standard size synthetic fuel auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 53 | 5.3 | 5.3 | 5.3 |
| 10 | 75 | 7.5 | 7.5 | 12.8 |
| 20 | 123 | 12.3 | 12.3 | 25.1 |
| 30 | 174 | 17.4 | 17.4 | 42.5 |
| 40 | 163 | 16.3 | 16.3 | 58.8 |
| 50 | 154 | 15.4 | 15.4 | 74.2 |
| 60 | 129 | 12.9 | 12.9 | 87.1 |
| 70 | 77 | 7.7 | 7.7 | 94.8 |
| 80 | 35 | 3.5 | 3.5 | 98.3 |
| 90 | 11 | 1.1 | 1.1 | 99.4 |
| 100 | 6 | .6 | .6 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a standard size electric auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 107 | 10.7 | 10.7 | 10.7 |
| 10 | 99 | 9.9 | 9.9 | 20.6 |
| 20 | 144 | 14.4 | 14.4 | 35.0 |
| 30 | 189 | 18.9 | 18.9 | 53.9 |
| 40 | 135 | 13.5 | 13.5 | 67.4 |
| 50 | 137 | 13.7 | 13.7 | 81.1 |
| 60 | 93 | 9.3 | 9.3 | 90.4 |
| 70 | 56 | 5.6 | 5.6 | 96.0 |
| 80 | 28 | 2.8 | 2.8 | 98.8 |
| 90 | 9 | .9 | .9 | 99.7 |
| 100 | 3 | .3 | .3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

16-A

| **Primary vehicle price type** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No vehicle | 100 | 10.0 | 10.0 | 10.0 |
| Economy | 455 | 45.5 | 45.5 | 55.5 |
| Standard | 271 | 27.1 | 27.1 | 82.6 |
| Luxury | 174 | 17.4 | 17.4 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Primary vehicle type** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No vehicle | 100 | 10.0 | 10.0 | 10.0 |
| Car | 432 | 43.2 | 43.2 | 53.2 |
| Pick-Up Truck | 210 | 21.0 | 21.0 | 74.2 |
| SUV, Van | 258 | 25.8 | 25.8 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

16-B

| **Hybrid autos that use alternative fuels will reduce fuel emissions.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 101 | 10.1 | 10.1 | 10.1 |
| Strongly disagree | 38 | 3.8 | 3.8 | 13.9 |
| Disagree | 101 | 10.1 | 10.1 | 24.0 |
| Niether disagree nor agree | 121 | 12.1 | 12.1 | 36.1 |
| Agree | 95 | 9.5 | 9.5 | 45.6 |
| Strongly agree | 147 | 14.7 | 14.7 | 60.3 |
| Very strongly agree | 397 | 39.7 | 39.7 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Hybrid autos that use alternative fuels will keep gas prices down.** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 109 | 10.9 | 10.9 | 10.9 |
| Strongly disagree | 43 | 4.3 | 4.3 | 15.2 |
| Disagree | 49 | 4.9 | 4.9 | 20.1 |
| Niether disagree nor agree | 27 | 2.7 | 2.7 | 22.8 |
| Agree | 23 | 2.3 | 2.3 | 25.1 |
| Strongly agree | 35 | 3.5 | 3.5 | 28.6 |
| Very strongly agree | 714 | 71.4 | 71.4 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |
| **Hybrid autos that use alternative fuels will slow down global warming.** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Very strongly disagree | 168 | 16.8 | 16.8 | 16.8 |
| Strongly disagree | 126 | 12.6 | 12.6 | 29.4 |
| Disagree | 144 | 14.4 | 14.4 | 43.8 |
| Niether disagree nor agree | 103 | 10.3 | 10.3 | 54.1 |
| Agree | 164 | 16.4 | 16.4 | 70.5 |
| Strongly agree | 86 | 8.6 | 8.6 | 79.1 |
| Very strongly agree | 209 | 20.9 | 20.9 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

16-C

| **One-Sample Statistics** | | | | |
| --- | --- | --- | --- | --- |
|  | N | Mean | Std. Deviation | Std. Error Mean |
| Probability of buying a very small (1 seat) hybrid auto within 3 years | 1000 | 13.78 | 23.088 | .730 |

| **One-Sample Test** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Test Value = 5 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Probability of buying a very small (1 seat) hybrid auto within 3 years | 12.026 | 999 | .000 | 8.780 | 7.35 | 10.21 |

16-D

| **One-Sample Statistics** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | N | | Mean | | Std. Deviation | | Std. Error Mean | |
| Probability of buying a small (2 seat) hybrid auto within 3 years | | 1000 | | 20.59 | | 19.285 | | .610 | |
| **One-Sample Test** | | | | | | | | | | | |
|  | Test Value = 5 | | | | | | | | | | |
| t | | df | | Sig. (2-tailed) | | Mean Difference | | 95% Confidence Interval of the Difference | | |
| Lower | | Upper |
| Probability of buying a small (2 seat) hybrid auto within 3 years | 25.563 | | 999 | | .000 | | 15.590 | | 14.39 | | 16.79 |

16-E

| **One-Sample Statistics** | | | | |
| --- | --- | --- | --- | --- |
|  | N | Mean | Std. Deviation | Std. Error Mean |
| Probability of buying a standard size hybrid auto within 3 years | 1000 | 30.12 | 21.205 | .671 |

| **One-Sample Test** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Test Value = 15 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Probability of buying a standard size hybrid auto within 3 years | 22.549 | 999 | .000 | 15.120 | 13.80 | 16.44 |

16-F

| **One-Sample Statistics** | | | | |
| --- | --- | --- | --- | --- |
|  | N | Mean | Std. Deviation | Std. Error Mean |
| Probability of buying a standard size synthetic fuel auto within 3 years | 1000 | 40.17 | 21.465 | .679 |

| **One-Sample Test** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Test Value = 15 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Probability of buying a standard size synthetic fuel auto within 3 years | 37.082 | 999 | .000 | 25.170 | 23.84 | 26.50 |

16-G

| **One-Sample Statistics** | | | | |
| --- | --- | --- | --- | --- |
|  | N | Mean | Std. Deviation | Std. Error Mean |
| Probability of buying a standard size electric auto within 3 years | 1000 | 34.64 | 22.090 | .699 |

| **One-Sample Test** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Test Value = 20 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Probability of buying a standard size electric auto within 3 years | 20.958 | 999 | .000 | 14.640 | 13.27 | 16.01 |

16-H

| **Probability of buying a very small (1 seat) hybrid auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 616 | 61.6 | 61.6 | 61.6 |
| 10 | 88 | 8.8 | 8.8 | 70.4 |
| 20 | 69 | 6.9 | 6.9 | 77.3 |
| 30 | 73 | 7.3 | 7.3 | 84.6 |
| 40 | 40 | 4.0 | 4.0 | 88.6 |
| 50 | 36 | 3.6 | 3.6 | 92.2 |
| 60 | 22 | 2.2 | 2.2 | 94.4 |
| 70 | 22 | 2.2 | 2.2 | 96.6 |
| 80 | 10 | 1.0 | 1.0 | 97.6 |
| 90 | 13 | 1.3 | 1.3 | 98.9 |
| 100 | 11 | 1.1 | 1.1 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a small (2 seat) hybrid auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 293 | 29.3 | 29.3 | 29.3 |
| 10 | 162 | 16.2 | 16.2 | 45.5 |
| 20 | 183 | 18.3 | 18.3 | 63.8 |
| 30 | 124 | 12.4 | 12.4 | 76.2 |
| 40 | 120 | 12.0 | 12.0 | 88.2 |
| 50 | 61 | 6.1 | 6.1 | 94.3 |
| 60 | 38 | 3.8 | 3.8 | 98.1 |
| 70 | 9 | .9 | .9 | 99.0 |
| 80 | 7 | .7 | .7 | 99.7 |
| 90 | 3 | .3 | .3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a standard size hybrid auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 137 | 13.7 | 13.7 | 13.7 |
| 10 | 142 | 14.2 | 14.2 | 27.9 |
| 20 | 160 | 16.0 | 16.0 | 43.9 |
| 30 | 173 | 17.3 | 17.3 | 61.2 |
| 40 | 131 | 13.1 | 13.1 | 74.3 |
| 50 | 126 | 12.6 | 12.6 | 86.9 |
| 60 | 71 | 7.1 | 7.1 | 94.0 |
| 70 | 37 | 3.7 | 3.7 | 97.7 |
| 80 | 16 | 1.6 | 1.6 | 99.3 |
| 90 | 6 | .6 | .6 | 99.9 |
| 100 | 1 | .1 | .1 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a standard size synthetic fuel auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 53 | 5.3 | 5.3 | 5.3 |
| 10 | 75 | 7.5 | 7.5 | 12.8 |
| 20 | 123 | 12.3 | 12.3 | 25.1 |
| 30 | 174 | 17.4 | 17.4 | 42.5 |
| 40 | 163 | 16.3 | 16.3 | 58.8 |
| 50 | 154 | 15.4 | 15.4 | 74.2 |
| 60 | 129 | 12.9 | 12.9 | 87.1 |
| 70 | 77 | 7.7 | 7.7 | 94.8 |
| 80 | 35 | 3.5 | 3.5 | 98.3 |
| 90 | 11 | 1.1 | 1.1 | 99.4 |
| 100 | 6 | .6 | .6 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

| **Probability of buying a standard size electric auto within 3 years** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 0 | 107 | 10.7 | 10.7 | 10.7 |
| 10 | 99 | 9.9 | 9.9 | 20.6 |
| 20 | 144 | 14.4 | 14.4 | 35.0 |
| 30 | 189 | 18.9 | 18.9 | 53.9 |
| 40 | 135 | 13.5 | 13.5 | 67.4 |
| 50 | 137 | 13.7 | 13.7 | 81.1 |
| 60 | 93 | 9.3 | 9.3 | 90.4 |
| 70 | 56 | 5.6 | 5.6 | 96.0 |
| 80 | 28 | 2.8 | 2.8 | 98.8 |
| 90 | 9 | .9 | .9 | 99.7 |
| 100 | 3 | .3 | .3 | 100.0 |
| Total | 1000 | 100.0 | 100.0 |  |

17-A

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Super Cycle 1 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 463.814 | 4 | 115.953 | 44.813 | .000 |
| Within Groups | 2574.570 | 995 | 2.588 |  |  |
| Total | 3038.384 | 999 |  |  |  |

| **Preference: Super Cycle 1 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Age | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| 57 | 239 | 2.55 |  |  |
| 42 | 256 |  | 3.21 |  |
| 70 | 210 |  | 3.28 |  |
| 30 | 174 |  | 3.33 |  |
| 21 | 121 |  |  | 4.94 |
| Sig. |  | 1.000 | .500 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 186.124. | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17-B   | **ANOVA** | | | | | | | --- | --- | --- | --- | --- | --- | | Preference: Super Cycle 1 seat hybrid | | | | | | |  | Sum of Squares | df | Mean Square | F | Sig. | | Between Groups | 291.555 | 4 | 72.889 | 26.403 | .000 | | Within Groups | 2746.829 | 995 | 2.761 |  |  | | Total | 3038.384 | 999 |  |  |  |  | **Preference: Super Cycle 1 seat hybrid** | | | | | | | --- | --- | --- | --- | --- | --- | | Duncana,b | | | | | | | Level of education | | N | Subset for alpha = 0.05 | | | | 1 | 2 | 3 | | dimension1 | 18 | 72 | 1.93 |  |  | | 16 | 222 |  | 2.69 |  | | 14 | 214 |  |  | 3.58 | | 9 | 194 |  |  | 3.63 | | 12 | 298 |  |  | 3.65 | | Sig. |  | 1.000 | 1.000 | .751 | | Means for groups in homogeneous subsets are displayed. | | | | | | | a. Uses Harmonic Mean Sample Size = 158.345. | | | | | | | b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | |   17-C   | **ANOVA** | | | | | | | --- | --- | --- | --- | --- | --- | | Preference: Super Cycle 1 seat hybrid | | | | | | |  | Sum of Squares | df | Mean Square | F | Sig. | | Between Groups | 579.942 | 4 | 144.986 | 58.680 | .000 | | Within Groups | 2458.442 | 995 | 2.471 |  |  | | Total | 3038.384 | 999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | | **Preference: Super Cycle 1 seat hybrid** | | | | | | | | --- | --- | --- | --- | --- | --- | --- | | Duncana,b | | | | | | | | Income level | | N | Subset for alpha = 0.05 | | | | | 1 | 2 | 3 | 4 | | dimension1 | 150.0 | 70 | 1.80 |  |  |  | | 62.5 | 194 |  | 2.57 |  |  | | 100.0 | 137 |  | 2.62 |  |  | | 37.5 | 343 |  |  | 3.57 |  | | 20.0 | 256 |  |  |  | 4.25 | | Sig. |  | 1.000 | .769 | 1.000 | 1.000 | | Means for groups in homogeneous subsets are displayed. | | | | | | | | a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | | | b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | | | | | | | | | | Duncana,b | | | | | | | | Income level | | N | Subset for alpha = 0.05 | | | | | 1 | 2 | 3 | 4 | | dimension1 | 150.0 | 70 | 1.80 |  |  |  | | 62.5 | 194 |  | 2.57 |  |  | | 100.0 | 137 |  | 2.62 |  |  | | 37.5 | 343 |  |  | 3.57 |  | | 20.0 | 256 |  |  |  | 4.25 | | Sig. |  | 1.000 | .769 | 1.000 | 1.000 | | Means for groups in homogeneous subsets are displayed. | | | | | | | | a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | | | b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | |   17-D 17-E 17-F 17-G 17-H 17-I 17-J |

| **Preference: Super Cycle 1 seat hybrid** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | | |
| Income level | | N | Subset for alpha = 0.05 | | | |
| 1 | 2 | 3 | 4 |
| dimension1 | 150.0 | 70 | 1.80 |  |  |  |
| 62.5 | 194 |  | 2.57 |  |  |
| 100.0 | 137 |  | 2.62 |  |  |
| 37.5 | 343 |  |  | 3.57 |  |
| 20.0 | 256 |  |  |  | 4.25 |
| Sig. |  | 1.000 | .769 | 1.000 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | | | |
| a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | |

17-D

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Super Cycle 1 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 466.220 | 4 | 116.555 | 45.087 | .000 |
| Within Groups | 2572.164 | 995 | 2.585 |  |  |
| Total | 3038.384 | 999 |  |  |  |

| **Preference: Super Cycle 1 seat hybrid** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | |
| Size of home town or city | | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| dimension1 | 5 | 154 | 2.38 |  |  |
| 55 | 177 | 2.58 |  |  |
| 300 | 176 |  | 3.22 |  |
| 750 | 226 |  | 3.42 |  |
| 1500 | 267 |  |  | 4.25 |
| Sig. |  | .211 | .236 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | | |
| a. Uses Harmonic Mean Sample Size = 192.344. | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.  17-E   | **Group Statistics** | | | | | | | --- | --- | --- | --- | --- | --- | |  | Gender | N | Mean | Std. Deviation | Std. Error Mean | | Preference: Super Cycle 1 seat hybrid | Male | 505 | 3.50 | 1.697 | .076 | | Female | 495 | 3.09 | 1.768 | .079 |  | **Independent Samples Test** | | | | | | | | | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | | | Lower | Upper | | Preference: Super Cycle 1 seat hybrid | Equal variances assumed | .093 | .761 | 3.742 | 998 | .000 | .410 | .110 | .195 | .625 | | Equal variances not assumed |  |  | 3.741 | 994.341 | .000 | .410 | .110 | .195 | .625 | | | | | | |

17-F

| **Group Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Marital status | | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Super Cycle 1 seat hybrid | dimension1 | Unmarried | 487 | 4.09 | 1.721 | .078 |
| Married | 513 | 2.54 | 1.400 | .062 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Super Cycle 1 seat hybrid | Equal variances assumed | 16.574 | .000 | 15.604 | 998 | .000 | 1.544 | .099 | 1.350 | 1.739 |
| Equal variances not assumed |  |  | 15.522 | 937.283 | .000 | 1.544 | .100 | 1.349 | 1.740 |

17-G

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout Sport 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 433.981 | 4 | 108.495 | 43.298 | .000 |
| Within Groups | 2493.263 | 995 | 2.506 |  |  |
| Total | 2927.244 | 999 |  |  |  |

| **Preference: Runabout Sport 2 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Age | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| 57 | 239 | 3.42 |  |  |
| 30 | 174 |  | 4.17 |  |
| 42 | 256 |  | 4.34 |  |
| 70 | 210 |  | 4.37 |  |
| 21 | 121 |  |  | 5.73 |
| Sig. |  | 1.000 | .242 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 186.124. | | | | |

17-H

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout Sport 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 317.914 | 4 | 79.478 | 30.307 | .000 |
| Within Groups | 2609.330 | 995 | 2.622 |  |  |
| Total | 2927.244 | 999 |  |  |  |

| **Preference: Runabout Sport 2 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Level of education | | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| dimension1 | 18 | 72 | 3.29 |  |
| 16 | 222 | 3.43 |  |
| 14 | 214 |  | 4.56 |
| 12 | 298 |  | 4.61 |
| 9 | 194 |  | 4.73 |
| Sig. |  | .439 | .381 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 158.345. | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | |

17-I

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout Sport 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 584.079 | 4 | 146.020 | 62.006 | .000 |
| Within Groups | 2343.165 | 995 | 2.355 |  |  |
| Total | 2927.244 | 999 |  |  |  |

| **Preference: Runabout Sport 2 seat hybrid** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | | |
| Income level | | N | Subset for alpha = 0.05 | | | |
| 1 | 2 | 3 | 4 |
| dimension1 | 150.0 | 70 | 2.64 |  |  |  |
| 100.0 | 137 |  | 3.47 |  |  |
| 62.5 | 194 |  | 3.61 |  |  |
| 37.5 | 343 |  |  | 4.67 |  |
| 20.0 | 256 |  |  |  | 5.09 |
| Sig. |  | 1.000 | .452 | 1.000 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | | | |
| a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | |

17-J

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout Sport 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 527.211 | 4 | 131.803 | 54.642 | .000 |
| Within Groups | 2400.033 | 995 | 2.412 |  |  |
| Total | 2927.244 | 999 |  |  |  |

| **Preference: Runabout Sport 2 seat hybrid** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | |
| Size of home town or city | | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| dimension1 | 5 | 154 | 3.23 |  |  |
| 55 | 177 | 3.51 |  |  |
| 300 | 176 |  | 4.26 |  |
| 750 | 226 |  | 4.41 |  |
| 1500 | 267 |  |  | 5.25 |
| Sig. |  | .083 | .358 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | | |
| a. Uses Harmonic Mean Sample Size = 192.344. | | | | | |

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17-K   | **Group Statistics** | | | | | | | --- | --- | --- | --- | --- | --- | |  | Gender | N | Mean | Std. Deviation | Std. Error Mean | | Preference: Runabout Sport 2 seat hybrid | Male | 505 | 4.24 | 1.710 | .076 | | Female | 495 | 4.29 | 1.714 | .077 |  | **Independent Samples Test** | | | | | | | | | | | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | | | Lower | Upper | | Preference: Runabout Sport 2 seat hybrid | Equal variances assumed | .000 | .985 | -.455 | 998 | .649 | -.049 | .108 | -.262 | .163 | | Equal variances not assumed |  |  | -.455 | 997.500 | .649 | -.049 | .108 | -.262 | .163 |   17-L   | **Group Statistics** | | | | | | | | --- | --- | --- | --- | --- | --- | --- | |  | Marital status | | N | Mean | Std. Deviation | Std. Error Mean | | Preference: Runabout Sport 2 seat hybrid | dimension1 | Unmarried | 487 | 4.72 | 1.642 | .074 | | Married | 513 | 3.83 | 1.663 | .073 | |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Runabout Sport 2 seat hybrid | Equal variances assumed | .119 | .730 | 8.552 | 998 | .000 | .894 | .105 | .689 | 1.100 |
| Equal variances not assumed |  |  | 8.555 | 996.440 | .000 | .894 | .105 | .689 | 1.100 |

17-M

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout with Luggage 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 226.344 | 4 | 56.586 | 17.303 | .000 |
| Within Groups | 3253.860 | 995 | 3.270 |  |  |
| Total | 3480.204 | 999 |  |  |  |

| **Preference: Runabout with Luggage 2 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Age | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| 57 | 239 | 3.43 |  |  |
| 70 | 210 | 3.51 |  |  |
| 42 | 256 | 3.52 |  |  |
| 21 | 121 |  | 4.25 |  |
| 30 | 174 |  |  | 4.67 |
| Sig. |  | .660 | 1.000 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 186.124. | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | |

17-N

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout with Luggage 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 387.135 | 4 | 96.784 | 31.134 | .000 |
| Within Groups | 3093.069 | 995 | 3.109 |  |  |
| Total | 3480.204 | 999 |  |  |  |

| **Preference: Runabout with Luggage 2 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Level of education | | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| dimension1 | 18 | 72 | 3.15 |  |
| 12 | 298 | 3.22 |  |
| 9 | 194 | 3.32 |  |
| 16 | 222 |  | 4.35 |
| 14 | 214 |  | 4.63 |
| Sig. |  | .418 | .159 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 158.345. | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | |

17-O

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout with Luggage 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 849.338 | 4 | 212.335 | 80.305 | .000 |
| Within Groups | 2630.866 | 995 | 2.644 |  |  |
| Total | 3480.204 | 999 |  |  |  |

| **Preference: Runabout with Luggage 2 seat hybrid** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | |
| Income level | | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| dimension1 | 150.0 | 70 | 2.34 |  |  |
| 100.0 | 137 | 2.61 |  |  |
| 20.0 | 256 |  | 3.07 |  |
| 62.5 | 194 |  |  | 4.45 |
| 37.5 | 343 |  |  | 4.71 |
| Sig. |  | .163 | 1.000 | .172 |
| Means for groups in homogeneous subsets are displayed. | | | | | |
| a. Uses Harmonic Mean Sample Size = 148.981. | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | |

17-P

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Runabout with Luggage 2 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 981.507 | 4 | 245.377 | 97.711 | .000 |
| Within Groups | 2498.697 | 995 | 2.511 |  |  |
| Total | 3480.204 | 999 |  |  |  |

| **Preference: Runabout with Luggage 2 seat hybrid** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | | |
| Size of home town or city | | N | Subset for alpha = 0.05 | | | |
| 1 | 2 | 3 | 4 |
| dimension1 | 300 | 176 | 2.32 |  |  |  |
| 5 | 154 |  | 3.21 |  |  |
| 55 | 177 |  | 3.22 |  |  |
| 750 | 226 |  |  | 4.23 |  |
| 1500 | 267 |  |  |  | 5.08 |
| Sig. |  | 1.000 | .938 | 1.000 | 1.000 |
| Means for groups in homogeneous subsets are displayed. | | | | | | |
| a. Uses Harmonic Mean Sample Size = 192.344. | | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | |

17-Q

| **Group Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | Gender | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Runabout with Luggage 2 seat hybrid | Male | 505 | 3.85 | 1.856 | .083 |
| Female | 495 | 3.72 | 1.877 | .084 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Runabout with Luggage 2 seat hybrid | Equal variances assumed | .790 | .374 | 1.053 | 998 | .293 | .124 | .118 | -.107 | .356 |
| Equal variances not assumed |  |  | 1.053 | 996.997 | .293 | .124 | .118 | -.107 | .356 |

17-R

| **Group Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Marital status | | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Runabout with Luggage 2 seat hybrid | dimension1 | Unmarried | 487 | 3.53 | 1.705 | .077 |
| Married | 513 | 4.03 | 1.979 | .087 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Runabout with Luggage 2 seat hybrid | Equal variances assumed | 15.025 | .000 | -4.231 | 998 | .000 | -.495 | .117 | -.725 | -.266 |
| Equal variances not assumed |  |  | -4.247 | 988.825 | .000 | -.495 | .117 | -.724 | -.267 |

17-S

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Economy 4 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 851.979 | 4 | 212.995 | 83.900 | .000 |
| Within Groups | 2525.996 | 995 | 2.539 |  |  |
| Total | 3377.975 | 999 |  |  |  |

| **Preference: Economy 4 seat hybrid** | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | | | | | | | | |
| Age | | N | | Subset for alpha = 0.05 | | | | | | | | |
| 1 | | 2 | | 3 | | 4 | | 5 |
| 21 | | 121 | | 1.82 | |  | |  | |  | |  |
| 30 | | 174 | |  | | 2.48 | |  | |  | |  |
| 42 | | 256 | |  | |  | | 3.55 | |  | |  |
| 70 | | 210 | |  | |  | |  | | 4.00 | |  |
| 57 | | 239 | |  | |  | |  | |  | | 4.58 |
| Sig. | |  | | 1.000 | | 1.000 | | 1.000 | | 1.000 | | 1.000 |
| Means for groups in homogeneous subsets are displayed. a. Uses Harmonic Mean Sample Size = 186.124. b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | | | | | | | |
| 17-T   | **ANOVA** | | | | | | | --- | --- | --- | --- | --- | --- | | Preference: Economy 4 seat hybrid | | | | | | |  | Sum of Squares | df | Mean Square | F | Sig. | | Between Groups | 815.391 | 4 | 203.848 | 79.150 | .000 | | Within Groups | 2562.584 | 995 | 2.575 |  |  | | Total | 3377.975 | 999 |  |  |  |  | **Preference: Economy 4 seat hybrid** | | | | | | | --- | --- | --- | --- | --- | --- | | Duncana,b | | | | | | | Level of education | | N | Subset for alpha = 0.05 | | | | 1 | 2 | 3 | | dimension1 | 12 | 298 | 2.66 |  |  | | 9 | 194 | 2.70 |  |  | | 14 | 214 |  | 3.62 |  | | 18 | 72 |  |  | 4.60 | | 16 | 222 |  |  | 4.83 | | Sig. |  | .825 | 1.000 | .199 | | Means for groups in homogeneous subsets are displayed. | | | | | | | a. Uses Harmonic Mean Sample Size = 158.345. | | | | | | | b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | |   17-U   | **ANOVA** | | | | | | | --- | --- | --- | --- | --- | --- | | Preference: Economy 4 seat hybrid | | | | | | |  | Sum of Squares | df | Mean Square | F | Sig. | | Between Groups | 1073.743 | 4 | 268.436 | 115.914 | .000 | | Within Groups | 2304.232 | 995 | 2.316 |  |  | | Total | 3377.975 | 999 |  |  |  |  | **Preference: Economy 4 seat hybrid** | | | | | | | --- | --- | --- | --- | --- | --- | | Duncana,b | | | | | | | Income level | | N | Subset for alpha = 0.05 | | | | 1 | 2 | 3 | | dimension1 | 20.0 | 256 | 2.68 |  |  | | 37.5 | 343 | 2.86 |  |  | | 62.5 | 194 |  | 3.64 |  | | 150.0 | 70 |  |  | 5.24 | | 100.0 | 137 |  |  | 5.50 | | Sig. |  | .317 | 1.000 | .151 | | Means for groups in homogeneous subsets are displayed. | | | | | | | a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | | b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | | | | | | | | | | | | | |
| **Preference: Economy 4 seat hybrid** | | | | | | | | | | |
| Duncana,b | | | | | | | | | | |
| Income level | | | N | | Subset for alpha = 0.05 | | | | | |
| 1 | | 2 | | 3 | |
| dimension1 | 20.0 | | 256 | | 2.68 | |  | |  | |
| 37.5 | | 343 | | 2.86 | |  | |  | |
| 62.5 | | 194 | |  | | 3.64 | |  | |
| 150.0 | | 70 | |  | |  | | 5.24 | |
| 100.0 | | 137 | |  | |  | | 5.50 | |
| Sig. | |  | | .317 | | 1.000 | | .151 | |
| Means for groups in homogeneous subsets are displayed. | | | | | | | | | | |
| a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | | | | | |

17-V

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Economy 4 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 431.344 | 4 | 107.836 | 36.413 | .000 |
| Within Groups | 2946.631 | 995 | 2.961 |  |  |
| Total | 3377.975 | 999 |  |  |  |

| **Preference: Economy 4 seat hybrid** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | |
| Size of home town or city | | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| dimension1 | 1500 | 267 | 2.54 |  |  |
| 5 | 154 |  | 3.38 |  |
| 55 | 177 |  | 3.53 |  |
| 300 | 176 |  |  | 4.06 |
| 750 | 226 |  |  | 4.24 |
| Sig. |  | 1.000 | .397 | .303 |
| Means for groups in homogeneous subsets are displayed. | | | | | |
| a. Uses Harmonic Mean Sample Size = 192.344. | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | |

17-W

| **Group Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | Gender | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Economy 4 seat hybrid | Male | 505 | 3.54 | 1.851 | .082 |
| Female | 495 | 3.45 | 1.827 | .082 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Economy 4 seat hybrid | Equal variances assumed | .649 | .421 | .757 | 998 | .449 | .088 | .116 | -.140 | .316 |
| Equal variances not assumed |  |  | .758 | 997.956 | .449 | .088 | .116 | -.140 | .316 |

17-X

| **Group Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Marital status | | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Economy 4 seat hybrid | dimension1 | Unmarried | 487 | 3.43 | 1.837 | .083 |
| Married | 513 | 3.56 | 1.841 | .081 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Economy 4 seat hybrid | Equal variances assumed | .001 | .976 | -1.069 | 998 | .285 | -.124 | .116 | -.353 | .104 |
| Equal variances not assumed |  |  | -1.069 | 995.521 | .285 | -.124 | .116 | -.353 | .104 |

17-Y

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Standard 4 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 284.940 | 4 | 71.235 | 30.091 | .000 |
| Within Groups | 2355.460 | 995 | 2.367 |  |  |
| Total | 2640.400 | 999 |  |  |  |

| **Preference: Standard 4 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Age | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| 21 | 121 | 4.16 |  |  |
| 30 | 174 | 4.30 |  |  |
| 70 | 210 |  | 4.80 |  |
| 57 | 239 |  |  | 5.34 |
| 42 | 256 |  |  | 5.56 |
| Sig. |  | .355 | 1.000 | .177 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 186.124. b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | |
|  | | | | |

17-Z

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Standard 4 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 296.525 | 4 | 74.131 | 31.470 | .000 |
| Within Groups | 2343.875 | 995 | 2.356 |  |  |
| Total | 2640.400 | 999 |  |  |  |

| **Preference: Standard 4 seat hybrid** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | |
| Level of education | | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| dimension1 | 9 | 194 | 4.08 |  |  |
| 12 | 298 |  | 4.87 |  |
| 14 | 214 |  | 4.93 |  |
| 18 | 72 |  |  | 5.61 |
| 16 | 222 |  |  | 5.68 |
| Sig. |  | 1.000 | .730 | .708 |
| Means for groups in homogeneous subsets are displayed. | | | | | |
| a. Uses Harmonic Mean Sample Size = 158.345. | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | |

17-AA

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Standard 4 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 125.811 | 4 | 31.453 | 12.446 | .000 |
| Within Groups | 2514.589 | 995 | 2.527 |  |  |
| Total | 2640.400 | 999 |  |  |  |

| **Preference: Standard 4 seat hybrid** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Duncana,b | | | | | | |
| Income level | | N | Subset for alpha = 0.05 | | | |
| 1 | 2 | 3 | 4 |
| dimension1 | 20.0 | 256 | 4.49 |  |  |  |
| 37.5 | 343 |  | 4.87 |  |  |
| 62.5 | 194 |  |  | 5.23 |  |
| 100.0 | 137 |  |  | 5.31 | 5.31 |
| 150.0 | 70 |  |  |  | 5.67 |
| Sig. |  | 1.000 | 1.000 | .657 | .053 |
| Means for groups in homogeneous subsets are displayed. | | | | | | |
| a. Uses Harmonic Mean Sample Size = 148.981. | | | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | | | |

17-BB

| **ANOVA** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preference: Standard 4 seat hybrid | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 630.828 | 4 | 157.707 | 78.086 | .000 |
| Within Groups | 2009.572 | 995 | 2.020 |  |  |
| Total | 2640.400 | 999 |  |  |  |

| **Preference: Standard 4 seat hybrid** | | | | |
| --- | --- | --- | --- | --- |
| Duncana,b | | | | |
| Size of home town or city | | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| dimension1 | 1500 | 267 | 3.64 |  |
| 5 | 154 |  | 5.42 |
| 300 | 176 |  | 5.43 |
| 55 | 177 |  | 5.44 |
| 750 | 226 |  | 5.46 |
| Sig. |  | 1.000 | .815 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 192.344. | | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | | |

17-CC

| **Group Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | Gender | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Standard 4 seat hybrid | Male | 505 | 4.82 | 1.582 | .070 |
| Female | 495 | 5.10 | 1.659 | .075 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Standard 4 seat hybrid | Equal variances assumed | 1.634 | .201 | -2.724 | 998 | .007 | -.279 | .102 | -.480 | -.078 |
| Equal variances not assumed |  |  | -2.723 | 993.539 | .007 | -.279 | .103 | -.480 | -.078 |

17-DD

| **Group Statistics** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Marital status | | N | Mean | Std. Deviation | Std. Error Mean |
| Preference: Standard 4 seat hybrid | dimension1 | Unmarried | 487 | 4.55 | 1.672 | .076 |
| Married | 513 | 5.35 | 1.481 | .065 |

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Preference: Standard 4 seat hybrid | Equal variances assumed | 9.312 | .002 | -8.006 | 998 | .000 | -.799 | .100 | -.994 | -.603 |
| Equal variances not assumed |  |  | -7.981 | 969.157 | .000 | -.799 | .100 | -.995 | -.602 |

19-A

| **Model Summary** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| dimension0 | 1 | .443a | .196 | .195 | 1.564 |
| 2 | .584b | .341 | .339 | 1.417 |
| 3 | .676c | .457 | .456 | 1.287 |
| 4 | .701d | .492 | .490 | 1.246 |
| 5 | .742e | .551 | .549 | 1.172 |
| 6 | .769f | .592 | .590 | 1.117 |
| 7 | .777g | .603 | .600 | 1.103 |
| a. Predictors: (Constant), Marital status | | | | | |
| b. Predictors: (Constant), Marital status, Income level | | | | | |
| c. Predictors: (Constant), Marital status, Income level, Size of home town or city | | | | | |
| d. Predictors: (Constant), Marital status, Income level, Size of home town or city, Age | | | | | |
| e. Predictors: (Constant), Marital status, Income level, Size of home town or city, Age , Number of people in household | | | | | |
| f. Predictors: (Constant), Marital status, Income level, Size of home town or city, Age , Number of people in household, Level of education | | | | | |
| g. Predictors: (Constant), Marital status, Income level, Size of home town or city, Age , Number of people in household, Level of education, Gender | | | | | |

19-B

| **Coefficientsa** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 4.088 | .071 |  | 57.671 | .000 |
| Marital status | -1.544 | .099 | -.443 | -15.604 | .000 |
| 2 | (Constant) | 5.046 | .091 |  | 55.324 | .000 |
| Marital status | -1.491 | .090 | -.428 | -16.618 | .000 |
| Income level | -.018 | .001 | -.381 | -14.789 | .000 |
| 3 | (Constant) | 4.335 | .096 |  | 45.159 | .000 |
| Marital status | -1.407 | .082 | -.403 | -17.222 | .000 |
| Income level | -.018 | .001 | -.372 | -15.922 | .000 |
| Size of home town or city | .001 | .000 | .342 | 14.622 | .000 |
| 4 | (Constant) | 5.138 | .135 |  | 38.082 | .000 |
| Marital status | -1.408 | .079 | -.404 | -17.800 | .000 |
| Income level | -.016 | .001 | -.328 | -14.081 | .000 |
| Size of home town or city | .001 | .000 | .357 | 15.682 | .000 |
| Age | -.020 | .002 | -.191 | -8.208 | .000 |
| 5 | (Constant) | 6.256 | .160 |  | 39.083 | .000 |
| Marital status | -.630 | .101 | -.181 | -6.250 | .000 |
| Income level | -.016 | .001 | -.327 | -14.960 | .000 |
| Size of home town or city | .001 | .000 | .354 | 16.552 | .000 |
| Age | -.032 | .003 | -.301 | -12.589 | .000 |
| Number of people in household | -.439 | .038 | -.348 | -11.456 | .000 |
| 6 | (Constant) | 8.036 | .234 |  | 34.286 | .000 |
| Marital status | -.679 | .096 | -.195 | -7.064 | .000 |
| Income level | -.013 | .001 | -.276 | -12.839 | .000 |
| Size of home town or city | .001 | .000 | .346 | 16.968 | .000 |
| Age | -.034 | .002 | -.321 | -14.043 | .000 |
| Number of people in household | -.440 | .037 | -.349 | -12.030 | .000 |
| Level of education | -.134 | .013 | -.210 | -10.005 | .000 |
| 7 | (Constant) | 8.271 | .236 |  | 35.103 | .000 |
| Marital status | -.679 | .095 | -.195 | -7.153 | .000 |
| Income level | -.013 | .001 | -.280 | -13.208 | .000 |
| Size of home town or city | .001 | .000 | .341 | 16.926 | .000 |
| Age | -.034 | .002 | -.320 | -14.141 | .000 |
| Number of people in household | -.431 | .036 | -.342 | -11.939 | .000 |
| Level of education | -.139 | .013 | -.217 | -10.465 | .000 |
| Gender | -.368 | .070 | -.106 | -5.243 | .000 |
| a. Dependent Variable: Preference: Super Cycle 1 seat hybrid | | | | | | |

19-C

| **Model Summary** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| dimension0 | 1 | .422a | .178 | .178 | 1.552 |
| 2 | .579b | .335 | .334 | 1.397 |
| 3 | .668c | .447 | .445 | 1.275 |
| 4 | .717d | .515 | .513 | 1.195 |
| 5 | .748e | .559 | .557 | 1.139 |
| 6 | .751f | .564 | .561 | 1.134 |
| 7 | .753g | .567 | .564 | 1.130 |
| a. Predictors: (Constant), Income level | | | | | |
| b. Predictors: (Constant), Income level, Size of home town or city | | | | | |
| c. Predictors: (Constant), Income level, Size of home town or city, Number of people in household | | | | | |
| d. Predictors: (Constant), Income level, Size of home town or city, Number of people in household, Age | | | | | |
| e. Predictors: (Constant), Income level, Size of home town or city, Number of people in household, Age , Level of education | | | | | |
| f. Predictors: (Constant), Income level, Size of home town or city, Number of people in household, Age , Level of education, Gasoline emissions contribute to global warming. | | | | | |
| g. Predictors: (Constant), Income level, Size of home town or city, Number of people in household, Age , Level of education, Gasoline emissions contribute to global warming., Marital status | | | | | |

19-D

| **Coefficientsa** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 5.339 | .088 |  | 60.764 | .000 |
| Income level | -.020 | .001 | -.422 | -14.724 | .000 |
| 2 | (Constant) | 4.578 | .093 |  | 49.053 | .000 |
| Income level | -.019 | .001 | -.412 | -15.931 | .000 |
| Size of home town or city | .001 | .000 | .396 | 15.337 | .000 |
| 3 | (Constant) | 5.585 | .111 |  | 50.339 | .000 |
| Income level | -.020 | .001 | -.428 | -18.115 | .000 |
| Size of home town or city | .001 | .000 | .371 | 15.668 | .000 |
| Number of people in household | -.415 | .029 | -.335 | -14.160 | .000 |
| 4 | (Constant) | 7.003 | .159 |  | 44.092 | .000 |
| Income level | -.017 | .001 | -.366 | -16.105 | .000 |
| Size of home town or city | .001 | .000 | .385 | 17.352 | .000 |
| Number of people in household | -.520 | .029 | -.420 | -18.019 | .000 |
| Age | -.029 | .002 | -.283 | -11.813 | .000 |
| 5 | (Constant) | 8.838 | .238 |  | 37.212 | .000 |
| Income level | -.015 | .001 | -.313 | -14.023 | .000 |
| Size of home town or city | .001 | .000 | .378 | 17.832 | .000 |
| Number of people in household | -.534 | .028 | -.431 | -19.373 | .000 |
| Age | -.032 | .002 | -.307 | -13.391 | .000 |
| Level of education | -.137 | .014 | -.218 | -10.028 | .000 |
| 6 | (Constant) | 8.873 | .237 |  | 37.496 | .000 |
| Income level | -.015 | .001 | -.311 | -13.990 | .000 |
| Size of home town or city | .001 | .000 | .375 | 17.805 | .000 |
| Number of people in household | -.533 | .027 | -.430 | -19.400 | .000 |
| Age | -.032 | .002 | -.308 | -13.495 | .000 |
| Level of education | -.120 | .015 | -.190 | -8.162 | .000 |
| Gasoline emissions contribute to global warming. | -.055 | .017 | -.073 | -3.227 | .001 |
| 7 | (Constant) | 8.942 | .237 |  | 37.679 | .000 |
| Income level | -.015 | .001 | -.313 | -14.128 | .000 |
| Size of home town or city | .001 | .000 | .378 | 17.968 | .000 |
| Number of people in household | -.599 | .037 | -.484 | -16.182 | .000 |
| Age | -.034 | .002 | -.325 | -13.764 | .000 |
| Level of education | -.118 | .015 | -.188 | -8.088 | .000 |
| Gasoline emissions contribute to global warming. | -.054 | .017 | -.071 | -3.139 | .002 |
| Marital status | .261 | .097 | .076 | 2.677 | .008 |
| a. Dependent Variable: Preference: Runabout Sport 2 seat hybrid | | | | | | |

19-E

| **Model Summary** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| dimension0 | 1 | .468a | .219 | .219 | 1.650 |
| 2 | .519b | .269 | .268 | 1.597 |
| 3 | .549c | .302 | .300 | 1.562 |
| 4 | .587d | .345 | .342 | 1.513 |
| 5 | .618e | .382 | .379 | 1.471 |
| 6 | .626f | .392 | .389 | 1.459 |
| 7 | .629g | .396 | .391 | 1.456 |
| 8 | .631h | .399 | .394 | 1.453 |
| a. Predictors: (Constant), Size of home town or city | | | | | |
| b. Predictors: (Constant), Size of home town or city, Age | | | | | |
| c. Predictors: (Constant), Size of home town or city, Age , Level of education | | | | | |
| d. Predictors: (Constant), Size of home town or city, Age , Level of education, Income level | | | | | |
| e. Predictors: (Constant), Size of home town or city, Age , Level of education, Income level, Marital status | | | | | |
| f. Predictors: (Constant), Size of home town or city, Age , Level of education, Income level, Marital status, Number of people in household | | | | | |
| g. Predictors: (Constant), Size of home town or city, Age , Level of education, Income level, Marital status, Number of people in household, Hybrid autos that use alternative fuels will reduce fuel emissions. | | | | | |
| h. Predictors: (Constant), Size of home town or city, Age , Level of education, Income level, Marital status, Number of people in household, Hybrid autos that use alternative fuels will reduce fuel emissions., Americans use too much gasoline. | | | | | |

19-F

| **Coefficientsa** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 2.842 | .077 |  | 36.981 | .000 |
| Size of home town or city | .001 | .000 | .468 | 16.743 | .000 |
| 2 | (Constant) | 3.994 | .158 |  | 25.242 | .000 |
| Size of home town or city | .002 | .000 | .484 | 17.818 | .000 |
| Age | -.025 | .003 | -.224 | -8.253 | .000 |
| 3 | (Constant) | 2.305 | .292 |  | 7.894 | .000 |
| Size of home town or city | .002 | .000 | .491 | 18.493 | .000 |
| Age | -.024 | .003 | -.217 | -8.159 | .000 |
| Level of education | .124 | .018 | .181 | 6.824 | .000 |
| 4 | (Constant) | 2.189 | .283 |  | 7.728 | .000 |
| Size of home town or city | .002 | .000 | .484 | 18.784 | .000 |
| Age | -.018 | .003 | -.163 | -6.146 | .000 |
| Level of education | .159 | .018 | .232 | 8.758 | .000 |
| Income level | -.011 | .001 | -.220 | -8.107 | .000 |
| 5 | (Constant) | 1.686 | .283 |  | 5.954 | .000 |
| Size of home town or city | .002 | .000 | .498 | 19.830 | .000 |
| Age | -.018 | .003 | -.162 | -6.257 | .000 |
| Level of education | .169 | .018 | .246 | 9.535 | .000 |
| Income level | -.012 | .001 | -.231 | -8.736 | .000 |
| Marital status | .718 | .094 | .192 | 7.666 | .000 |
| 6 | (Constant) | 2.195 | .306 |  | 7.170 | .000 |
| Size of home town or city | .002 | .000 | .497 | 19.947 | .000 |
| Age | -.023 | .003 | -.208 | -7.451 | .000 |
| Level of education | .169 | .018 | .246 | 9.607 | .000 |
| Income level | -.012 | .001 | -.231 | -8.801 | .000 |
| Marital status | 1.071 | .126 | .287 | 8.526 | .000 |
| Number of people in household | -.200 | .048 | -.148 | -4.176 | .000 |
| 7 | (Constant) | 2.417 | .321 |  | 7.538 | .000 |
| Size of home town or city | .002 | .000 | .494 | 19.837 | .000 |
| Age | -.023 | .003 | -.205 | -7.325 | .000 |
| Level of education | .171 | .018 | .248 | 9.726 | .000 |
| Income level | -.012 | .001 | -.231 | -8.841 | .000 |
| Marital status | 1.069 | .125 | .286 | 8.529 | .000 |
| Number of people in household | -.198 | .048 | -.146 | -4.143 | .000 |
| Hybrid autos that use alternative fuels will reduce fuel emissions. | -.051 | .023 | -.057 | -2.280 | .023 |
| 8 | (Constant) | 2.288 | .325 |  | 7.040 | .000 |
| Size of home town or city | .002 | .000 | .494 | 19.880 | .000 |
| Age | -.023 | .003 | -.207 | -7.434 | .000 |
| Level of education | .163 | .018 | .237 | 9.141 | .000 |
| Income level | -.012 | .001 | -.233 | -8.907 | .000 |
| Marital status | 1.087 | .125 | .291 | 8.671 | .000 |
| Number of people in household | -.201 | .048 | -.149 | -4.219 | .000 |
| Hybrid autos that use alternative fuels will reduce fuel emissions. | -.055 | .023 | -.060 | -2.419 | .016 |
| Americans use too much gasoline. | .052 | .023 | .057 | 2.248 | .025 |
| a. Dependent Variable: Preference: Runabout with Luggage 2 seat hybrid | | | | | | |

19-G

| **Model Summary** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| dimension0 | 1 | .524a | .275 | .274 | 1.566 |
| 2 | .618b | .383 | .381 | 1.446 |
| 3 | .714c | .509 | .508 | 1.290 |
| 4 | .744d | .554 | .552 | 1.231 |
| 5 | .753e | .567 | .565 | 1.212 |
| a. Predictors: (Constant), Income level | | | | | |
| b. Predictors: (Constant), Income level, Level of education | | | | | |
| c. Predictors: (Constant), Income level, Level of education, Age | | | | | |
| d. Predictors: (Constant), Income level, Level of education, Age , Size of home town or city | | | | | |
| e. Predictors: (Constant), Income level, Level of education, Age , Size of home town or city, Hybrid autos that use alternative fuels will keep gas prices down. | | | | | |

19-H

| **Coefficientsa** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 2.064 | .089 |  | 23.279 | .000 |
| Income level | .026 | .001 | .524 | 19.458 | .000 |
| 2 | (Constant) | -.726 | .227 |  | -3.199 | .001 |
| Income level | .023 | .001 | .450 | 17.635 | .000 |
| Level of education | .227 | .017 | .336 | 13.175 | .000 |
| 3 | (Constant) | -2.712 | .237 |  | -11.427 | .000 |
| Income level | .018 | .001 | .357 | 15.213 | .000 |
| Level of education | .252 | .015 | .373 | 16.290 | .000 |
| Age | .041 | .003 | .368 | 16.050 | .000 |
| 4 | (Constant) | -2.290 | .230 |  | -9.940 | .000 |
| Income level | .018 | .001 | .349 | 15.577 | .000 |
| Level of education | .247 | .015 | .365 | 16.735 | .000 |
| Age | .043 | .002 | .384 | 17.495 | .000 |
| Size of home town or city | -.001 | .000 | -.211 | -9.923 | .000 |
| 5 | (Constant) | -2.693 | .238 |  | -11.319 | .000 |
| Income level | .017 | .001 | .340 | 15.360 | .000 |
| Level of education | .240 | .015 | .354 | 16.399 | .000 |
| Age | .041 | .002 | .371 | 17.061 | .000 |
| Size of home town or city | -.001 | .000 | -.208 | -9.921 | .000 |
| Hybrid autos that use alternative fuels will keep gas prices down. | .102 | .018 | .120 | 5.641 | .000 |
| a. Dependent Variable: Preference: Economy 4 seat hybrid | | | | | | |