Mainers' knowledge, practices and attitudes toward clean air, vehicle emissions

and Maine's Clean Car Program
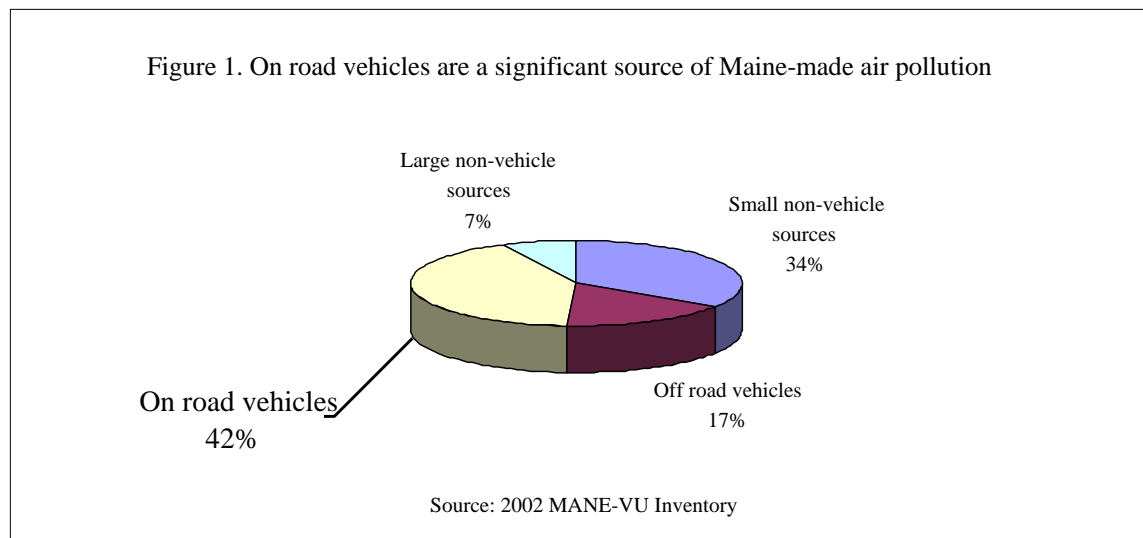
by

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The environmental characteristics of products have become increasingly important to consumers (Loro 1993, USEPA 1994). Firms have responded by placing information on existing products that highlight the product's environmental attributes and by introducing new, or redesigned, "green" products. Governments and non-governmental organizations have also responded by organizing, implementing, and verifying environmental labeling and marketing programs (hereafter, eco-information programs) that cover thousands of products in more than 20 countries (USEPA 1993). From a policy perspective, one aim of these eco-information programs is to educate consumers about the environmental impacts of product consumption, thereby leading to a change in purchasing behavior, and ultimately, to a reduction in negative environmental impacts.

In the light-duty vehicle (cars, truck, minivans, SUVs) market, where traditional command and control approaches have been difficult to achieve[1], effective implementation and regulation of eco-information programs may allow customers to make choices that clearly reflect their environmental preferences while simultaneously achieving policy objectives (e.g., reductions in fossil-fuel use and air emissions). Finding policy tools complementary to, or as a substitute for, command and control regulations is important to Maine, where on-road vehicles are the largest source of air pollution in Maine (Figure 1).

Figure 1. On road vehicles are a significant source of Maine-made air pollution

Large non-vehicle sources
7%

Small non-vehicle sources
34%

On road vehicles
42%

Off road vehicles
17%

Source: 2002 MANE-VU Inventory

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The success of voluntary agreements, such as Maine's Clean Car Campaign, depends, in part, on the ability of vehicle manufacturers to sell consumers more fuel efficient, or low emission vehicles. Although there have been numerous studies (e.g., Brownstone et al. 1996a, b; Bunch et al. 1996; Golob and Gould 1998) indicating a demand for 'greener' vehicles, no one has studied whether an eco-information program is effective in altering consumers' attitudes toward, or purchases of, environmentally preferred vehicles.[2] It is, thus, an open question whether informed customer choice in the light-duty market will lead to an environmentally preferred outcome; however, recent policy changes at the state level have provided an excellent opportunity to identify whether eco-information programs are effective. Specifically, Maine has begun implementing the Maine Clean Car Campaign (hereafter the Campaign); a cooperative effort of Maine's Department of Environmental Protection (DEP), the Maine Automobile Dealers Association and the Natural Resources Council of Maine. The goal of the program is to educate Mainers about the effects of vehicle air pollution and to inform them about differences in vehicle emissions. The University of Maine is involved (through the Department of Resource Economics and Policy and the Margaret Chase Smith Policy Center) by helping design, implement and study the effects of the Campaign.

The aim of this article is to introduce the reader to the Maine Clean Car Campaign and its components. Additionally, we share results of a state-wide survey regarding Maine consumers' views of air pollution in Maine, the link between air quality degradation and motor vehicles as well as documenting current vehicle consumption habits in Maine. Finally, this article will identify some preliminary research findings that may guide future policy initiatives aimed at curbing Maine's air quality degradation due to motor vehicles.

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[1] For example, Congress's recent inability to increase fuel efficiency standards and Maine's rejection of mandatory emissions testing.

[2] The research here focuses on the effects that eco-information programs may have on gas-powered vehicles and will not address the case of hybrid vehicles. Throughout this article we will refer to 'greener' vehicles or 'environmentally preferred vehicles'. These terms refer to gasoline powered vehicles that are classified as low emission vehicles by the USEPA.

Design of the Maine Clean Car Campaign

There are two main parts to the Campaign. One part provides information to vehicle shoppers at the point of purchase (car and truck dealerships). This dealer-based information consists of brochures explaining the Campaign, and Clean Car labels (Figure 2) placed in the windows of new, environmentally better vehicles. The label indicates the vehicle:

- has a highway fuel economy rating of 30 miles per gallon or better; and
- is classified as a low emission vehicle.

The second part of the Campaign focuses on educating Mainers about Maine's air quality, its link to motor vehicle emissions and to heighten awareness of the Campaign. This is done through a Campaign website (www.LEVforME.com), which provides detailed information about vehicles and their contribution to air quality problems, along with newspaper and radio advertisements[3] that provide specific eco-information messages, and general information about the Campaign and the Campaign website.[4]

To assess whether Maine's Campaign is successful in altering consumers' awareness, perceptions and behavior, the long-term research strategy is to analyze survey and sales data collected before and after implementation of the program across areas of the state.

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[3] The marketing materials (brochure, website, radio and newspaper advertisements) were designed with a Portland-based firm - BFT International LLC[©].

[4] The advertisements run in only the western and southern parts of Maine to allow a comparison between areas of the state receiving advertisements and those that do not receive them.

Figure 2. Example of the Maine's Clean Car Sticker, placed on all new vehicle models meeting the Clean Car Program standards.

An important first stage in implementing the above strategy is to document consumers' current level of eco-awareness, perceptions and behavior; and to identify the factors (both environmental and non-environmental) that may assist or constrain the success of the Campaign. This knowledge is important because it provides baseline information about consumers' awareness, perceptions and behavior in the current vehicle market; information essential to designing the eco-information campaign. Additionally, these baseline data serve as a comparison point in determining the effectiveness of the Campaign. Here we present an overview of a recent survey of Maine residents aimed at gathering this baseline information.

The University of Maine Study

During the summer of 2004, we administered a mail survey to a random sample of 1,148 Maine adults who had registered vehicles in Maine. In total 620 Maine residents responded to the survey for a response rate of 60 percent. In general our respondents are similar to the characteristics of the Maine adult population as measured by the recent U.S census, except in terms of gender (Table 1). Although our survey respondents are more likely to be males, relative to the U.S. census, the proportion of males correctly reflects the underlying percent of males in the vehicle registration data. Almost half of the Mainers surveyed drive cars, with pickup trucks being the next most popular vehicle to drive.

Table 1. Characteristics of respondents to the University of Maine survey and of Maine residents as tabulated by the U.S. census.

	Maine Survey Participants	Maine Census[a]
Percent Male	62	48
Average Age	51	47
Average Education (years)	14	13
Percent White	99	97
Average Household Income ($)	50,600	51,700
Percent owning a:		
Car	46	na
Station wagons/ mini-vans	14	na
Sport utility vehicles (SUVs)	16	na
Pickup trucks	24	na

[a]   Data from 2000 Census; income adjusted to 2004 dollars using Bureau of Labor Statistics Consumer Price Index; 'na' indicates data not available

The success of a labeling program for vehicles is measured, at least partially, by being able to change what type of vehicle a person drives. For example, on average, pickup trucks pollute more than cars and an eco-information program should work at increasing the likelihood that truck owners consider moving to another type of vehicle. However, people's perceptions and their driving needs are likely to differ across vehicle type; e.g., truck owners, even those who are environmentally conscious, may need the hauling capacity of a truck in their work. In response, we split the analysis of many of the survey questions by the type of vehicle (car, station wagon/van, sport utility vehicle, pickup truck) a person currently drives, or by the type they plan on buying. However, we first examine the characteristics of the survey respondents split by the type of vehicle they currently drive because we believe this information gives us a clearer idea of who these individuals are.

In general there are few differences between car and station wagon/van owners (hereafter, van owners). Van owners are, on average, slightly more educated, have a higher household income and more likely to support environmental groups (Table 2). Owners of sport

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utility vehicles (SUVs) are similar to car and van owners in their demographic characteristics; however, they are much more likely to snowmobile, hunt and ride all-terrain vehicles (ATVs).[5] Pickup truck owners are quite different from other vehicle owners. Pickup truck owners are, on average, more likely to be male, be less educated and participate in snowmobiling and hunting. Although not entirely surprising, the relatively high participation rates in snowmobiling, hunting and ATV riding among SUV and truck owners indicate the Campaign is less likely to induce these owners to switch away from their current vehicle type because of their recreational hauling needs.

Table 2. Characteristics of survey respondents; split by vehicle ownership.

	Cars	Station wagons/ mini-vans	Sport utility vehicles (SUVs)	Pickup trucks
Percent Male	50[a]	50[a]	60[a]	91[b]
Average Age	50[a]	51[a]	49[a]	52[a]
Average Education (years)	14.3[a]	15.1[b]	14.7[a, b]	13.7[c]
Average Household Income ($)	45,700[a]	56,600[b]	59,600[b]	50,000[c]
Environmental group member	12% [a]	22% [b]	15% [a, b]	10% [a]
Snowmobile rider	10% [a]	15% [a, b]	21% [b]	31% [c]
Hunter	16% [a]	11% [a]	32% [b]	48% [c]
All-terrain vehicle (ATV) rider	14% [a]	10% [a]	17% [b]	24% [b]

Results within a row that share the same superscript are not significantly different from each other.

Mainers' awareness of Maine's air quality

We asked a series of questions to determine Mainers' opinions of Maine's current level of air quality and their perceptions of vehicles' contributions to deteriorations in that quality; increased levels of awareness or concern should indicate an increased likelihood for the Campaign to succeed. Ninety percent of Mainers were at least somewhat concerned about Maine's air quality, although SUV and truck owners were less concerned compared to car and

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[5] The survey also asked questions about Mainers' participation in: hiking, mountain biking, wildlife watching, camping, nature photography and boating. There are no significant differences in participation in these activities across vehicle type. Interested readers can contact the first author for these results.

van owners (Table 3). When asked to rate Maine's air quality a majority of Mainers (52 percent) thought the air was good to very good; truck owners were more likely to indicate that Maine's air quality was good to very good.

Table 3. Mainers' concern levels of air quality; split by vehicle ownership.

	Cars	Station wagons/ mini-vans	Sport utility vehicles (SUVs)	Pickup trucks
Average concern for air quality[a]	3.7[a]	3.7[a]	3.5[b]	3.5[b]
Average rating of air quality[b]	3.5[a]	3.5[a]	3.6[a, b]	3.7[b]

[a] where 1 = not at all concerned, 3 = somewhat concerned, and 5 = very concerned
[b] where 1 = very bad, 3 = fair, and 5 = very good
Results within a row that share the same superscript are not significantly different from each other.

We then asked a question to gauge Mainer's knowledge of how vehicles' emissions impact air quality. Specifically, we asked people to estimate what percent of Maine's air pollution is from people in Maine driving personal vehicles (not including pollution from large commercial haulers, semi-trailers and buses). On average, respondents thought only about a third of the air pollution in Maine is due to driving personal vehicles (truck owners thought only 27 percent of Maine air pollution is due to vehicles). These 'guesstimates' are in contrast to the current scientific estimate for Maine; the Maine DEP estimates that about 42 percent of Maine's air pollution is from people driving cars and trucks. Thus, Mainers underestimate the amount of Maine's air pollution that is caused by driving personal vehicles.

We then presented respondents four different vehicle types (cars, station wagons/mini-vans, sport utility vehicles and pickup trucks) and asked them which vehicle type makes the most pollution when driven; respondents were also given the option to answer that all vehicles pollute about the same. More than half of the respondents stated they thought most vehicles pollute about the same (Table 4). These results are in stark contrast to the reality of car and truck pollution. The U.S. Environmental protection Agency (EPA) currently provides two environmental ratings for all cars sold in the U.S. One rating (the Air Pollution Score) is based on the amount of pollution a vehicle emits associated with smog (nitrogen oxides and non-

methane organic gases) and health problems (particulate matter and carbon monoxide). The other

rating (the Greenhouse Gas Score) is based on the amount of carbon dioxide (a greenhouse gas)

emitted by the vehicle. Both the Air Pollution Score (APS) and the Global Warming Score

(GWS) range from 0 to 10, where 10 is the cleanest score. Using EPA's scoring system, trucks,

on average, are the worst polluters, scoring a 1.9 APS and a 2.3 GWS, whereas cars and minivans

are the cleanest, scoring a 4.1 APS and a 5.3 GWS.[6] Clearly, Mainers have an imperfect

appreciation for the large differences in the amount of air pollution produced by different types of

vehicles; this misperception is probably due to the lack of emissions information present in the

marketplace. Presumably, the success of Maine's Clean Car Campaign will be contingent on

Mainers understanding that the choices they make in buying a vehicle can have significantly

different impacts on the amount of air pollution generated.

Table 4. Percent of Mainer's perceiving which vehicle types pollute the most when driven

Cars	2
Station wagons/ mini-vans	1
Sport utility vehicles (SUVs)	21
Pickup trucks	17
All personal vehicles pollute about the same	59

We then asked several questions aimed at measuring their general perceptions about their

personal environmental impact, others' willingness to work to improve the environment, whether

science or the state can effectively reduce air pollution and the quality of greener vehicles (Table

5). Responses to the first set of questions provide information about whether individuals see

themselves as able to improve the environment through the choices they make. Presumably,

individuals who see their choices as having an environmental impact are more likely to take

notice of Maine's Clean Car Campaign. The second set of questions is meant to measure

individuals' perceptions of others' level of environmental involvement; responses to these

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[6] Note that the scores can be quite varied even within a vehicle class; e.g., the APS for cars runs from 0 to 9 and for trucks runs from 0 to 7.

questions have two possible interpretations. Individuals who perceive that other people are environmentally involved may feel increased pressure to act similarly (a 'peer-pressure' effect). Alternatively, these individuals may think that, since others are doing their share for the environment, they do not need to do anything to improve the environment (a 'free-rider' effect). The third set of questions is meant to measure individuals' perceptions about whether they think other institutions (scientists or the state) are capable of improving or safeguarding environmental quality. Individuals who think these institutions are not likely to perform well may be more likely to see the importance of personal involvement. The last set of questions was aimed at seeing whether people view greener vehicles as being inferior substitutes; if so, they are less likely to respond positively to the Campaign.

Table 5. Mainers level of agreement to specific attitudinal statements[a]

Perception of person environmental impact	
My lifestyle can have an impact on the environment	4.02
It is too hard for someone like me to do much about the environment	2.52
Perceptions of others	
Most people are willing to pay higher prices to protect the environment	2.71
Most people do their part to protect the environment	2.55
Perception of other institutions	
Science will be able to solve our environmental problems	3.12
Air pollution laws are already strong enough	2.60
I trust the state government to protect Maine's environment	2.38
Perceptions of greener vehicles	
Vehicles that produce less pollution are probably more expensive	3.38
Vehicles that produce less pollution probably have lower performance	2.85

[a] where 1 = strongly disagree, 3 = neutral, and 5 = strongly agree

Mainers generally agree that their personal choices can impact the environment and feel state air pollution laws are not strong enough. These two results bode well for the success of the Campaign as it suggests that Mainers are inclined to think they need to take on some of the

burden of air pollution control (possibly by buying a greener vehicle). Additionally, Mainer's perceive that others do not participate in environmentally preferred behaviors; this may incline some individuals to take additional responsibility to curb air quality degradation. With respect to Mainer's views of greener cars, the campaign may be able to play a role in correcting some erroneous perceptions. More than half of Mainer's perceive greener vehicles as more expensive than their counterparts. Moreover, SUV owners perceive that greener cars suffer from inferior performance (average response = 3.17). Fortunately, other Maine vehicle owners do not share this perception of inferiority.

Short run success of the Campaign will depend upon vehicle turnover

The success of the state's Campaign can be measured over the short and/or long term. Several factors can decrease the short-run success of eco-labeling programs: one of these is the frequency of product purchase. When products are purchased frequently consumers are more likely to be exposed to, and/or pay more close attention to, messages about product quality. Less exposure or attention leads to less success in altering buying behavior. In addition, there is a measurement problem when attempting to measure success by observing short-run changes in buying behavior. For example, Maine's Campaign only applies to <u>new</u> cars and trucks sold in Maine; if new vehicles are bought infrequently or if many people choose to buy used vehicles then it will be difficult to observe whether the Campaign increases sales of environmentally better vehicles.

To get an indication of how well the program will impact sales in Maine and how difficult it may be to observe a short-run buying shift, we asked Mainers when they bought their current vehicle, whether that vehicle was new when purchased and whether the vehicle was purchased from a dealer in Maine. The answers to these questions gives us an indication of how relevant the labeling of new greener vehicles are within the overall vehicle market, and provides some indication of how successful the program will be in the short run.

Results indicate that Maine is generally a used car market, as 57 percent of the survey respondents bought their current vehicle as used. Further, Mainers generally buy new vehicles only every three-and-a-half years. The implication is that measuring the short-run success of the vehicle labeling program will be difficult to observe. However, on a positive note we also find that among new car buyers, about 40 percent of those who did not purchase a vehicle in the last year did visit a dealer's lot within that time. These Mainers may be visiting the dealer several times before they actually begin the process of buying a car (e.g., they may occasionally visit dealers as more of an exploration of the market situation), or they may be visiting dealers while helping someone else (e.g., relative, friend) buy a vehicle. Thus, it may be that many more Mainers will be exposed to the Campaign than those immediately looking to buy a vehicle.

Another concern is we find only 86 percent of new vehicle purchasers in Maine stated they bought or leased their vehicle from a dealer in Maine; that almost 15 percent did not buy from a Maine dealer is relatively surprising. Certainly some of the respondents have recently moved to Maine from another area and bought their vehicle elsewhere. However, it is also likely there is a significant number of Mainers that may be purchasing their vehicles in New Hampshire to avoid paying Maine State sales tax on the vehicle purchase. Initial analysis indicates that Mainers living in York, Cumberland and Oxford counties (closest to the New Hampshire border) are significantly more likely to state that they purchased their last new vehicle from a non-Maine dealer. Twenty-percent of Mainers living in these counties state they bought their last new vehicle from non-Maine dealers whereas only nine percent of Mainers living in other counties stated they bought their last new vehicle from non-Maine dealers. Purchases of vehicles from these non-Maine dealers will not necessarily be influenced by the Campaign.

We also asked Mainer's what type of vehicle (i.e. car, van, SUV or truck) they plan on purchasing in the future. Most respondents stated they would purchase the same type of vehicle they currently drive (Table 6). That most individuals plan on maintaining their current vehicle type is not surprising as most individuals purchase vehicles to fulfill specific needs (see below);

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as long as those needs do not change then, all else equal, individuals have no reason to change from their current vehicle type. However, needs do change and all other things do not remain equal. One important consideration when purchasing a new vehicle is the cost of driving, which is highly contingent upon fuel costs and the fuel efficiency of the vehicle. On average smaller vehicles types (cars) get better gas mileage than larger vehicle types (SUVs and pickup trucks). Given the rise in gasoline prices occurring during the time the survey was administered, and the uncertainty surrounding future price changes, it is somewhat surprising that Mainers who are planning to switch to another vehicle type are equally likely to consider purchasing a larger, rather than a smaller, class of vehicle.

Table 6. Percent of current vehicle owners stating that they will buy the same type of vehicle in the future; split by current vehicle ownership

Current vehicle owned	Percent planning to purchase:			
	Cars	Station wagons/ mini-vans	Sport utility vehicles (SUVs)	Pickup trucks
Cars	77	6	6	12
Station wagons/ mini-vans	24	60	11	4
Sport utility vehicles (SUVs)	15	3	70	12
Pickup trucks	1	1	6	92

Another factor apt to limit the success of clean car labeling programs is that individuals use their vehicles in many different ways and the usefulness of these vehicles varies across vehicle type. For example, Mainers who place a relatively high degree of importance on commuting to work are most likely to state they plan on purchasing a car as their next vehicle (Table 7). Mainers who place a relatively high importance on transporting their family are most likely to state they will purchase a station wagon/mini-van and those who place a high degree of importance on recreational uses are most likely to say they will purchase a SUV or pickup truck. Finally, those who place a high degree of importance on work-related hauling are most likely to say they will purchase a truck.

Table 7. Mainers' average rating of the importance of a vehicle's primary use in choosing their next type of vehicle to purchase; split by respondents stated choice of the next vehicle purchased.

Importance of:	Cars	Station wagons/ mini-vans	Sport utility vehicles (SUVs)	Pickup trucks
Commuting to work	4.0[a]	3.1[b]	3.6[c]	3.5[c]
Transporting family	3.8[a]	4.5[b]	4.1[c]	3.4[d]
Recreational purposes	2.0[a]	2.3[b]	3.3[c]	3.3[c]
Uses related to job	2.0[a]	2.3[a]	2.2[a]	2.9[d]

[a] where 1 = not at all important, 3 = somewhat important, and 5 = very important
Results within a row that share the same superscript are not significantly different from each other.

As people age their vehicle needs also change. For example, a person's need for a bigger vehicle may be relatively high in their 20's and 30's when they are transporting children. To better understand this phenomenon and its implications for Maine's Campaign, we analyzed what vehicles Mainers' currently own as a function of their age. Because other things also change with a person's age (e.g., one's income) our analysis controls for these other age-related factors. We find that Mainer's vehicle ownership does change with age (Figure 3); Mainers are most likely to own cars when they are younger (less than 30) and older (greater than 70) and least likely to own cars when they are middle age. The SUV and truck ownership trend is opposite the car trend whereas the likelihood of van ownership climbs slowly throughout one's life. There is at least one implication of the above when one understands that Maine's population is increasingly composed of older individuals. The success of the Campaign, as measured by changes in vehicle purchases, may be easier to achieve because as Mainers get older they will find it relatively easier to find vehicles that match their driving needs while also meeting the standards of the Campaign.[7]

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[7] There are currently (2005 model year) a large number of cars (about 120) and vans/wagons (about 30) that meet the standards of the Clean Car Campaign; however there are few SUVs (3) and no trucks that qualify.

Figure 3. Probability of owning a vehicle type, by age
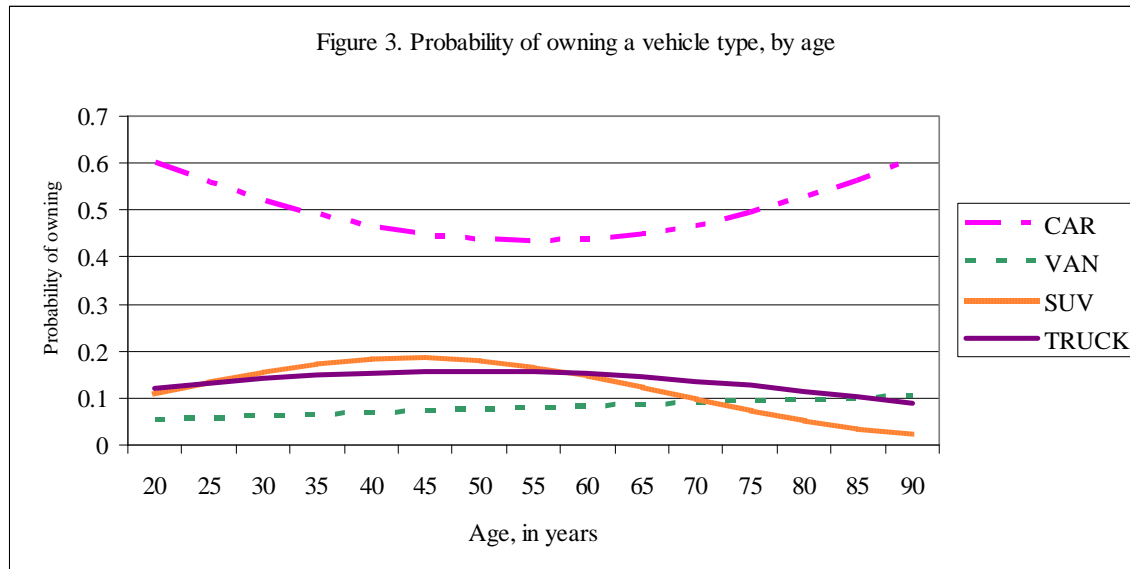
Mainers' desire for environmental information

Currently, most Mainers (80 percent) do not search for information about how much pollution the vehicle produces before buying or leasing a new vehicle. However, most Mainers (70 percent) state they would like this type of information (truck owners state a significantly lower number – 59 percent). Most Mainers (83 percent) find emission information somewhat to very important. The implication is that Mainers are ready for, and may act on, the type of information being provided as part of the Campaign. However, of those Mainers who do search for environmental information, most are searching in the wrong places for this type of information. For example, most Mainers who search for environmental information are looking in Consumer Reports®, or are asking auto dealers (Table 8). Unfortunately, Consumer Reports® does not typically publish this information and most Mainers (87 percent) state they do not find dealers helpful in providing this type of information. However, on a positive note, the Campaign is actively supported by the Maine Auto Dealers Association and dealers will now have printed materials they can give to interested vehicle buyers.

Surprisingly, few Mainers are searching the EPA or Maine DEP websites which <u>do</u> provide the type of information they are looking for. Apparently, few Mainers are knowledgeable

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about the presence of, or are unable to access, these website sources. To help counter this

problem in information transfer, the Campaign includes a website that provides Mainers with

environmental information and links to relevant EPA and DEP information. An important

component of the Campaign is to actively inform vehicle shoppers, through printed materials

available at dealers and at town offices, and through radio and newspaper advertisements, about

the presence of the Campaign website.

Table 8. Where Mainers' who search for environmental information when shopping for a vehicle look for this information.

Information source	Percent searching at specific sources
Consumer Reports	68
Auto dealers	45
Manufacturers' websites	41
Newspapers	18
Radio or T.V. Ads	16
U.S. Environmental Protection Agency's website	15
Maine Department of Environmental Protection	11
Environmental Organization	4

Percents do not add to 100 because respondents could indicate more than one answer

Conclusions

The flow of information among market participants can play a critical role in the efficient

operation of markets. In a broad sense, eco-information programs have the ability to convert a

market in which all goods feature an attribute that consumers can't observe into one in which

consumers can. From a policy perspective, these programs allow consumers to make choices

which match personal preferences and may provide information that actually change's people's

preferences. From a business perspective, these programs may allow firms using particular

techniques to gain market share.

Of course, the above impacts will only occur if the program is successful in educating

and informing consumers. This research indicates the Maine's Clean Car Campaign can play a

role in addressing some of our baseline findings; e.g., the Campaign may be able to correct Mainer's current underestimate regarding the amount of air pollution caused by driving personal vehicles and the erroneous perception that all vehicles produce the same amount of emissions. The results presented here also set the stage to answer the question of whether the Maine Clean Car Campaign will achieve its ends. Unfortunately, it is difficult to assess whether this program will succeed because of the varied signals provided in the baseline data; some results indicate the potential for success while other signals indicate the possibility of failure. At a minimum, the baseline analysis has provided guidance regarding the design of the Campaign and will allow comparisons to future data collections to assess whether Maine's Clean Car Campaign is a success.

This University of Maine research is part of an ongoing effort to understand the factors that affect Mainers' decisions about buying a 'greener' vehicle; several follow-up efforts are currently in progress. First, in order to gauge the effectiveness of the Campaign, we have re-administered the statewide survey upon which this paper is based and plan to compare survey responses. Second, a market share analysis will compare vehicle registration data both before and after the Campaign to determine if the vehicle composition in Maine is changing, which may also be an indicator of the Campaigns effectiveness. Third, we will also analyze how people accessed and used the Campaign's website. Fourth, empirical modeling efforts are continuing on the baseline data to study how a consumer's personal characteristics may affect their assessment of eco-labels during the vehicle purchase decision (see Teisl et. al, 2005).

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