

Comprehensive H1 Industries Product Development Research Plan

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Abstract

Despite the variety of hybrid vehicle options available, hybrid vehicles only account for less than 3% of the cars on the road in the United States today. With gas prices on the rise, increased awareness of air pollution's impact on the environment and the availability of hybrid cars that help solve both problems, the focus of this research is why more people don't take advantage of the available hybrid-technology cars. The answers to this question will help determine the production designs, marketing strategies and ultimate success of H1 Industries' new fuel efficiency product currently in development. To discover answers to this question, focus group interviews and online questionnaire surveys will be designed and conducted and results analyzed. The working research hypotheses expect a.) research to bear out the common objections to hybrid purchases, specifically including price and limited model selection as the biggest deterrents, b.) participants to express negative stereotype associations with hybrid ownership, c.) participants to be receptive to hybrid alternatives that will save them gas and help the environment but allow them to retain the convenience and 'personality' of their existing vehicle, and d.) the biggest deterrent to the hybrid alternative product to be participants' hesitation or intimidation at the idea of modifying their personal vehicles.

Phase I:**H1 Industries Product Development Research Plan:****Analyzing Current Attitudes About Hybrid Cars**

There are currently more than 50 hybrid, electric or alternative fuel vehicles available for consumers to purchase. Despite the variety of hybrid vehicle options available, hybrid vehicles only account for less than 3% of the cars on the road in the United States today. With gas prices on the rise, increased awareness of air pollution's impact on the environment and the availability of hybrid cars that help solve both problems, the focus of this research is why more people don't take advantage of the available hybrid-technology cars. The answers to this question will help determine the production designs, marketing strategies and ultimate success of H1 Industries' new fuel efficiency product currently in development.

Hybrid Technology Background

According to Bhunnoo, Oogarah-Hanuman and Ramsaran-Fowdar's recent study (2011),

Hybrid cars and trucks that combined an electric motor with a gasoline engine date back to the turn of the 20th century. Hybrid diesel-electric locomotives have been in operation for years, and diesel-electric buses began to appear in the 1970s. The most common is the electric hybrid, which melds a gasoline engine with an electric setup (electric motor, charging system, and a battery/storage system).

According to the United States Environmental Protection Agency (EPA, 2008), the 2008 Prius is the most fuel efficient car sold in the U.S. Since that time, the Prius has become the best-selling hybrid vehicle in the U.S. and the world.

To analyze the hybrid car market, Tanaka and Shigeta at the Nomura Research Institute (NRI) conducted an internet-based survey of 900 car owners in Japan with two categories of targets, namely owners of hybrid cars and owners of passenger cars and/or mini-cars that are not hybrid cars...observed that hybrid cars were mainly bought for their economy, quiet ride and environmental friendliness.

Consumers' satisfaction with hybrid cars was generally high and expectations of quiet operation, clean exhaust emissions, latest technology, fuel economy, preferential tax treatment, better headroom and legroom and better acceleration were being met. However, satisfaction was very low with regards to the cost of the vehicle and maintenance cost and many respondents said they would like to see the price of the vehicle and its maintenance costs go down and a wider variety of models and mini-cars in particular. The study also found that hybrid car owners were also likely to be repeat purchasers of hybrid vehicles.

Even though hybrid owners were generally satisfied with their car purchases and would become repeat customers, they reported dissatisfaction with the high cost of ownership and vehicle model choices, despite the fuel savings and environmental advantages. In general, Deal's (2010) research demonstrates the typical advantages and disadvantages associated with hybrid car ownership which include the following:

Advantages: Reduced carbon footprint; Incentives to purchase electric vehicles; Lessen dependence on foreign oil; Reduce emissions; Energy efficient. Electric motors convert 75% of the chemical energy from the batteries to power the wheels--internal combustion engines (ICEs) only convert 20% of the energy stored in gasoline; Environmentally

friendly. EVs emit no tailpipe pollutants, although the power plant producing the electricity may emit them. Electricity from nuclear-, hydro-, solar-, or wind-powered plants causes no air pollutants; Performance benefits. Electric motors provide quiet, smooth operation and stronger acceleration and require less maintenance than ICEs; Reduced energy dependence from foreign sources. Electricity is a domestic energy source

Disadvantages: Driving range. Most EVs can only go about 100-200 miles before recharging--gasoline vehicles can go over 300 miles before refueling; Recharge time. Fully recharging the battery pack can take four to eight hours. Even a "quick charge" to 80% capacity can take 30 minutes; Battery cost: The large battery packs are expensive and may need to be replaced one or more times; Bulk and weight: Battery packs are heavy and take up considerable vehicle space.

However, with such a low percentage of hybrids in the market so far, the object of this research is to discover additional deterrents preventing more consumers from buying hybrid vehicles and apply those findings to a competitive technology product. According to current research and industry opinions, the most prevalent theory on the recent decline of hybrid purchases is the higher hybrid costs compared to fuel-efficient non-hybrid vehicles. According to Woodyard's (2011) recent USA TODAY article:

Sales of high-mileage, high-value conventional compacts such as the Hyundai Elantra, Ford Focus and Chevrolet Cruze are hot, while hybrid sales have stagnated. The hybrid share of U.S. auto sales peaked at 3.6% in July 2009, Edmunds.com says. Last month, it was 1.6%, depressed also by production cuts for some models due to the Japan disaster, but not enough to account for all the drop.

The new conventionally powered cars use various strategies to boost gas mileage to near hybrid levels without the batteries and electric motors that can add \$6,000 on average to a vehicle's cost, according to J.D. Power and Associates.

"Even with the fuel savings, it doesn't make sense to buy a hybrid" for many buyers, says Power senior manager Mike Omotoso. "This year, we had \$4 gas (in many cities), but we saw the introduction of compacts that get 40 mpg. All of these cars are considerably cheaper than hybrids."

Mission Statement

The mission of H1 Industries is to provide an economical alternative to existing hybrid technology and make it available to anyone who wants better fuel efficiency, less negative impact on the environment and increased performance from their vehicles.

We will empower all drivers with better access to fuel economy technology regardless of the vehicle they drive with a converter that makes every single car more efficient. Our philosophy is that human ingenuity can conquer all; we cannot afford to settle for status quo in preserving our environment and reducing fossil fuel dependency and we are committed to bringing this innovation to the world. We believe all drivers are entitled to better fuel economy options and that it's our collective responsibility to care for our world.

We oppose organizations that prevent the innovation of fuel economy products in order to perpetuate and profit from fossil fuel dependency and we will speak boldly against them to set the proper example for the world. We believe in the greater good and that it will prevail. We commit to being a strong contributor to that greater good.

Essential to our commitment to the greater good is our commitment to charitable contributions. We pledge to donate ten percent of all profits indefinitely to worthwhile and reputable charities that continue to make this world a better place.

Vision Statement

H1 Industries envisions our hybrid technology in every car, creating a better world for us all. The vision of H1 Industries is to make our alternative hybrid technology available to everyone, everywhere and adaptable to any car for the benefit of the environment and all humankind. Our legacy will be innovation, good works and environmental responsibility.

Situation Analysis

Problem Statement

H1 Industries is a budding company developing a fuel converter to rival the fuel efficiency and technology of existing hybrid cars. Before they can feel confident launching their new product, however, they need to know why more drivers do not opt for the available hybrid models that would deliver better fuel efficiency in order to understand if their product solves the existing consumers' problems or if there are others they haven't considered so they can modify product design if necessary and tailor their marketing appropriately following initial production.

'SWOT' Analysis

Strengths:

- No direct competitors/Unique product
- The element of surprise/'buzz'

Weaknesses:

- Hybrid cars already established market share
- Competition and reputation (good and bad) to overcome

Opportunities:

- Easy-to-explain benefits/technology because hybrids already bridge knowledge gap

Threats:

- New company; limited experience/start-up budget

- Possibility of ‘Big Oil’ buy-out or sabotage
- Existing negative attitudes about hybrid technology to overcome

Research Hypotheses

1. We expect research to bear out the common objections to hybrid purchases expressed in the Historical Background section, specifically including price and limited model selection as the biggest deterrents.

2. We expect research participants to express negative stereotype associations with hybrid ownership and use terms such as ‘tree-hugger’ or ‘hippie’ etc. and that those perceptions are substantial deterrents to buying hybrids.

3. We expect participants to be receptive to hybrid alternatives that will save them gas and help the environment but allow them to retain the convenience and ‘personality’ of their existing vehicle.

4. We expect the biggest deterrent to the hybrid alternative product to be participants’ hesitation or intimidation at the idea of modifying their personal vehicles.

General Research Objectives

- To discover full spectrum of deterrents preventing more consumers from buying hybrids
- To learn how to apply research findings to a competitive product’s development
- To know how to best market the competitive hybrid technology product

Research Plans

Focus Group

One-on-one, face-to-face interviews will be uniquely valuable to this research in order to collect potential additional research topics, gauge emotional responses to interview questions and follow-up for more in-depth answers than a survey can provide.

Focus Group Objectives.

- To reveal participants' ideas about existing hybrid cars, including their perceptions of demographics associated with hybrid cars and other associated stereotypes of current hybrid owners.
- To learn participants' interest level in converting their existing cars to hybrid technology and motives behind their choice, including financial, environmental and other factors.
- To discover previously unknown objections to hybrid car ownership.

Participants. Since personal interviews are time-consuming but often yield very valuable results, participant selection is of the utmost importance. For this research, five to ten participants will be selected from as wide a demographic, psychographic and sociographic group as possible especially including a mix of participants with different genders, ages, mechanical-aptitudes, education levels and incomes.

Setting. Interviews will be conducted one-on-one in a private office or over the phone so there are limited distractions.

Procedures. Personal interviews will be scheduled with volunteer participants at a time of their choosing. The moderator will have a list of a few broad, open-ended questions, asked one at a time which will be explored as much as possible by the moderator's use of active listening. The interview will be audio recorded and the moderator will take brief notes of ideas to further explore after the pre-determined questions are answered.

Questions. The following five broad, open-ended questions will be asked of each participant:

1. What are your views on the environment and your impact on it?
2. What are your opinions of hybrid cars?
3. What do you think of converting your current car into a hybrid if that were possible?
4. What is your comfort level with making mechanical changes to your car?
5. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you?

The moderator will take notes of potential follow-up questions to ask at the end of the interview or for possible future research.

Means of recording answers. A digital audio recorder will be used to record the interview and transcribed to further analyze.

Avoiding Moderator Bias. To avoid moderator bias, the interview will include a predetermined set of questions only, with follow-up questions consisting only of requests to expound further upon their previous comments. Active listening will be employed to be sure they are confident and accurate in their responses.

Analytical Methods. To analyze the results of the interviews, the moderator will assess the transcription for recurrent themes and new insights.

Survey

This anonymous survey will allow participants to feel more comfortable divulging personal or private information that they may not otherwise feel comfortable sharing such as their annual income or spending habits, their true feelings about the environment and their level of responsibility for it, or their lack of understanding of hybrid technology.

Survey Objectives.

- To reveal participants' ideas about existing hybrid cars, including their perceptions of demographics associated with hybrid cars and other associated stereotypes of current hybrid owners.
- To learn participants' interest level in converting their existing cars to hybrid technology and motives behind their choice, including financial, environmental and other factors.
- To discover previously unknown objections to hybrid car ownership.

Participants. Participants will be invited to participate via Facebook private messages so there is the broadest sampling of participants possible including people of all ages and demographics located throughout the United States.

Procedures. Survey will be created, delivered and completed online using Zoomerang to ensure accuracy, timeliness and reduced moderator bias. Invitations and instructions will be sent in private messages with the Zoomerang link so participants can complete the survey online. They will be told the number of questions on the survey to decrease the likelihood of people quitting mid-survey and only fully completed surveys will be counted in the research results.

Questionnaire Development. Will develop questions in different categories including sets of questions to measure demographics, attitudes about the economic and environmental impacts of fuel usage, and opinions regarding current hybrid cars and owners. Will employ a 4-level Likert scale whenever possible to 'force' a choice. Will reword questions positively and negatively to gauge consistency of responses for the same ideas. Will provide some open-ended questions to capture additional pertinent information they may offer that isn't presented in the survey.

Analytical Methods. Determine if similar positive/negative questions are answered consistently using a 4-level Likert scale for the responses. Score question responses to indicate numeric representation of response within each category. For example, on positively-worded questions, 'Strongly Agree' would have a score of four and 'Strongly Disagree' would have a score of one. Each category's value will be totaled to indicate their general attitude about that particular topic area. Demographics will also be used to make generalizations about specific category preferences.

Phase II:**H1 Industries Product Development and Marketing Strategy****Qualitative Research Report: One-on-One Interviews****Interview Research Plan**

One-on-one, face-to-face interviews were very valuable to this research in order to collect potential additional research topics, gauge emotional responses to interview questions and follow-up for more in-depth answers than a survey can provide.

Interview Objectives.

- To reveal participants' ideas about existing hybrid cars, including their perceptions of demographics associated with hybrid cars and other associated stereotypes of current hybrid owners.
- To learn participants' interest level in converting their existing cars to hybrid technology and motives behind their choice, including financial, environmental and other factors.
- To discover previously unknown objections to hybrid car ownership.

Participants. Since personal interviews are time-consuming but often yield very valuable results, participant selection is of the utmost importance. For this research, ten participants were selected from as wide a demographic group as possible including a mix of participants with different genders, ages, mechanical-aptitudes, education levels and incomes. An essential characteristic, however, were that participants were working outside of the home with varying commute distances.

Setting. Interviews were conducted one-on-one in a private office with limited distractions and no interruptions.

Procedures. Personal interviews were conducted with volunteer participants at a time of their convenience. The moderator had a list of six demographic/warm-up questions and six broad, open-ended questions. Questions were asked one at a time and explored as much as possible by the moderator's use of active listening and re-phrasing when necessary. The interviews were audio recorded and transcribed for analysis.

Questions. The following six demographic/warm-up and six broad, open-ended questions were asked of each participant (See Appendix A for the full interview transcripts and moderator notes):

Demographics/Warm-up Questions:

1. How old are you?
2. How many miles is your daily commute one-way?
3. What kind of vehicle do you drive?
4. Do you know gas mileage your vehicle gets?
5. Do you know ways to improve your mileage?
6. Do you do anything to improve your mileage?

Interview Questions:

1. What are your views on the environment and your impact on it?
2. What are your opinions of hybrid cars?
3. Do you have any reason you would not buy a hybrid car?
4. What do you think of converting your current car into a hybrid if that were possible?
5. What is your comfort level with making mechanical changes to your car?
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

Means of recording answers. A digital audio recorder was used to record the interview and the audio clips were transcribed to analyze following the interviews.

Avoiding Moderator Bias. To avoid moderator bias, the interview included a predetermined set of questions only, with follow-up questions consisting only of requests to

expound further upon their previous comments or to rephrase a question. Neutral and positive body language was employed to encourage responses and increase participant confidence.

Active listening was also employed to be sure they are confident and accurate in their responses.

Analytical Methods. To analyze the results of the interviews, the moderator assessed the transcript for recurrent themes and new insights. Specifically, participant responses were tallied for or against each of five hypotheses (see Appendix B for full analysis document) in the following manner to get a percentage of participants for or against that hypothesis:

Hybrid Price Objection:

April: 1	Aaron: 0	Hailey: 1	Emily: 0	Kevin: 0
Courtne: 1	Alma: 1	Brandon: 1	Nathan: 0	Steve: 1

Impressions of each participant, including their estimated position on the Diffusion of Innovations scale, are also noted at the bottom of each interview transcription for further consideration.

Interview Findings

The interview questions were designed to gauge participants' views on the environment, hybrid cars and how accessible they may feel they are.

What are your views on the environment and your impact on it?

This question was designed to measure their interest in the environment and consider possible improvements in their behavior. I expected most people to be fairly ambivalent or overwhelmed by the enormity of the subject and found that to be generally true among this group of participants. In theory, they care about the environment but in practice, they have higher priorities. This question was also designed to transition the conversation into discussing hybrids.

What are your opinions of hybrid cars?

This question was designed to elicit responses to our first hypothesis which stated that we expected common objections to hybrids to include price and limited model selection as the biggest deterrent. While we did hear these objections, they were much less prevalent than expected with only six of ten participants expressing price objections as their primary deterrents to buying a hybrid and only two of ten participants expressing limited model selection as a purchase deterrent. Both of these values are significantly less than expected.

Do you have any reason you would not buy a hybrid car?

This question was designed to re-test the first hypothesis, as well as giving additional opportunity to test the second hypothesis which expected participants to cite negative stereotypes as part of their objections to buying hybrid cars. However, not one participant made any negative stereotyping comments, disproving our second hypothesis in this initial research.

What do you think of converting your current car into a hybrid if that were possible?

This question was designed to test our third hypothesis which expects participants to be receptive to hybrid alternatives that will save them gas and help the environment but allow them to retain the convenience and ‘personality’ of their existing vehicle. The responses to this question largely supported this hypothesis with eight of ten people being very receptive to converting their existing cars into hybrids, which was exactly as we expected and is typical of the Diffusion of Innovations.

What is your comfort level with making mechanical changes to your car?

This question was designed to test our fourth hypothesis which states that the biggest deterrent to the hybrid alternative product would be participants’ hesitation or intimidation at the idea of modifying their personal vehicles. Participants’ responses to this question completely

disproved this hypothesis to this point with none of the participants expressing hesitation or intimidation at the idea of modifying their personal vehicles, as long as a mechanic made the modifications.

If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

This question was designed to determine how much more people are willing to spend on hybrid technology to get an idea of how far out of their price range people feel the current hybrids are, to once again our first and primary hypothesis that price is the biggest deterrent to buying hybrids and measure how much disparity there really is for people who want to buy a hybrid but don't. The prices suggested by most participants were much higher than expected with the majority of those offering prices suggesting a retail price of \$1,000 to \$3,000 and one saying anything less than \$10,000 would be worth buying.

The most surprising findings were that two of the ten participants expressed concerns over safety and reliability and only two mentioned unattractive designs as reasons they would not buy. I expected many to mention unattractive designs as reasons they would not buy so I was surprised that aesthetics were not higher on participants' list of priorities.

Conclusions and Recommendations for Further Research

Our research confirms that the common objections of price and limited model selection are indeed significant deterrents to hybrid purchases but that the expected objections to aesthetics were not as much of a concern to potential buyers as the financial costs and benefits.

Our research found no social stigma from this participant group, suggesting negative stereotypes of hybrid owners are not a deterrent to purchasing hybrids. This finding, however,

requires more extensive research with a larger sample group to officially deny negative social associations with hybrids and disconfirm our hypothesis.

Our research found that the majority of participants are receptive to hybrid alternatives for the financial advantages.

Our research indicated that participants are not deterred from the hybrid alternative product due to hesitation or intimidation of modifying their personal vehicles but that they don't feel comfortable making the mechanical changes themselves and would rely on a mechanic.

Further research will be conducted to confirm and further explore these findings, especially including the social perception which was significantly different from the initial hypothesis. Additionally, commute distances and hybrid alternative price points will be explored to determine their respective impacts on willingness to convert an existing car to a hybrid technology. Finally, the safety and reliability concerns that were raised will be explored further as those were unexpected findings. In all, these results have proven very valuable to develop and refine a more thorough secondary research method and to help guide product development.

Phase III:**H1 Industries Product Development and Marketing Strategy****Quantitative Research Report: Online Surveys****Survey Research Plan**

This anonymous survey allowed participants to feel more comfortable divulging personal or private information that they may not otherwise feel comfortable sharing such as their annual income or spending habits, their true feelings about the environment and their level of responsibility for it, or their lack of understanding of hybrid technology. Delivering this survey online allowed participants to complete the survey when it was convenient for them and in a convenient manner.

Survey Objectives.

- To reveal participants' ideas about existing hybrid cars, including their perceptions of demographics associated with hybrid cars and other associated stereotypes of current hybrid owners.
- To learn participants' interest level in converting their existing cars to hybrid technology and motives behind their choice, including financial, environmental and other factors.
- To discover previously unknown objections to hybrid car ownership.

Participants. For this research, 100 participants were solicited via Facebook and email from as wide a demographic group as possible including participants with different genders, ages, mechanical-aptitudes, education levels, geographic locations and incomes.

Setting. Surveys were solicited and completed online using Zoomerang.

Procedures. Based on previous interview research findings, a 12-question survey was designed and built using Zoomerang.com's survey system, including receiving a survey link to distribute to participants. Survey participants were solicited via Facebook wall posting requests and event invitations, and email requests to friends and family. The link to the online survey was included with each invitation to participate and the Zoomerang system allows only one survey to be taken per person so there are no duplicates. Once 100 surveys were taken, a results report was generated by Zoomerang for further analysis.

Questions. The following 12 questions were asked in this survey. (See Appendix C for a Sample Survey as it appeared online to participants):

1. Please indicate your gender.

- Male
- Female

2. Please select the category that includes your age.

- 17 or younger
- 18-24
- 35-44
- 45-54
- 55-64
- 65 or older

3. How many miles is your daily commute EACH WAY? _____

4. What type of vehicle do you drive most?

- Compact/small car
- Medium/large car

- Luxury car
- Small Sport Utility Vehicle (SUV)
- Full-size Sport Utility Vehicle (SUV)
- 2-wheel drive truck
- 4-wheel drive truck
- other

5. What is the gas mileage of your vehicle? (mpg) _____

6. How much money do you spend on gas PER MONTH?

- \$0-\$25
- \$25-\$50
- \$50-\$75
- \$75-100
- \$100-\$150
- \$150-\$200
- \$200-\$300
- \$300+

7. What are the reasons you WOULD buy a hybrid? (check all that apply)

- Gas savings
- Better for the environment
- Less dependency on fossil fuels
- Personal independence by being able to recharge at home
- other

8. What are the reasons you would NOT buy a hybrid? (check all that apply)

- Initial purchase price
- Unattractive car designs
- Safety concerns
- Limited driving range

- Social stereotypes associate with hybrid ownership
- Reliability concerns
- Don't think it's better for the environment
- Interior size/configuration doesn't fit your needs
- Limited number of models to choose from
- Unfamiliar with technology
- other

9. If you could convert your car into a hybrid that got better mileage and more horsepower, how likely would you be to convert your car?

- Very likely to convert my car to hybrid
- Likely to convert my car to hybrid
- Not likely to convert my car to hybrid
- Definitely not likely to convert my car to hybrid

10. What is your comfort level with making mechanical changes to your car?

- Very comfortable
- Comfortable
- Somewhat comfortable
- Uncomfortable

11. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

- \$0 - \$500
- \$500-\$1,000
- \$1,000-\$2,000
- \$2,000-\$4,000
- \$4,000-\$7,000
- \$7,000-\$10,000

12. What is your BIGGEST complaint about hybrid cars?

- Interior size/configuration doesn't fit your needs

- Limited number of models to choose from
- Initial purchase price
- Safety concerns
- Limited driving range
- Unattractive car designs
- Social stereotypes associate with hybrid ownership
- Reliability concerns
- Don't think it's better for the environment
- Unfamiliar with technology
- Other: _____

Means of recording answers. Surveys were completed and recorded online using the Zoomerang website. Screenshots were also taken of each individual survey as a backup.

Avoiding Moderator Bias. To avoid moderator bias, the survey included a predetermined set of questions with multiple boxes available to be checked for several questions to get a participant's full range of ideas. Questions were worded neutrally or positively to avoid influencing answers and questions about negative aspects of hybrids were only asked after the opposite, positive attitudes were measured.

Analytical Methods. Each question was designed to demonstrate support for or against one or more hypothesis using Liker-scale responses or by checking multiple answers to demonstrate the respondents' full opinions. To analyze the results of the surveys, the moderator assessed the Survey Results Report to see the percentages of people in favor or against each. Please see Appendix D for the full Survey Results Report. The interpretation of those findings is provided below in 'Interview Findings.'

Interview Findings

The survey questions were designed to gauge participants' views on the environment, hybrid cars and how accessible they may feel they are. The findings are discussed and summarized below. Please see Appendix D for the full Survey Results Report. Individual survey results are available upon request.

1. Please indicate your gender.

This question was asked as a warm-up, a means to ensure a generalizeable sample group and to correlate to other responses in the future if desired. For example, with this information, you could make some correlations between gender and comfort level with mechanic changes or knowledge base. This also helps to get insights into how potential buyers of different genders might think about the product and technology, and how that might affect purchasing decisions. This sample group was comprised of 38% males and 62% female.

2. Please select the category that includes your age.

This question was asked as a warm-up, a means to ensure a generalizeable sample group and to correlate to other responses in the future if desired. For example, with this information, you could make some correlations between gender and comfort level with mechanic changes or knowledge base. This also helps to demonstrate how potential buyers of different ages might think about the product and technology. This sample was comprised of people ranging in ages from 18 to older than 65 years old.

- 14% of our sample group were 18 to 24 years old.
- 45% of our sample group were 25 to 34 years old.
- 12% of our sample group were 35 to 44 years old.
- 9% of our sample group were 45-54 years old.

- 11% of our sample group were 55 to 64 years old.
- 8% of our sample group were 65 years old or older.

While almost half of those surveyed were in the 25 to 34-year-old category, I think this is good for this particular product since this generation is likely to be the early adopters and early majority who are more willing to accept emerging technologies and tend to drive the most.

3. How many miles is your daily commute EACH WAY?

This question was designed to measure their motivation to get better gas mileage based on their need but, in retrospect, a better measure would have been “How many miles do you drive per week?” since participants may be stay-at-home moms or retired professionals who would say they have no commute but perhaps take long road-trip vacations or drive children all over the city for activities and those miles weren’t taken into account by asking only about their commute. It was also included to stimulate their thinking on the subject of driving in general and their need for better mileage. Responses ranged fairly evenly from five to 50 miles, with a few outliers that were substantially more or less.

4. What type of vehicle do you drive most?

This question was also designed to gauge the need level of participants for better mileage and to see if they were already driving fuel efficient vehicles which partially demonstrates a need and action to get better mileage or, if they drive large, inefficient vehicles, perhaps a dependency on bigger vehicles or ambivalence about gas mileage.

- 27% reported driving compact or small cars.
- 37% reported driving medium or large cars.
- 6% reported driving luxury cars.

- 14% reported driving small sport utility vehicles.
- 3% reported driving full-size sport utility vehicles.
- 4% reported driving 2-wheel drive trucks
- 3% reported driving 4-wheel drive trucks.
- 5% reported in the 'other' category and included minivans and public transportation in that answer.

This question was also designed to get participants thinking about their vehicle choices, expenses and priorities for the remaining questions.

5. What is the gas mileage of your vehicle? (mpg) This question was designed to get a sample of respondents' fuel efficiency to gauge their level of need for better efficiency. Mileage ranged from 10 miles per gallon to 50 miles per gallon, with most in the 20-30 miles per gallon range. These levels leave a lot of room for improvement, suggesting the hybrid converter would be a valuable addition.

6. How much money do you spend on gas PER MONTH?

This question was designed to gauge participants' need to fuel efficiency and to help determine an appropriate price point for the hybrid converter currently in development.

- 1% reported spending \$0-\$25 on gas per month.
- 11% reported spending \$25-\$50 on gas per month.
- 9% reported spending \$50-\$75 on gas per month.
- 11% reported spending \$75-\$100 on gas per month.
- 29% reported spending \$100-\$150 on gas per month.
- 21% reported spending \$150-\$200 on gas per month.
- 10% reported spending \$200-\$300 on gas per month.
- 7% reported spending \$300+ on gas per month.

Based on this data, if the converter provided 30% better gas mileage, for those spending \$100-\$150 per month on gas (29% of respondents) would save \$400-\$600 over the first year, suggesting that as a reasonable retail price.

7. What are the reasons you WOULD buy a hybrid? (check all that apply)

This question was designed to provide an opportunity to voice all motivations to buy a hybrid and confirm our third hypothesis which expects participant biggest motivation to be gas savings and, therefore, be receptive to the hybrid converter. In this case:

- ‘Gas savings’ got 86 votes
- ‘Better for the environment’ got 53 votes
- ‘Less dependency on fossil fuels’ 35 votes
- ‘Personal independence by being able to recharge at home’ got 28 votes
- ‘other’ got 9 votes and included responses such as: “Not interested/Wouldn’t buy, etc.,” “Less dependency on FOREIGN oil,” “Have a nifty look” and “already own a hybrid”

8. What are the reasons you would NOT buy a hybrid? (check all that apply)

This question was designed to distinguish why people are not interested in existing hybrid technology to be able to overcome potential objections during the hybrid converter product development. These responses were ‘check all that apply’ in order to get candid responses, including an open field for additional comments. Our initial hypothesis expected purchase price to be the biggest deterrent and these figures confirm that hypothesis. The fill-in field responses are very valuable to investigate in follow-up research:

- ‘Initial purchase price’ got 66 votes
- ‘Unattractive car designs’ got 29 votes

- ‘Safety concerns’ got 22 votes
- ‘Limited driving range’ got 45 votes
- ‘Social stereotypes associate with hybrid ownership’ got 11 votes
- ‘Reliability concerns’ got 38 votes
- ‘Don’t think it’s better for the environment’ got 10 votes
- ‘Interior size/configuration doesn’t fit your needs’ got 43 votes
- ‘Limited number of models to choose from’ got 40 votes
- ‘Unfamiliar with technology’ got 19 votes
- ‘Other’ got 16 votes and included responses such as ‘I don’t think they’re advanced enough technology yet,” “I don’t have a place to plug it in,” “don’t save as much on gas as you would think,” “It’s non-renewable energy unless you have solar power,” I doubt the life span and reliability down the road. How much s the battery to replace?” and lack of faith in ‘green technology.

9. If you could convert your car into a hybrid that got better mileage and more horsepower, how likely would you be to convert your car?

This question was designed to measure participants’ interest in the hybrid converter product in development and confirm our third hypothesis which expects people to be receptive to hybrid conversion. With 64% percent of respondents saying they were likely or very likely to convert their cars to hybrids, we feel confident in the accuracy of our third hypothesis:

- 37% of participants responded ‘Very likely to convert my car to hybrid’
- 27% of participants responded ‘Likely to convert my car to hybrid’
- 26% of participants responded ‘Not likely to convert my car to hybrid’
- 11% of participants responded ‘Definitely not likely to convert my car to hybrid’

10. What is your comfort level with making mechanical changes to your car?

- 6% of participants responded ‘Very comfortable’
- 21% of participants responded ‘Comfortable’
- 31% of participants responded ‘Somewhat comfortable’

- 42% of participants responded 'Uncomfortable'

11. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

- 24% of participants responded '\$0 - \$500'
- 22% of participants responded '\$500-\$1,000'
- 26% of participants responded '\$1,000-\$2,000'
- 18% of participants responded '\$2,000-\$4,000'
- 7% of participants responded '\$4,000-\$7,000'
- 3% of participants responded '\$7,000-\$10,000'

While most people expressed high purchase price as the biggest deterrent to buying a hybrid, they expressed remarkably higher price points than expected for the after-market converter. This tells us that there is a high perceived value for hybrid technology and the hybrid converter in development. So, if a price were set at \$500, that would be low enough that the majority of people would save that much in gas in one year and it would seem like a very attainable, affordable price for almost everyone.

12. What is your BIGGEST complaint about hybrid cars?

Among other things, this question was designed to pinpoint the biggest deterrent to buying existing hybrid vehicles to be sure the hybrid converter in development solves the problem. This research confirms our initial hypothesis, which expects participants to name high purchase price as the biggest deterrent to buying existing hybrid cars, with 36% of participants citing that as their primary reason not to buy hybrids:

- 10% of participants responded 'Interior size/configuration doesn't fit your needs'
- 6% of participants responded 'Limited number of models to choose from'
- 36% of participants responded 'Initial purchase price'

- 4% of participants responded 'Safety concerns'
- 8% of participants responded 'Limited driving range'
- 4% of participants responded 'Unattractive car designs'
- 3% of participants responded 'Social stereotypes associate with hybrid ownership'
- 8% of participants responded 'Reliability concerns'
- 6% of participants responded 'Don't think it's better for the environment'
- 5% of participants responded 'Unfamiliar with technology'
- 9% of participants responded 'Other'

Previous research revealed concerns over safety or reliability of hybrids, which was further researched in this survey. With only 8% of participants choosing 'Reliability concerns' as their primary deterrent to buying a hybrid and only 4% of participants choosing 'Safety concerns' as their primary deterrent to buying a hybrid, this concern has proven minimal among the general population and not a concern for product development and marketing.

The fact that 'Limited number of models to choose from,' 'Unattractive car designs' and 'Interior size/configuration doesn't fit your needs' were not more prevalent as primary deterrents was surprising. I expected purchase price to be the biggest deterrent but be followed closely by these other factors.

Conclusions and Recommendations for Further Research

Our research confirms that the common objection of price is the biggest deterrent to hybrid purchases, in accordance with our first hypothesis. However, the number of models and car design were not nearly as deterring to participants as expected.

Our research found very little social stigma regarding hybrid ownership from this participant group, suggesting negative stereotypes of hybrid owners are not a deterrent to

purchasing hybrids. In fact, only 3% of participants responded ‘Social stereotypes associate with hybrid ownership’ as their primary deterrent to buying a hybrid. This finding effectively disconfirms our second hypothesis which expected social stereotyping to be a significant deterrent to hybrid purchases..

Our research found that the majority of participants (64%) are receptive to hybrid alternatives for the financial advantages, effectively confirming our third hypothesis which expects participants to be receptive to hybrid alternatives that will save them gas and help the environment but allow them to retain the convenience and ‘personality’ of their existing vehicle.

Our research indicated that participants are not deterred from the hybrid alternative product due to hesitation or intimidation of modifying their personal vehicles but that they don’t feel comfortable making the mechanical changes themselves and would rely on a mechanic with only 27% saying they are ‘Comfortable’ or ‘Very Comfortable’ with making mechanical changes to their vehicles.

This research yielded invaluable information to further support or disprove our hypotheses regarding hybrid ownership. The most enlightening findings were that: a.) Some participants didn’t believe hybrid technology was better for the environment. b.) One participant mentioned not having a place to plug in a hybrid as a deterrent to purchasing. c.) One participant said “It’s non-renewable energy” as a reason not to buy a hybrid.

Further research will be conducted to explore these three points to be sure the hybrid converter solves their objections. This research has proven very valuable to understand consumer perceptions of hybrids to help guide product development and marketing for a hybrid converter.

Phase IV:**H1 Industries Product Development and Marketing Strategy****Comprehensive Research Report****Summary of Research**

Through initial publication research, one-on-one interviews and an online survey, we were able to confirm three of our four hypotheses. The research hypotheses were as follows:

1. We expect research to bear out the common objections to hybrid purchases expressed in the Historical Background section, specifically including price and limited model selection as the biggest deterrents.

2. We expect research participants to express negative stereotype associations with hybrid ownership and use terms such as ‘tree-hugger’ or ‘hippie’ etc. and that those perceptions are substantial deterrents to buying hybrids.

3. We expect participants to be receptive to hybrid alternatives that will save them gas and help the environment but allow them to retain the convenience and ‘personality’ of their existing vehicle.

4. We expect the biggest deterrent to the hybrid alternative product to be participants’ hesitation or intimidation at the idea of modifying their personal vehicles.

Our first and third hypotheses were confirmed, determining that the common objections of price and model selection were the biggest deterrents to buying hybrids and that participants are receptive to a hybrid converter that would save them money long-term through better fuel efficiency.

Our second and fourth hypotheses were disproven and we now know that negative stereotype associations with hybrid ownership and hesitation to modify one's vehicle are not deterrents to buying or converting your car into a hybrid.

All of these findings are very valuable to future marketing efforts.

We also explored concepts related to product development aspects and found that regardless of how easy our converter installation process is, most people would not feel comfortable installing it themselves and would rely on a mechanic, which enables product developers to focus more on the hybrid technology and limit their work on making the install as simple as possible.

Our research also indicated an appropriate purchase price, based on their potential average gas savings, current gas spending and their value-projections of what this type of product would be worth to them. Research revealed a much higher price point than expected, which helps us to market the product as a bargain and highly accessible.

Validity of Research

Because this data was collected from a large sample group (10 interviews and 100 surveys), we believe it to be a valid measure of people's opinions of hybrids and other factors surrounding hybrid ownership. Since the interviews and surveys take minimal time to complete and can be completed any time, time is also not a factor in the validity of this research. The survey was valid because we got a wide variety of responses distributed fairly evenly across the possible choices, except for money-related questions, which we expected. All participants gave similar responses, giving further credibility to the sample group and questions asked.

Most importantly, each of the questions three through twelve were designed to correlate with at least one hypothesis. The questions were clear and provided answers directly related to our hypotheses. Finally, the questions were asked in an unbiased manner, re-phrasing positively and negatively but always starting with the positive and through open-ended fields where participants could write their own answers. By having open-ended questions, we ensured that any ideas not already represented in our multiple choice areas could be accounted for. Since there were very few write-ins and some of the write-ins simply restated or agreed with our multiple choices, we feel confident that all the necessary choices were well represented and measured. Please see Appendix C for the full list of survey questions.

Reliability of Research

Our first test of reliability came from translating our interview questions into survey questions where they were rephrased and asked again and in different order. The findings were similar in both the interview and the survey, suggesting that this research is very reliable. For example, the interview question #9, “Do you have any reason you would not buy a hybrid car?” directly correlates with the survey question #8, “What are the reasons you would NOT buy a hybrid? (check all that apply).”

In the one-on-one interviews, none of the ten interviewees expressed negative stereotypes as a deterrent to buying hybrids and five of the interviewees expressing high purchase price as their primary deterrent, with the remaining five expressing various other reasons. In the online survey, respondents made the following selections:

- ‘Initial purchase price’ : 66 votes
- ‘Limited driving range’ : 45 votes
- ‘Interior size/configuration doesn’t fit your needs’ : 43 votes

- ‘Limited number of models to choose from’ : 40 votes
- ‘Reliability concerns’ : 38 votes
- ‘Unattractive car designs’ : 29 votes
- ‘Safety concerns’ : 22 votes
- ‘Unfamiliar with technology’ : 19 votes
- ‘Social stereotypes associate with hybrid ownership’ : 11 votes
- ‘Don’t think it’s better for the environment’ : 10 votes
- ‘Other’ got 16 votes and included responses such as ‘I don’t think they’re advanced enough technology yet,’ “I don’t have a place to plug it in,” “don’t save as much on gas as you would think,” “It’s non-renewable energy unless you have solar power,” I doubt the life span and reliability down the road. How much s the battery to replace?” and lack of faith in ‘green technology.

In both the interviews and the survey, we effectively confirmed our hypothesis of price being one of the biggest deterrents and proved our negative stereotype hypothesis wrong. This is a perfect demonstration of reliability.

Another example of good reliability is question interview #10, “What do you think of converting your current car into a hybrid if that were possible?” compared to survey question #9, “If you could convert your car into a hybrid that got better mileage and more horsepower, how likely would you be to convert your car?” The interview responses to this question largely supported this hypothesis with eight of ten people being very receptive to converting their existing cars into hybrids, which was exactly as we expected and is typical of the Diffusion of Innovations. The survey respondents also showed great interest, with 64% percent of respondents saying they were likely or very likely to convert their cars to hybrids. Both the interview and survey responses effectively and confidently confirmed our third hypothesis and further demonstrate the reliability of the questions. See Appendix A for Interview Participants,

Questions and Transcripts and Appendix B for Analysis of Responses Compared to Research Hypotheses.

Since the interviews and surveys were comprised of only a predetermined set of questions, we eliminated potential variables that would compromise reliability of our research. If administered as this research was designed, any moderator or survey could ask the exact same questions and get very similar results, proving reliability. Likewise, because the survey was designed and deployed online, it can be administered indefinitely to continue with the exact same survey and measures.

Generalizability of Research

Great attention was given to ensure that the results of this research is generalizable to the consumer base who would be most interested in our product. The first factor to ensure generalizability was the size of the sample group. To ensure generalizability, 100 participants were surveyed, versus the required ten which would not have guaranteed generalizable results. To make sure the one-on-one interview results were generalizeable, we re-tested those findings in our online survey by asking the same or similar questions and re-wording them several ways, but using a much bigger sample group and got the same results. I also included people I didn't know in my sample group and said the assignment was for me to learn how to give interviews or build effective surveys in order to minimize participant bias and desire to give 'right' answers regarding the survey topic to help me. The survey was distributed to a wide demographic via social media including people of different ages, genders, income levels, geographic locations, and so on. The first two questions asked participant's gender and age to be sure results were generalizeable. This sample group was comprised of 38% males and 62% female, ranging in ages from 18 to older than 65 years old with the largest age majority in the 25 to 34-year-old

category (45%). We feel this sample is very generalizable to our potential customers. Please see Appendix D for the Survey Results report which demonstrates the demographics and generally even spread of responses.

Conclusion

We have the utmost confidence in our research, it's validity, reliability and generalizability to our potential customers. We feel confident that should the survey be deployed to 1,000, 10,000 or 100,000 people, the percentages of their responses would be nearly identical. We also appreciate the digital implementation to be able to test this survey as widely as desired.

Further research could also explore participants' ability to own a hybrid car (where to plug it in or get alternative fuel, mechanics available to work on it, etc.), the participants' perceptions of the actual benefits of hybrids to the environment, and the concept of non-renewable energy being used to power hybrid cars.

In all, we realized that hybrid ownership or conversion is primarily a financial motivation with benefits to the environment or detriments of unattractive car designs and all other related issues being much less significant factors than expected. So, our marketing messages will be tailored to that effect: "Save Gas, Save Money, Save the Environment."

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Appendix A

Interview Participants, Questions and Transcripts

Interview Participants:

1. April Adams: 34-year-old, single female
2. Hailey Keller: 23-year-old, married female
3. Kevin Frey: 24-year-old, married male
4. Alma Smith: 31-year-old, married male
5. Aaron Stitt: 29-year-old, married male
6. Emily Younker: 25-year-old, married female
7. Courtne Erickson: 23-year-old, married female
8. Brandon Hoff: 30-year-old, married male
9. Nathan Miskin: 37-year-old, married male
10. Steve Carlson: 42-year-old, single male

Demographics/Warm-up Questions:

1. How old are you?
2. How many miles is your daily commute one-way?
3. What kind of vehicle do you drive?
4. Do you know gas mileage your vehicle gets?
5. Do you know ways to improve your mileage?
6. Do you do anything to improve your mileage?

Interview Questions:

1. What are your views on the environment and your impact on it?
2. What are your opinions of hybrid cars?
3. Do you have any reason you would not buy a hybrid car?
4. What do you think of converting your current car into a hybrid if that were possible?
5. What is your comfort level with making mechanical changes to your car?
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

#1: April Adams: Interviewed 9/6, 3pm.

Single Female

Demographics, opening questions:

1. How old are you?
34
2. How many miles is your daily commute?
50 miles round trip
3. What kind of vehicle do you drive?
An SUV
4. Do you know gas mileage your vehicle gets?
22mpg
5. Do you know ways to improve your mileage?
Yes Checking the air in my tires, keeping up on maintain on my car, not driving so fast
6. Do you do anything to improve your mileage?
Yes, I keep up on my oil changes, my maintenance, and the air pressure in my tires.

Interview Questions:

1. What are your views on the environment and your impact on it?
I'm going be dead anyways so it's really not going to matter to me so I do what I can but I don't go out of my way.
2. What are your opinions of hybrid cars?
I have no opinion, they don't make a difference to me.
3. Do you have any reason you would not buy a hybrid car?
If they cost more money, I would not buy a hybrid car.
4. What do you think of converting your current car into a hybrid if that were possible?
If I could save gas or money I would.
5. What is your comfort level with making mechanical changes to your car?
I'm comfortable with it.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
It would depend on how much money it would save me in the end.

Impressions: Environmental ambivalence, financially very conservative

****Late Majority****

\$ depends on benefit

#2: Hailey Keller: Interviewed 9/6, 3:40pm

Married female

Demographics, opening questions:

1. How old are you?
23
2. How many miles is your daily commute?
30 miles round trip
3. What kind of vehicle do you drive?
2009 Honda Civic
4. Do you know gas mileage your vehicle gets?
Between 32 and 42
5. Do you know ways to improve your mileage?
Going an even speed for long distance so when you set the cruise control for 70 so it's a consistent speed, it'll get better gas mileage.
6. Do you do anything to improve your mileage?
Not when I commute because I can't really use it but when I'm on a road trip I do.

Interview Questions:

1. What are your views on the environment and your impact on it?
I feel sorry for it and I feel sorry for us and my impact is probably small in comparison but I know I'm still impacting it because I'm driving my car everyday by myself so I'm letting all that exhaust and chemicals into the air.
2. What are your opinions of hybrid cars?
I think if you can afford them you should definitely purchase one. I can't afford one but if I could it would be a good investment I think cause those new Leaf's get like 60 miles to the gallon so if you can afford it, go for it.
3. Do you have any reason you would not buy a hybrid car?
Price. Price is probably the only thing.
4. What do you think of converting your current car into a hybrid if that were possible?
No, I wouldn't do that. Just because I don't know how, I don't know the process. Maybe I need to be more educated on the process of converting a normal car into a hybrid car. I guess I don't know what that would be like.
Okay, so if you could take it into the shop and it would come out a hybrid would you want to do that, and everything else remains the same, except it's a hybrid?
Yeah, definitely if it's reasonable, like if it's a thousand dollars or something and I in the long run would get more miles per gallon, yeah, I think it'd be a good idea.
5. What is your comfort level with making mechanical changes to your car?
If it needs it, I'm comfortable with it. if it doesn't need it, I don't want to have to do it.
Would you do that yourself or have a mechanic do it?
Mechanic.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
Um, probably at least \$5,000, maybe less, maybe \$3,000. I don't know, what do you mean 'worth'?
I mean what would you pay to convert your car into a hybrid?
Probably up to \$3,000 maybe because I bought my car for \$15,000. Even \$18,000 for a

hybrid is really good because they're usually between 20 and upwards to 60 so if I could do it for \$3,000 then yeah, that'd be nice.

Impressions: financially conservative, interested in ways to save money and help environment.

Named a very high, unexpected price point.

****Late Majority****

\$3,000

#3: Kevin Frey: Interviewed 9/8, 3:45pm

Married male

Demographics, opening questions:

1. How old are you?
24
2. How many miles is your daily commute?
25 (one way)
3. What kind of vehicle do you drive?
Mitsubishi Galante
4. Do you know gas mileage your vehicle gets?
27 mpg
5. Do you know ways to improve your mileage?
Uh yeah, if I didn't drive like I did, it'd probably be a little better. How so? if I drove like an old man it'd probably get better.
Meaning...?
Not speeding, not passing all over the place
6. Do you do anything to improve your mileage?
I clean out my fuel injectors every once in a while, make sure my air filter is replaced but I usually don't worry about it because I spend so much time driving anyway and 27's not bad.

Interview Questions:

1. What are your views on the environment and your impact on it?
I don't know what to believe. I've been lied to and not lied to. The media goes back and forth so I don't know.
2. What are your opinions of hybrid cars?
They look ridiculous. Horribly ridiculous. They get good gas mileage but they look ridiculous so I'd never buy one.
3. Do you have any reason you would not buy a hybrid car?
They look ridiculous. If they looked better I'd buy one.
4. What do you think of converting your current car into a hybrid if that were possible?
My car is a piece of crap, I wouldn't want to take the effort.
Let's say a regular car that you would like the looks of?
If it would significantly increase the gas mileage, then yes but if it's only like 5 miles to the gallon more, then I probably wouldn't.
So what would be significant enough?
10 or more. 10 miles per gallon better.
5. What is your comfort level with making mechanical changes to your car?
Anything minor, I'll do. Anything major I'll just take to a mechanic.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
I don't know, I'd have to shop around.
Okay, so you mentioned the 10 mpg more, if you could magically convert it, what would that be worth? How much would you pay to be able to get 10 miles more per gallon forever?
I don't know. If it's forever, then that's a really good deal because I only have to pay it that one time but if it's on the car I get and I only have it for a few years and I've had to

pay \$1,000 for the upgrade over that much time, then the upgrade doesn't justify the cost. So let's say you could take this converter with you to the next car? That would be pretty cool. That would make the price a lot better. I'd be willing to pay a lot more for it. Do you have any idea how much? Maybe as much as \$500.

Impressions: dislikes commute, needs data, dislikes look of hybrids, comfortable with mechanics

Early majority

\$500-1000

#4: Alma Smith: Interviewed 9/8, 3:55pm

Married male

Demographics, opening questions:

1. How old are you?
31
2. How many miles is your daily commute?
50 miles round trip
3. What kind of vehicle do you drive?
Nissan exterra
4. Do you know gas mileage your vehicle gets?
18 mpg
5. Do you know ways to improve your mileage?
short of buying a new car? No.
6. Do you do anything to improve your mileage?
no. I get tune-ups and all that kind of stuff but other than that, no.

Interview Questions:

1. What are your views on the environment and your impact on it?
I think it's important to take care of the environment. My opinion is that we as humans have a responsibility to take care of the environment and I think humans do have a big impact as a result of needing to take care of it.
2. What are your opinions of hybrid cars?
I think they're good. I think from my understanding the jury is still out as far as their overall footprint impact between batteries and creating batteries and disposing of the batteries when they've served their life but I think it's a good way to go if you can.
3. Do you have any reason you would not buy a hybrid car?
The cost and also performance. I'm not sure, I'd have to see how they perform versus other cars
4. What do you think of converting your current car into a hybrid if that were possible?
I don't think I would. I mean, my car is a little older so even if I could, I don't know that the lifespan of the car would be worth the trouble of doing it.
5. What is your comfort level with making mechanical changes to your car?
Low. I don't do much to my car.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
It would depend on how much time I figure my car has left.
Okay, supposing you could take this converter with you to the next car so it's a lifetime converter?
I don't know, a couple thousand dollars probably.

Impressions: Interested for eco responsibility and financial gain; need hard data to appreciate benefits enough to take risk

****Late majority****

a couple thousand dollars

#5: Aaron Stitt: Interviewed 9/8, 4:05pm

Married male

Demographics, opening questions:

1. How old are you?
29
2. How many miles is your daily commute?
55 miles round trip
3. What kind of vehicle do you drive?
Buick LaSabre
4. Do you know gas mileage your vehicle gets?
about 20 mpg
5. Do you know ways to improve your mileage?
Yes. I need to buy another car.
How about for your current car?
No.
6. Do you do anything to improve your mileage?
I get my oil changed regularly with high-mileage oil.

Interview Questions:

1. What are your views on the environment and your impact on it?
My view is that I have a very low impact on the environment in a negative way.
2. What are your opinions of hybrid cars?
I like them.
Why?
I like that we're moving towards as much of an energy independence, not like on a national level, that's not so important to me, but on a personal level I like the idea of having your own way, your own power source at your home and your car could get its power source at your house. I really like the independence of that.
3. Do you have any reason you would not buy a hybrid car?
No.
4. What do you think of converting your current car into a hybrid if that were possible?
Yeah, if it was cost effective, sure
5. What is your comfort level with making mechanical changes to your car?
High
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
I don't know, that's really the question. I'd have to do some math. I would have to determine if it would make the vehicle go up or down in value and how many years it would take to make up the amount I would've spent on fossil fuels and if that is greater than the conversion cost, then I wouldn't convert it.
So, let's say there were a converter available, it's easy to install, it'll cost \$500 and it'll save you 10% better gas mileage, would that be a worthwhile thing? So 10% better gas over the course of your lifetime.
And it makes the value of the car go up or down?
It wouldn't go down. You would either take it out and put it into your next car to get those savings or leave it in and the value would go up.

Oh, then yeah, I guess. 10% and it's only 500 bucks? If you're improving your gas mileage by 10%, that's only like...

okay, let's say 25%, it doesn't matter

oh, so this isn't an actual product?

No, it's just a hypothetical. I'm just talking about if you could significantly improve your gas mileage, generally speaking, what would that be worth to you? So, if you could buy this magical do-hickey that turns your car to get 30% better, what would that be worth? 500 bucks, 2000 bucks?

It wouldn't matter, say I put something on my car and I get 100 miles to the gallon, then that's worth a lot of money. As long as it adds up. As long as I'm going to save more in the long run, then yes. It's all math for me.

So, how long would it take for it to be worth it to you? You said 'long term' savings. Is that a year or ten years.

It could go for as long as ten years. If it took me ten years to get my money back, that's less appealing of course.

So what's the ideal for you?

The ideal would be that I could get a return on it in under a year so if I spent \$1,000 but within a year I'd already saved \$1,000 on fuel, that's ideal.

You think a year is good to recoup?

Yeah, if you had something that was only \$1,000 and it took a year but from what I've read, cause I've looked into hybrid vehicles, hybrids usually take 3-5 years for you to recoup the cost of a new hybrid vehicle off the lot, just the difference between like a hybrid civic versus not hybrid civic.

[Referring to current hybrids:]the return is too long and they don't explain it well enough to you and I think they would if it really did make sense. We're still in the early adopter phase where more people have to be compelled to do it for the environment and I don't really care enough to make it worth it.

Impressions: Wants financial benefit and personal energy independence; would need proof

Early adopter based on financial gain

\$1,000

#6: Emily Younker: interviewed 9/9 at 10:50am

Married female

Demographics, opening questions:

1. How old are you?
25
2. How many miles is your daily commute?
54 one-way
3. What kind of vehicle do you drive?
Toyota corolla
4. Do you know gas mileage your vehicle gets?
about 40mpg
5. Do you know ways to improve your mileage?
Keep your oil checked up, make sure that your tires are correctly inflated, highway miles always get better than city miles, air conditioning will use some extra gas mileage but I am willing to put up with that.
6. Do you do anything to improve your mileage?
I do those. I use my air conditioning. It helps that my husband is a mechanic so he tells me what I should and should not be doing.

Interview Questions:

1. What are your views on the environment and your impact on it?
I've always felt that I try to lessen my carbon footprint but I don't necessarily go completely out of my way. I used to ride the bus every day to work and walk when I could but I feel that I have a job and I need to be able to provide for myself, therefore if it means that I have to drive a hundred miles a day then I will do it and try and lessen my carbon footprint other ways.
2. What are your opinions of hybrid cars?
I think that they're a good idea but I don't know if they're the miracle saving car that everyone thinks they are because they cause, they leave footprints in other ways. They take fuel as well, even if it is through electricity, we still have to create that electricity somehow.
3. Do you have any reason you would not buy a hybrid car?
No reason why I would not buy one but they haven't given me a good reason *to* buy one yet, my car works fine
4. What do you think of converting your current car into a hybrid if that were possible?
It doesn't really hold much interest for me at this point
5. What is your comfort level with making mechanical changes to your car?
That's what my husband is for, I figure he knows what's best. I don't have a problem with people making changes to my car, as long as I'm not the one specifically doing it
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
It would probably be worth quite a bit but once again I'm not completely up to date on all the benefits of the hybrid cars so therefore I can't really say if I would jump at the chance.

Impressions: Not convinced enough of benefits of hybrids. **Late majority**

#7: Courtnie Erickson: Interviewed 9/9, 11am
married female

Demographics, opening questions:

1. How old are you?
23
2. How many miles is your daily commute?
10
3. What kind of vehicle do you drive?
Hyundai Sonata
4. Do you know gas mileage your vehicle gets?
24
5. Do you know ways to improve your mileage?
Kind of. I have to get it regularly checked, filters fixed, stuff like that.
So regular maintenance?
Yeah.
6. Do you do anything to improve your mileage?
I do the regular maintenance stuff but other than that, not really.

Interview Questions:

1. What are your views on the environment and your impact on it?
I don't really think much about it.
2. What are your opinions of hybrid cars?
I think they're good but I would never own one.
3. Do you have any reason you would not buy a hybrid car?
For one, the price and I just worry about reliability and problems like that where not a lot of people are familiar with them; I don't know how many people could really help you.
4. What do you think of converting your current car into a hybrid if that were possible?
I'd consider it but then again I'd be worried about the reliability.
5. What is your comfort level with making mechanical changes to your car?
Not very high.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
Probably maybe a few thousand. Not more than that at all.

Impressions: 'Average' person, doesn't know, doesn't really care about environment; intimidated by the mechanics/reliability/safety aspects, less of a risk-taker.

****Late majority****

maybe a few thousand

#8: Brandon Hoff: Interviewed 9/9, 1:40pm

Married male

Demographics, opening questions:

1. How old are you?
30
2. How many miles is your daily commute?
20 miles
3. What kind of vehicle do you drive?
Scion XB and a Honda Fit (compact)
4. Do you know gas mileage your vehicle gets?
About 33
5. Do you know ways to improve your mileage?
I know of a few. One, not to accelerate as much. keep your tires inflated so they're not flat. Try to not run with your AC on or your windows down because of aerodynamics
6. Do you do anything to improve your mileage?
I do. I try to drive slowly and not accelerate as much. I watch that for sure.

Interview Questions:

1. What are your views on the environment and your impact on it?
I think we definitely need to start doing more with the environment. I'm all for the green initiative and things like that so I think that's good for our future and also good for us right now.
2. What are your opinions of hybrid cars?
I think they're great. I think that's a start from us getting away from the gasoline and I also think that electric cars are pretty cool too even though their driving range isn't very far but I think that's a good step in the way that it's going, trying to get off the fossil fuels and things like that. I think that's a good thing for everybody.
3. Do you have any reason you would not buy a hybrid car?
They are expensive, although I think they're kind of coming down. Same thing with electric, plus the range, but hybrids, other than the price, I think it would be a good investment
4. What do you think of converting your current car into a hybrid if that were possible?
I think it's possible on some of them. Again I think it's the cost-benefit ratio thing. I think if it was cheap to do, that would be great because you'd be able to save gas and a little bit of money and help the environment but if it's not there, the incentive's not there, cheap enough, then it's kind of hard to do.
5. What is your comfort level with making mechanical changes to your car?
None. I am not mechanical in any way. I don't know much about cars.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
I guess it would depend on how much you would be saving in gas and how much that would be at the pump, so you know, probably I guess over the life of your car if you had it for 10 years, you would probably save \$10,000, over ten years though, so maybe around that range. So if it were \$10,000 to upgrade your car to a hybrid you would see your money back after ten years so I suppose if it was a little bit less than that, that would

be a benefit.

Impressions: Cares about the environment, has researched hybrids, named a much higher price point (\$10,000) than I expected. Affordability is still important to make it feasible.

Early adopter for eco and financial benefits

A little less than \$10,000

#9: Nathan Miskin: interviewed 9/9, 1:50pm
Married male

Demographics, opening questions:

1. How old are you?
37
2. How many miles is your daily commute?
5 miles
3. What kind of vehicle do you drive?
Hyundai Elantra
4. Do you know gas mileage your vehicle gets?
about 35mpg
5. Do you know ways to improve your mileage?
Yes. It improves when I drive on the freeway, I guess, and when I drive really non-aggressively
6. Do you do anything to improve your mileage?
No

Interview Questions:

1. What are your views on the environment and your impact on it?
I don't think about it that much. it seems like a bigger problem and everyone's fighting about the solution, so I don't do anything until there's a consensus on it.
2. What are your opinions of hybrid cars?
I'm fairly neutral. I think they're okay. I would consider having a hybrid car.
3. Do you have any reason you would not buy a hybrid car?
None that I can think of.
4. What do you think of converting your current car into a hybrid if that were possible?
It would depend on how hard it is.
5. What is your comfort level with making mechanical changes to your car?
It depends on the mechanical change.
6. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
I don't know.

Impressions: His attitude is mostly ambivalence and laziness, as I expected many consumers are.

Laggard, if ever

#10: Steve: Interviewed 9/9, 5:40pm

singe male

Demographics, opening questions:

1. How old are you?
42
2. How many miles is your daily commute one-way?
15 miles
3. What kind of vehicle do you drive?
Lexus SUV
4. Do you know gas mileage your vehicle gets?
16mpg
5. Do you know ways to improve your mileage?
no
6. Do you do anything to improve your mileage?
no

Interview Questions:

7. What are your views on the environment and your impact on it?
It's very important to sustain life. By living, breathing, consuming and spending time here obviously has a plus and minus effect on the environment.
8. What are your opinions of hybrid cars?
They're a good concept but not quite there yet, perfection wise, in terms of making it a viable means of getting around and transporting stuff.
9. Do you have any reason you would not buy a hybrid car?
Speed, durability, not many choices, safety, and looks
10. What do you think of converting your current car into a hybrid if that were possible?
Sure.
11. What is your comfort level with making mechanical changes to your car?
Not particularly any feeling toward it whatsoever
12. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?
Not much. A few thousand bucks, I guess.

Impressions: relatively ambivalent toward environment, not in need of financial savings

****Late Majority****

A few thousand bucks

Appendix B

Analysis of Responses Compared to Research Hypotheses

Hypothesis 1. We expect research to bear out the common objections to hybrid purchases expressed in the Historical Background section, specifically including price and limited model selection as the biggest deterrents.

Hybrid Price Objection

April: 1	Hailey: 1	Kevin: 0	Alma: 1	Aaron: 0
Emily: 0	Courtne: 1	Brandon: 1	Nathan: 0	Steve: 1

Only 6/10 expressed price objections as deterrents to buying a hybrid. This is much lower than expected.

Limited model selection Objective

April: 0	Hailey: 0	Kevin: 0	Alma: 0	Aaron: 0
Emily: 0	Courtne: 0	Brandon: 1	Nathan: 0	Steve: 1

Only 2/10 expressed limited model selection as a buying deterrent. This is significantly less than expected.

Hypothesis 2. We expect research participants to express negative stereotype associations with hybrid ownership and use terms such as ‘tree-hugger’ or ‘hippie’ etc. and that those perceptions are substantial deterrents to buying hybrids.

Negative stereotyping of hybrid owners

April: 0	Hailey: 0	Kevin: 0	Alma: 0	Aaron: 0
Emily: 0	Courtne: 0	Brandon: 0	Nathan: 0	Steve: 0

None of the participants expressed any negative stereotyping of hybrid owners. We expected at least a few comments about personality types or stereotypes.

Hypothesis 3. We expect participants to be receptive to hybrid alternatives that will save them gas and help the environment but allow them to retain the convenience and ‘personality’ of their existing vehicle.

Receptive to conversion

April: 1	Hailey: 1	Kevin: 1	Alma: 1	Aaron: 1
Emily: 0	Courtne: 1	Brandon: 1	Nathan: .5	Steve: 1

8.5/10 participants were receptive to hybrids alternatives, which is in line with our expectations.

Hypothesis 4. We expect the biggest deterrent to the hybrid alternative product to be participants' hesitation or intimidation at the idea of modifying their personal vehicles.

hesitation or intimidation at the idea of modifying their personal vehicles

April: 0	Hailey: 0	Kevin: 0	Alma: 0	Aaron: 0
Emily: 0	Courtne: 0	Brandon: 0	Nathan: 0	Steve: 0

None of the participants expressed hesitation or intimidation at the idea of modifying their personal vehicles.

Surprising Findings:

2/10 people expressed concerns over safety and reliability

The prices suggested by most participants were higher than expected:

- \$500-\$1,000
- \$3,000
- a couple thousand dollars
- \$1,000
- A little less than \$10,000
- a few thousand bucks

Appendix C

Sample Survey

<http://www.zoomerang.com/Survey/WEB22D4RSJBUHD>

Commuting Options

1. Please indicate your gender.

☐ Male

☐ Female

2. Please select the category that includes your age.

☐ 17 or younger

☐ 18 - 24

☐ 25 - 34

☐ 35 - 44

☐ 45 - 54

☐ 55 - 64

☐ 65 or older

3. How many miles is your daily commute EACH WAY?

4. What type of vehicle do you drive most?

☐ Compact/small car

☐ Medium/large car

☐ Luxury car

☐ Small Sport Utility Vehicle (SUV)

☐ Full-size Sport Utility Vehicle (SUV)

☐ 2-wheel drive truck

☐ 4-wheel drive truck

☐ Other, please specify

5. What is the gas mileage of your vehicle? (mpg)

6. How much money do you spend on gas PER MONTH?

- ☐ \$0 - \$25
- ☐ \$25 - \$50
- ☐ \$50 - \$75
- ☐ \$75 - 100
- ☐ \$100 - \$150
- ☐ \$150 - \$200
- ☐ \$200 - \$300
- ☐ \$300+

7. What are the reasons you WOULD buy a hybrid? (check all that apply)

- ☐ Gas savings
- ☐ Better for the environment
- ☐ Less dependency on fossil fuels
- ☐ Personal independence by being able to recharge at home
- ☐ Other, please specify

8. What are the reasons you would NOT buy a hybrid? (check all that apply)

- ☐ Interior size/configuration doesn't fit your needs
- ☐ Limited number of models to choose from
- ☐ Initial purchase price
- ☐ Safety concerns
- ☐ Limited driving range
- ☐ Unattractive car designs
- ☐ Social stereotypes associate with hybrid ownership
- ☐ Reliability concerns
- ☐ Don't think it's better for the environment
- ☐ Unfamiliar with technology
- ☐ Other, please specify

9. If you could convert your car into a hybrid that got better mileage and more horsepower, how likely would you be to convert your car?

- ☐ Very likely to convert my car to hybrid
- ☐ Likely to convert my car to hybrid
- ☐ Not likely to convert my car to hybrid
- ☐ Definitely not likely to convert my car to hybrid

10. What is your comfort level with making mechanical changes to your car?

- ☐ Very comfortable
- ☐ Comfortable
- ☐ Somewhat comfortable
- ☐ Uncomfortable

11. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

- ☐ \$0 - \$500
- ☐ \$500 - \$1,000
- ☐ \$1,000 - \$2,000
- ☐ \$2,000 - \$4,000
- ☐ \$4,000 - \$7,000
- ☐ \$7,000 - \$10,000



12. What is your BIGGEST complaint about hybrid cars?







- ☐ Interior size/configuration doesn't fit your needs
- ☐ Limited number of models to choose from
- ☐ Initial purchase price
- ☐ Safety concerns
- ☐ Limited driving range
- ☐ Unattractive car designs
- ☐ Social stereotypes associate with hybrid ownership
- ☐ Reliability concerns
- ☐ Don't think it's better for the environment
- ☐ Unfamiliar with technology
- ☐ Other, please specify

Submit

Appendix D

Survey Results Report

1. Please indicate your gender.			
Male		37	38%
Female		60	62%
Total		97	100%

2. Please select the category that includes your age.			
17 or younger		0	0%
18 - 24		14	14%
25 - 34		44	45%
35 - 44		12	12%
45 - 54		9	9%
55 - 64		11	11%
65 or older		8	8%
Total		98	100%

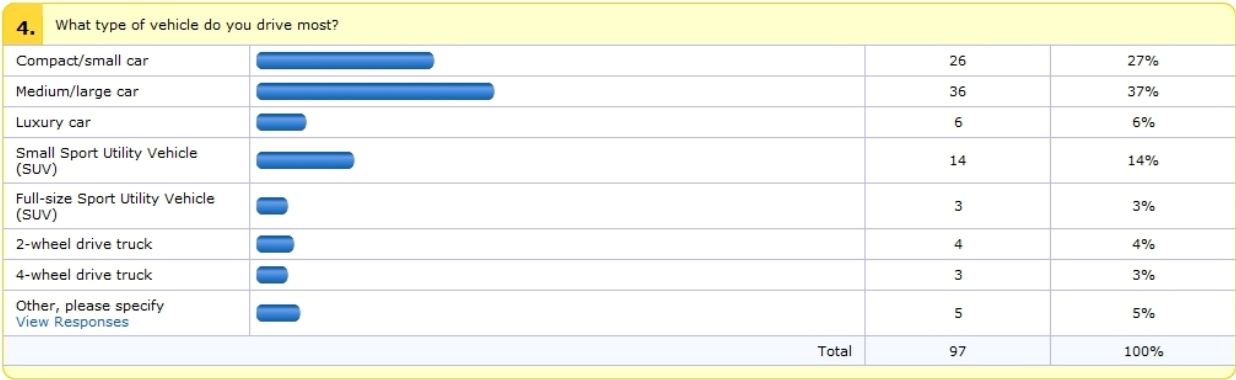
3. How many miles is your daily commute EACH WAY?

[View 99 Responses](#)
3. How many miles is your daily commute EACH WAY?

#	Response
1	5 miles
2	NA
3	25
4	5
5	5
6	1
7	about 8
8	27.72
9	Retired
10	25
11	3/4 miles
12	18
13	30
14	15
15	30
16	7
17	6
18	22 miles
19	0
20	17
21	26
22	10
23	0
24	15
25	Used to be 35
26	None
27	40
28	5
29	15
30	36
31	18 miles
32	8
33	17
34	10

35	0
36	28
37	18
38	25
39	60
40	0
41	6
42	less than 1
43	20
44	15
45	0
46	3
47	0
48	8
49	20
50	13
51	1/2 mi
52	15
53	1
54	0
55	.5
56	6
57	6.5 miles
58	0
59	15
60	40
61	About 30 miles round trip.
62	seven miles
63	1.5
64	130
65	Approximately 20 miles
66	45
67	1 mile
68	26
69	10
70	approx 3 miles

70	approx 3 miles
71	from school 2 blocks
72	4
73	45
74	5
75	0 - work from home
76	varies
77	20
78	0
79	60
80	85
81	12.5
82	7
83	12.7 miles
84	5
85	0 Miles
86	One mile (to drop my kids off at school!)
87	48
88	0
89	15
90	retired go shopping minimum
91	25
92	0
93	45
94	34
95	3 miles
96	Over 15
97	5
98	300
99	5



4. What type of vehicle do you drive most?	
#	Response
1	Mini van
2	Toyota sienna
3	Ford Flex AWD
4	public transportation
5	Minivan

5. What is the gas mileage of your vehicle? (mpg)






[View 99 Responses](#)

5. What is the gas mileage of your vehicle? (mpg)					
#	Response				
1	30-35	35	25 to 27	70	26
2	26	36	Around 30 mpg	71	17
3	25	37	29	72	47,000
4	11	38	22	73	26
5	33	39	34	74	30
6	26	40	32	75	20 mpg
7	28-32	41	24	76	19
8	30	42	20.1	77	28mpg
9	15 mpg	43	35	78	29
10	20 mpg	44	25mpg	79	23
11	25	45	city 20 hwy 29	80	20
12	30	46	33	81	33mpg
13	12	47	16	82	20
14	22	48	25mpg	83	18
15	32	49	14.5	84	22 mph
16	38	50	15	85	27
17	30	51	30	86	24 MPG
18	23 mpg	52	35	87	26 mpg at best
19	17	53	17	88	15
20	17	54	19	89	14
21	25	55	30 mpg	90	25-27
22	12	56	15	91	10 mpg
23	20	57	32	92	35
24	Apx 30	58	19 mpg	93	15
25	27	59	20 mpg	94	23
26	18	60	24	95	26
27	28	61	31	96	28
28	30	62	About 21 to 24 mpg.	97	18
29	28	63	30	98	30
30	26	64	38	99	21
31	27.3	65	0		
32	14	66	50 mpg		
33	30	67	44		
34	27	68	16 mpg		
		69	36mpg		
		70	26		

6. How much money do you spend on gas PER MONTH?

\$0 - \$25		1	1%
\$25 - \$50		11	11%
\$50 - \$75		9	9%
\$75 - 100		11	11%
\$100 - \$150		29	29%
\$150 - \$200		21	21%
\$200 - \$300		10	10%
\$300+		7	7%
Total		99	100%












7. What are the reasons you WOULD buy a hybrid? (check all that apply)

Gas savings		86	88%
Better for the environment		53	54%
Less dependency on fossil fuels		35	36%
Personal independence by being able to recharge at home		28	29%
Other, please specify View Responses		9	9%

7. What are the reasons you WOULD buy a hybrid? (check all that apply)

#	Response
1	Not interested.
2	if they were fast like gas type cars, and less expensive to purchase
3	Won't buy one.
4	I already own a hybrid
5	Have a nifty look :)
6	We DID buy one with hopes to get good gas mileage
7	less dependency on FOREIGN oil
8	drive very little
9	I wouldn't buy one. Hybrids are a waste of money. Too expensive for what they do.

8. What are the reasons you would NOT buy a hybrid? (check all that apply)

Interior size/configuration doesn't fit your needs		43	45%
Limited number of models to choose from		40	42%
Initial purchase price		66	69%
Safety concerns		22	23%
Limited driving range		45	47%
Unattractive car designs		29	30%
Social stereotypes associate with hybrid ownership		11	11%
Reliability concerns		38	40%
Don't think it's better for the environment		10	10%
Unfamiliar with technology		19	20%
Other, please specify View Responses		16	17%

8. What are the reasons you would NOT buy a hybrid? (check all that apply)

#	Response
1	price
2	cost of maint.
3	I don't think they have advanced enough in technology yet. I wouldn't be an earlier adopter b/c it seems they would have a lot of kinks to work out. Also, it's still using non-renewable energy unless you have solar power.
4	The main reason is the price
5	Price
6	All this "green" technology is a joke!!!
7	Don't have a place to plug it in.
8	I doubt the life span of the car and reliability down the road. How much is it going to take to replace the batt. once they start wearing out?
9	I own a hybrid
10	high maintenance/repair costs
11	More expensive to repair when has problems
12	Electricity is for a big part generated by burning fossil fuels so would like to see the ratio to see if it actually is better
13	Not sure it's better for the environment
14	Doesn't save as much on gas mileage as one would think (we have one)
15	where's the hybrid TRUCK?
16	drive very little

9. If you could convert your car into a hybrid that got better mileage and more horsepower, how likely would you be to convert your car?

Very likely to convert my car to hybrid		36	37%
Likely to convert my car to hybrid		26	27%
Not likely to convert my car to hybrid		25	26%
Definitely not likely to convert my car to hybrid		11	11%
Total		98	100%

10. What is your comfort level with making mechanical changes to your car?

Very comfortable		6	6%
Comfortable		20	21%
Somewhat comfortable		30	31%
Uncomfortable		41	42%
Total		97	100%

11. If you could convert your car into a hybrid, without sacrificing performance, what would that be worth to you financially?

\$0 - \$500		23	24%
\$500 - \$1,000		21	22%
\$1,000 - \$2,000		25	26%
\$2,000 - \$4,000		17	18%
\$4,000 - \$7,000		7	7%
\$7,000 - \$10,000		3	3%
Total		96	100%

12. What is your BIGGEST complaint about hybrid cars?

Interior size/configuration doesn't fit your needs		10	10%
Limited number of models to choose from		6	6%
Initial purchase price		35	36%
Safety concerns		4	4%
Limited driving range		8	8%
Unattractive car designs		4	4%
Social stereotypes associate with hybrid ownership		3	3%
Reliability concerns		8	8%
Don't think it's better for the environment		6	6%
Unfamiliar with technology		5	5%
Other, please specify View Responses		9	9%
Total		98	100%

12. What is your BIGGEST complaint about hybrid cars?

#	Response
1	price
2	battery cost/frequency of battery change out
3	all of the above, mostly.. dont want to just pick one so many issues
4	None, I purchased a hybrid in 2006 and love it.
5	high maintenance/repair costs
6	Studies show that overall you don't save money due to initial purchase price.
7	switching between gas and electricity
8	Paid extra initially for hybrid to get good gas mileage & it isn't as good as we'd hoped
9	too old to change