

A STUDY OF SUSTAINABLE BEHAVIORS AMONG CALIFORNIA HISPANICS REGARDING TRANSPORTATION

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ABSTRACT

Hispanics represent a significant and growing population segment in the United States (56% of all population growth, and California represents the largest percentage of Hispanics (37%). This research concentrated on learning more about Hispanics and their sustainable behaviors regarding transportation, both public and private. By studying Hispanic transportation behaviors, marketers can understand their future needs, supplying the products/services through effective promotional media channels. This project allowed researchers to identify behaviors of Hispanics in California regarding green transportation and the media that influences them. The use and purchase patterns of hybrid vehicles were analyzed, as well as the use of car pools and public transportation, current gas mileage (mpg) and media they prefer. It was found that Hispanics drive hybrids slightly less than non-Hispanics. There is a somewhat higher preference for the next purchased car to be a hybrid for Hispanics than for non-Hispanics. In addition, fewer Hispanics use public transportation or a car pool than non-Hispanics. The researchers believe that the conclusions from this exploratory study will help marketers of transportation services in the public and private sectors. Additional research and discussions on Hispanics and sustainable transportation are expected and welcome after this pilot study.

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INTRODUCTION

This paper examines the behaviors of Hispanics vs. non-Hispanics in California regarding some specific transportation issues related to environmental sustainability, to determine preferences and buying propensity for both groups. Given the importance of the Hispanics in terms of growth which accounted for 56% of the total growth in the US, and in population in California of 37%, this study can help marketers understand future needs of this segment and therefore provide crucial information for decision-making. Given the increasing trend in sustainability and environmental issues, the findings are very relevant. Hispanics vs. non-Hispanics personal use of hybrid vehicles, miles per gallon (mpg), and modes of transportation was researched.

Various related articles about this issue were analyzed, but there were mostly related to general behaviors and characteristics of the Hispanic Marketing, i.e., perceptions and cultural differences, influences and decision-making, etc., but nothing specific about the comparison between Hispanics and non-Hispanics regarding the transportation issues were found. This exploratory paper will provide valuable information to marketers and scholars related to the comparison between Hispanic and non-Hispanics about buying hybrid cars, using public transportation, mpg consumption, and media preferences.

Green issues are among the many concerns of the world's population. Hispanics represent a significant and growing part of the US population, and California has been a bell weather state for environmental issues. In studying the behaviors of Hispanics, we learned about three areas of eco-friendly attitudes and behaviors: automobile trends, public transportation usage and media preferences.

The organization of this paper includes a literature review section to incorporate relevant information about these issues from previous research, a data and methodology section describing the data collection process and how the survey was applied, using the convenience sample. A final results section explains the data obtained and the implications for each of the panels, and finally the concluding comments section summarizes the relevancy of the findings as well as future research.

LITERATURE REVIEW

Family, religion, language, and music are important to Hispanics. (Meneses, 2011) Hispanics use products with less attachment to schedules and timeframes, and enjoy the moment. It is an advantage to be poor but happy rather than rich and unhappy. Income levels lag, with the percentage of households with incomes over \$100k indexed at 50% of the general population. In other words, the percentage of Hispanics earning \$100K or more is half of that percentage of the people living in the US. However, for many Hispanics, just to have enough to get by is satisfactory. Hispanics cultural values retain optimism, enhance human experience, and embrace spirituality. (Korzenny, Korzenny, 2005)

In California, 81% of Latinos had a high school diploma in 2005, ranking #46 out of 50 states. However, for Bachelor's Degrees, California ranks #10 with 31%. For masters or additional education/degree, there were four million out of 50 million in the West (8%). Looking at who is enrolled in school, over 3 years of age, Blacks ranked highest, 34%, Hispanics 32% and Whites 26% (2005 results). (Gauquin, Ryan, 2007)

Companies trying to target high income Hispanics should understand their behaviors regarding environmental practices. Affluent Hispanics (\$100k+) generally used less water and recycled more waste than non-Hispanics. These same affluent Hispanics had a higher incidence of solar water heaters (23% vs. 5.7%) of non-Hispanics. (McCabe, Corona, Weaver, 2012)

The US population is spending a higher percentage of its income on transportation than ever before. Living in sprawling urban areas has put U.S. families in the car more often to get to work, shopping, and recreation. Since 1991, America's total transportation bill has grown faster than inflation (Katz, Puentes, 2005)

Rising gasoline prices are forcing American drivers to consider using mass transit, an electric car, moving, or changing their job. Moreover, one in three consumers would consider purchasing a higher mpg vehicle if the price of gasoline rises to more than \$5 per gallon. (Jacome, 2011)

Eco friendly beliefs can translate into improved transportation utility. Sustainable transportation is promoting our environment. Those who live in green communities have more sustainable travel experiences than others. (Kahn, Morris, 2009) Becoming more aware of the environment can improve sustainable behavior, such as more car pooling, mass transportation and hybrid use.

Why are people in California buying hybrid electric vehicles? They are concerned about 1) the environment, 2) energy efficiency, 3) global warming, 4) price of gasoline, and 5) high occupancy vehicle (HOV) lane use while driving alone. A statewide survey found that people wanted energy and the environmental information to be included in the marketing materials. (Sangkapichai, Saphores, 2009)

A California study found that even if fuel prices double, individuals are more likely to change their vehicle choice (i.e., higher mpg) than their driving patterns or usage. (Spissu, Pinjari, et al, 2009)

A recent study predicts global growth for hybrid vehicles of 20% through 2015. The reasons for this include more worldwide oil consumption and government initiatives, as well as buyers' awareness and acceptance. Consumers know more about the green benefits of driving a hybrid, including less carbon emissions and less of a dependence on oil as a natural resource. However, the higher cost and longer breakeven point of a new hybrid are sales barriers. (Newcomb, 2012)

Household vehicle consumption growth is expected to increase by 31% over 25 years to 235 million cars. More white non Hispanic and Hispanic homes will acquire vehicles than black non Hispanic and Asian and other non Hispanic Households. The South and the West will have the greatest growth in new vehicles. (Feng, Wang, et al, 2011)

Out of 15 eco-friendly activities, the fewest responded to "own or lease a hybrid vehicle" by both non-Hispanics and Hispanics in a 2011 Scarborough study report in California. Hispanics index at 24 compared to the general population index (100), due to the large financial commitment and high involvement in the product purchase. (McCabe, Corona, 2011)

There are currently dozens of hybrid autos to choose from, including hybrid-gasoline-electric and fuel cell technologies. Americans, including US Hispanics, are making the purchase decisions on these vehicles, and businesses need to be audience relevant in their marketing messages. (Deen, 2003)

If someone is considered "green" or eco-friendly to begin with, his or her involvement with the environment is greater. A laundry detergent study concluded that the green involved group had no significant differences for environmental benefit vs. cost-saving benefit print advertising. However, for those not already involved with the environment, the green appeal was more persuasive than the cost appeal considering purchase intent, attitudes, and support arguments. (Schuhwerk, Lefkoff-Hagius, 1995) The conclusions here are that those who are not already green thinking could be appealed to by specific advertising.

Those who rate concern for waste as highly important are willing to pay more for eco-friendly products. Educational strategies for different consumer groups, with a goal of a healthier environment are presented. Willingness to pay differs across demographic groups, with African Americans willing to spend significantly more than Caucasians on eco-friendly products. (Royne, Levy, Martinez, 2011)

Hispanics participate in eco-friendly activities that require less personal or financial investment. They also do more with a financial reward, such as recycling cans or bottles and reducing their electric bill using energy efficient light bulbs. (McCabe, Corona, 2011)

For marketers trying to reach Hispanics, TV is fundamental; however, competition is expected to expand, especially among digital and interactive channels. (Korzenny, Korzenny, 2005) For radio, Spanish Contemporary (Romantic, Baladas) is the most preferred format among Hispanics followed by Mexican Regional (Banda, Rancheras) in the West and Southwest US regions. (Meneses, 2011) Radio was something of a folk carrier for Hispanic immigrants for education about finances, cooking, etc. (Korzenny, Korzenny, 2005)

Hispanics like to read news, and younger, more acculturated Hispanics will be using the Internet for sports news, such as soccer, baseball, and boxing, and for national and international news. For Hispanics without Internet access, newspapers in hard copy will be preferred. In addition, Hispanic consumers surf

channels seeking entertainment, education and to satisfy their interests, in both English and Spanish languages. (Meneses, 2011)

Overall, Hispanics prefer TV and the web for media, and non-Hispanics selected magazines/newspapers and web. Facebook® ranked about the same for both Hispanic and non-Hispanic, but Twitter® is only used by 5% of Hispanics, vs. 18.4% for non-Hispanics. (McCabe, Corona, Weaver, 2012)

DATA AND METHODOLOGY

This research was designed as an exploratory study of the similarities and differences between Hispanic and non-Hispanic attitudes towards sustainability and their engagement in associated transportation activities. A convenience sample was utilized, drawn from contacts maintained by the three researchers and databases of members of a variety of Hispanic professional organizations. While convenience sampling has known limitations, such as not being representative of the larger population, this approach has been used productively in other studies, especially exploratory research. Particular attention to sample selection insured including a sizable proportion of known Hispanics from those invited to participate.

The survey instrument collected behaviors such as green activities and interests plus standard demographic information. The instrument was tested and appropriate modifications increased both clarity and ease of completion. Potential responders were invited via email to participate. The instrument was made available utilizing SurveyMonkey.com over a two-week period in November 2011. Approximately 310 invitations were sent to potential responders. 144 completed the survey. This constituted a 46% response rate. Of these, 29 were discarded due to respondents not being residents of California. The remaining 115 responses were sorted, tabulated, and correlated using standard statistical processes.

RESULTS

We have identified attitudes of Hispanics in California regarding green transportation and the media that influence Hispanics. Results include the usage and purchase patterns of hybrid vehicles, the use of car pools and public transportation, current gas mileage (mpg) and media preferences.

Tables 1 and 2 show the results of the various panels analyzed with their corresponding measures for both Hispanics and non-Hispanics in the selected categories for this paper.

Regarding hybrid cars from Panel A below, high income Hispanics “always” pay attention 31.3% of the time vs. 14.3% of high income non Hispanics. More than two times the percentage of respondents who are Hispanic are “always” paying attention to information on hybrid cars. This difference is significant, and near the same level of difference as solar energy (41% for Hispanics vs. 20% for non Hispanics). Of the four categories listed, the most attention is paid to water and then solar energy. Hybrids rank third, ahead of recycling.

Overall, Hispanics are driving cars with the lower range of mpg and the higher range. From Panel B, Non-Hispanics are more likely to drive cars with gas mileage between 16-20 mpg. 17.1% of non Hispanics and 12.8% for Hispanics drove their primary vehicle with this mileage per gallon. The mpg averages are not significantly different for the 21-30 mpg (34.2% for non Hispanics and 33.3% for Hispanics).

As shown in Panel C, Auto Behaviors/Intentions, 10% of Hispanics currently drive a hybrid, compared to 14.5% of non Hispanics. However, 46.2% of Hispanics, mostly highly acculturated, plan to buy a hybrid for their next car, vs. 43.1% for non-Hispanics. This is a significant jump in intentions for both groups,

which would lead researchers to look for a spike in hybrid sales for the next two to three years, for both Hispanics as well as non Hispanics. There is not a significant difference between the demographic groups for this behavior and intended behavior.

Table 1: Results from Panels A-F for Selected Measures from the Survey

Measure	Hispanics	Non-Hispanics
Panel A: High Income who always pay attention (%)		
Solar energy	41	20
Hybrid cars	31.3	14.3
Water	47	37.1
Recycling	17.9	26.5
Panel B: Mileage per gallon in primary vehicle		
10-15 mpg	7.7	2.6
16-20 mpg	12.8	17.1
21-25 mpg	33.3	34.2
26-30 mpg	23.7	15.4
Panel C: Auto behaviors for hybrid and future intentions to buy hybrid (%)		
Currently drive a hybrid	12.8	14.5
Intentions to buy a hybrid car	46.2	43.1
Panel D: High income respondents hybrid cars (%)		
Drive hybrid	17.6	14.3
Next car hybrid	53	45.5
30+ mpg	29.4	22.9
21-30 mpg	36	60
Panel E: Higher education respondents regarding auto and intentions (%)		
Drive hybrids	10	14.6
Next car hybrid	30	39.1
Panel F: Shared transportation (%)		
Car pool	41	37
Public transportation	70.6	67.6

The Table 1 above shows the results for Panels A-F for selected measures from the survey, in percentages or mpg as noted.

When looking at Hispanics earning \$100k and greater in panel D, there is a pattern of driving a hybrid and planning to purchase a hybrid. In both categories, Hispanics rank higher than non Hispanics. Those Hispanics with higher incomes tend to purchase and plan to buy hybrids at somewhat higher percentages than non Hispanics. We also see a difference in 21-30 mpg driving among high income Hispanics (36%) vs. non-Hispanics (60%). Similar to Figure 2, Hispanics rank higher in the 30+ mpg category than non Hispanics.

Unlike the income factor in panel D, Hispanics with higher education (Panel E) are less likely to drive a hybrid or to purchase a hybrid for their next vehicle. 10% of Hispanics with a higher education are driving a hybrid vs. 14.6% of non Hispanics. 30% of Hispanics with higher education are planning to buy a hybrid, vs. 39.1% of non Hispanics.

Of all Hispanics surveyed, panel F shows that 41% never use a car pool, vs. 37% for non Hispanics. 70.6% of Hispanics surveyed never use public transportation, and of non Hispanics, 67.6% never use public transportation. These findings indicate that Hispanics are slightly less likely to use shared transportation than non Hispanics. Note that this study was conducted in California, that has been known

to enjoy private transportation overall rather than other parts of the United States. In many areas of California, there is no public transportation.

Table 2: Results from panels G and H for selected measures from the survey.

Measure	Hispanics	Non-Hispanics
Panel G: High Income media preferences %		
Flyers	13	9
Web ads/sites	60	54.5
TV	66.7	42.4
Radio	53.3	30.3
Mag/newspapers	46.7	57.6
Facebook®	33.3	27.3
Twitter®	6.7	18.2
Panel H: Higher education media preferences %		
Flyers	0	2
Web ads/sites	73.7	59.1
TV	36.8	34.1
Mag/newspapers	26.3	50
Facebook®	26.3	29.5
Twitter®	10.5	18.2

The Table 2 above shows the results of Panels G and H regarding the results from High Income and Higher education respondents for media preferences, in percentages.

The Panel G above describes the high earning Hispanics vs. non Hispanics choices for media to inform them about environmental issues. Hispanics with high incomes selected TV as their primary choice for media information, followed by websites and radio. Non Hispanics selected magazines/newspapers as their preferred information source. Web sites were their second and TV third choice. High Income non Hispanics used radio (30.3%) and Facebook® at 27.2%. Twitter® usage is lower for higher income Hispanics (6.7% vs. 18.2%) for non-Hispanics.

The Panel H above displays the highly educated Hispanics vs. non Hispanics choices for media to inform them about environmental issues. Hispanics with high education selected web ads/sites as their primary choice for media information, followed by TV and radio. Non-Hispanics selected their second choice as magazines/newspapers with TV third choice. Highly educated Hispanics do not prefer to read magazines/newspapers. Facebook® and radio preferences are similar. Twitter® usage is lower for highly educated Hispanics (10.5% vs. 18.2%) for non-Hispanics.

CONCLUDING COMMENTS

The purpose of this paper was to determine the possible differences in behavior between Hispanics and non-Hispanics in California regarding transportation-related issues, including the use and propensity to buy hybrid cars, the best media to reach both groups, and the use of public transportation. A convenience sample was used based on existing contacts of the researchers, and email invites were sent to respond an electronic survey with relevant questions. 115 valid responses were collected and analyzed, and the results were cross-tabulated to narrow down the findings. Among the most relevant findings, here are the following:

Nearly one third (30.3%) of high income respondents who are Hispanic are “always” paying attention to information on hybrid cars (Fig. 1) vs. 14.3% of non Hispanics in the same income category. This is a significant finding showing that Hispanics with money are seeking information about this product category, and twice as likely to pay attention always to information to news and marketing information on hybrid vehicles. Marketers who are interested in attracting the Hispanic segment should take note of the level of interest for their future advertising campaigns. Many high income Hispanic respondents (Fig. 4)

are interested in buying or already drive a hybrid car. This segment of the market could be a very valued one for manufacturers and dealers of hybrids.

Hispanics resemble non Hispanics in the area of mpg for the most part. They differ slightly on the lower mpg and higher mpg (both are higher for Hispanics). Hispanics get more miles per gallon of gasoline or they get less mileage on their primary vehicles, however, for the most part, the patterns are similar.

High income Hispanics prefer TV and then websites for information (Panel G). High income non Hispanics prefer newspaper/magazines to electronic media. High education Hispanics prefer websites well above any other media, with TV second (Panel H). Highly educated non Hispanics answered that they prefer websites first and then newspapers/magazines as second choices. This is an indication that if you want to reach Hispanics, one media channel for high income and a different media channel for high education Hispanics would be more effective. For example, high income Hispanics may see hybrid cars on TV and make their choice from this exposure only. In addition, highly educated Hispanics may seek more detailed information that one can find online, before shopping for their hybrid car.

Despite its limitations in terms of sufficient sample size and data, this exploratory research provided meaningful data to marketers and researchers. The findings from this exploratory study of Hispanics and their transportation habits and intentions will help marketers in the government and commercial segments of commerce. Because of this study, the opportunity for further discussions and additional research to be conducted on Hispanics and their sustainable transportation needs is encouraged, available, and welcome.

REFERENCES

Deen, L. "Building the Cars of the Future" *Hispanic Engineer & Information Technology*; Jun/Jul 2003, Vol. 18 Issue 1, p10

Feng, Q., Wang, Z., Gu, D., Zeng, Y., "Household vehicle consumption forecasts in the United States, 2000 to 2025." *International Journal of Market Research*; 2011, Vol. 53 Issue 5, p593-618, 26p

Gaquin, D., Ryan, M. *Almanac of American Education*, 2007 Bernan Press.

Jacome, D. "In U.S., High Gas Prices May Make Many Get Fuel-Efficient Cars." *Gallup Poll Briefing*; 5/23/2011, p1

Kahn, M., Morris, E., "Walking the Walk: The Association Between Community Environmentalism and Green Travel Behavior." *Journal of the American Planning Association*; Autumn 2009, Vol. 75 Issue 4, p389-405

Katz, B., Puentes, R., "Taking the High Road: A Metropolitan Agenda for Transportation Reform." In James A. Johnson metro series. Brookings Institution Press. 2005

Korzenny, F., Korzenny, B., *Hispanic Marketing: A Cultural Perspective*, 2005
Elsivier/Butterworth/Heinemann

McCabe, M., Corona, R., Weaver, R. Sustainability for Hispanics in California: Do They Really Care? *Global Conference on Business & Finance Proceedings*; Jun 2012, Vol. 7 Issue 2, p543-554

McCabe, M., Corona, R. Marketing to Hispanics: Eco-Friendly Behavior Patterns, *International Business & Economics Research Journal*, Oct 2011 Vol. 10. No. 10

Meneses, W., Effectively Reach U.S. Hispanic Consumers: 50 Million Plus and Growing, Meneses Research, 2011, San Diego, CA

Newcomb, Technavio, July 26, 2012 “New Study Predicts Rise in Hybrid Sales” accessed July 26, 2012 <http://editorial.autos.msn.com/blogs/autosblogpost.aspx?post=9bb76cee-64aa-4b73-9518-28ae302ef748>

Royne, M., Levy, M., Martinez, J. The Public Health Implications of Consumers' Environmental Concern and Their Willingness to Pay for an Eco-Friendly Product. Journal of Consumer Affairs; Summer 2011, Vol. 45 Issue 2, p329-343

Sangkapichai, M., Saphores, J “Why are Californians interested in Hybrid Cars?” *Journal of Environmental Planning & Management*; Jan 2009, Vol. 52 Issue 1, p79-96

Schuhwerk, M., Lefkoff-Hagius, R., Green or Non-Green? Does Type of Appeal Matter When Advertising a Green Product? *Journal of Advertising*; Summer 1995, Vol. 24 Issue 2, p45-54

Spissu, E., Pinjari, A, Pendyala, R, Bhat, C, A copula-based joint multinomial discrete–continuous model of vehicle type choice and miles of travel. *Transportation*; Jul 2009, Vol. 36 Issue 4, p403-422

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