

Truck Driver Environmental and Energy Attitudes- An Exploratory Analysis

Christie-Joy Brodrick^a, Lisa Schweitzer^b,
& Suey Spivey^a

^a *James Madison University*

^b *Virginia Tech*

January 23, 2006

INTRODUCTION



- Many programs seek to inform drivers about idle reduction and other conservation programs, such as biodiesel
- Data on drivers limited to safety, health and technology response
- Our goal is to understand truck drivers drivers' environmental and energy attitudes and any relationship this has with their adoption of idle reduction measures

METHODOLOGY

Hypotheses tested in survey of long-haul truck drivers:

Environmental-related

1. Truckers do not hold pro-environmental attitudes.
2. Drivers who hold pro-environmental attitudes are more likely to adopt idle reduction strategies than other drivers.
3. Drivers who value the environment are more likely to show interest in idle reduction than other drivers.

Cost-related

4. Drivers who are concerned about costs adopt idle reduction strategies more so than other drivers.
5. Owner operators are less likely to adopt idle reduction strategies than fleet drivers.
6. Drivers who are concerned about costs are more likely to employ or report an interest in idle reduction.

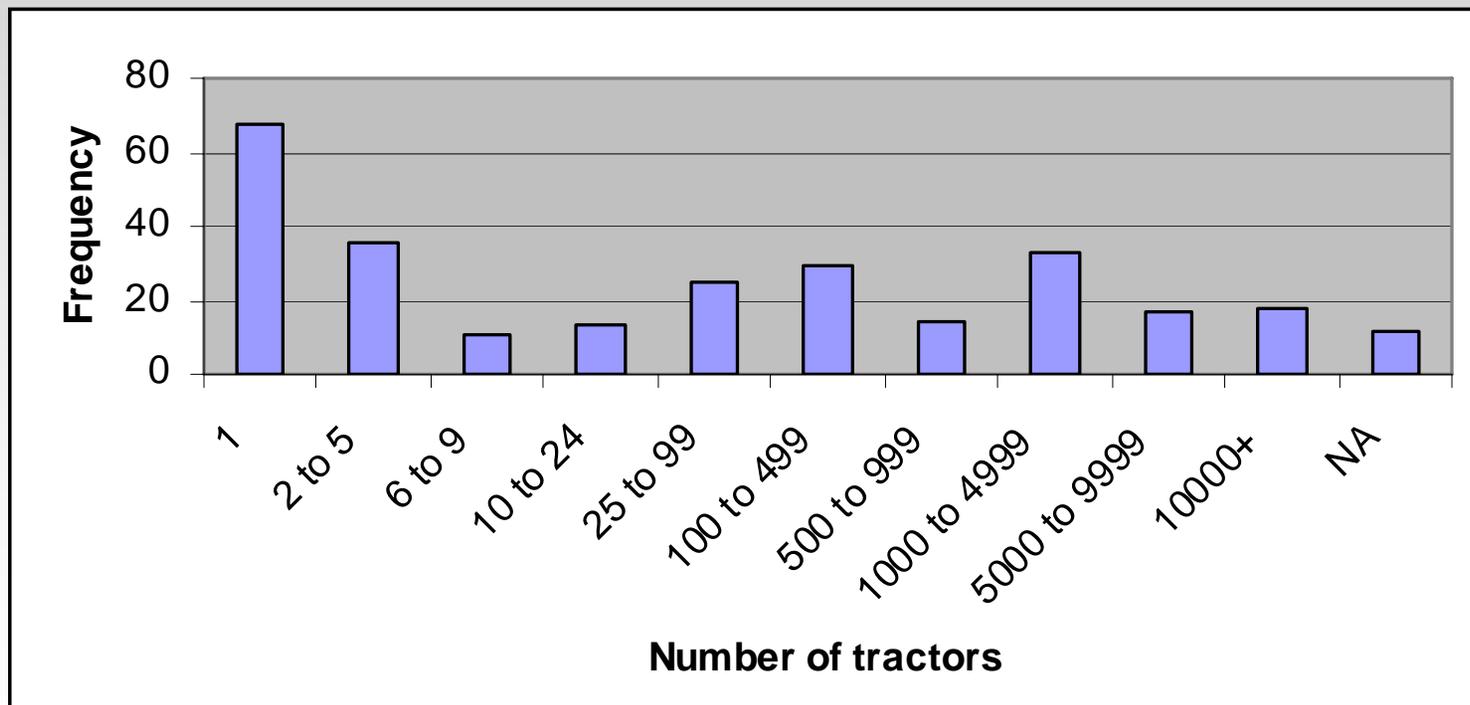
TRUCK OPERATIONS DATA INPUT

- Surveys of 365 truck drivers at 7 truck stops across the country
- January 2003
- TravelCenters of America (TA) Locations: Columbia, NJ; Cartersville, GA; Elgin, IL; Lodi, OH; Richmond, VA; Troutdale, OR
- Caveat: changes in hours of service, anti-idling policies, and fuel cost increases may affect greatly



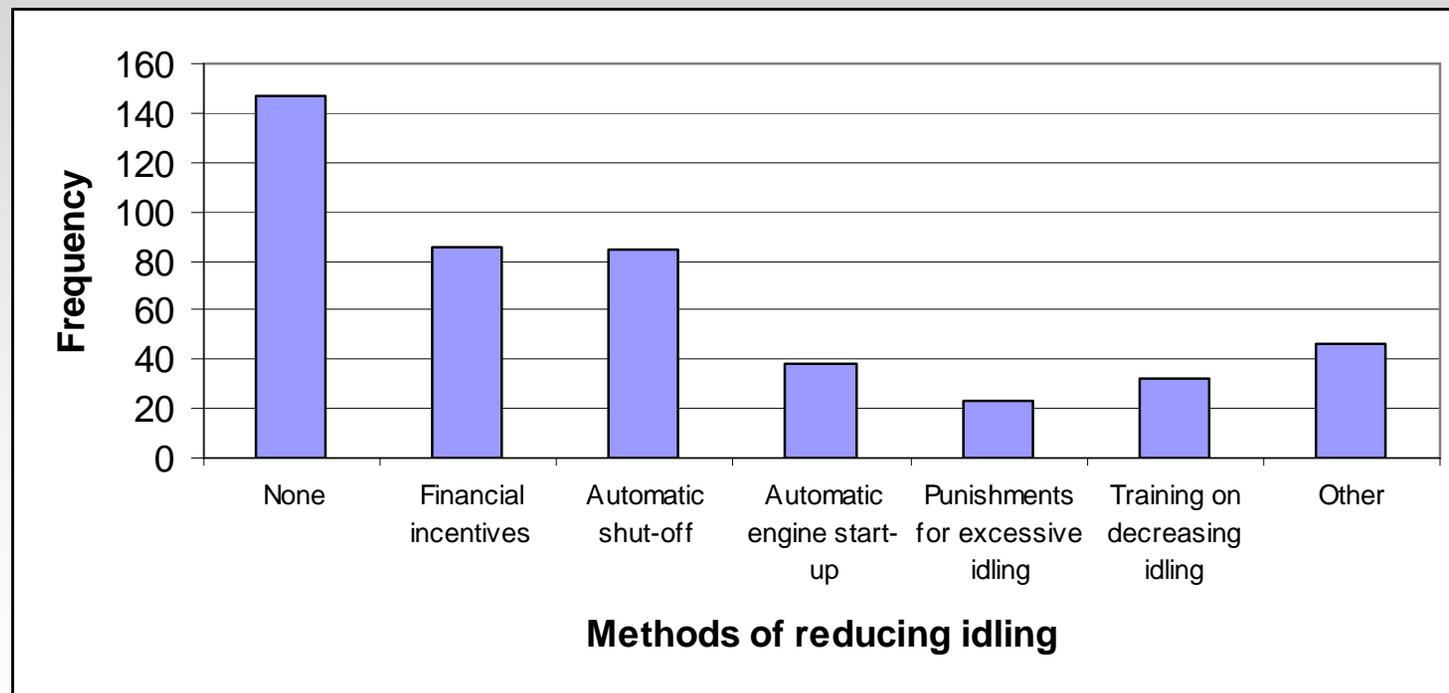
RESPONDANTS

Distribution of groups in the sample according to fleet size



DRIVER RESPONSE TO IDLING OPTIONS

Distribution of idle reduction technologies adopted



OPINIONS ON IDLE REDUCTION

Cost concerns among surveyed drivers

- 61% disagreed with statement that fuel costs were not significant.
- 40% said idling options were too costly.
- 58% percent were neutral on whether the available alternatives were reliable, and there were no significant differences in reporting on perceived reliability between owner-operators and fleet drivers.
- 54% either agree or strongly agree that they are concerned with the cost of idling. They are also, however, concerned about the cost of buying idling alternatives.

OPINIONS ON IDLE REDUCTION

Cost concerns of owner operators compared to fleet drivers

- The statistical tests reveal that in general, owner operators report more costs concerns than fleet drivers.
- Owners were more likely to agree that available idling alternatives are too costly, and they were more likely to agree they felt concern about the costs of fuel lost to idling.
- So owner operators are concerned about fuel loss, but they also are unsure that idling alternatives would pay for themselves.

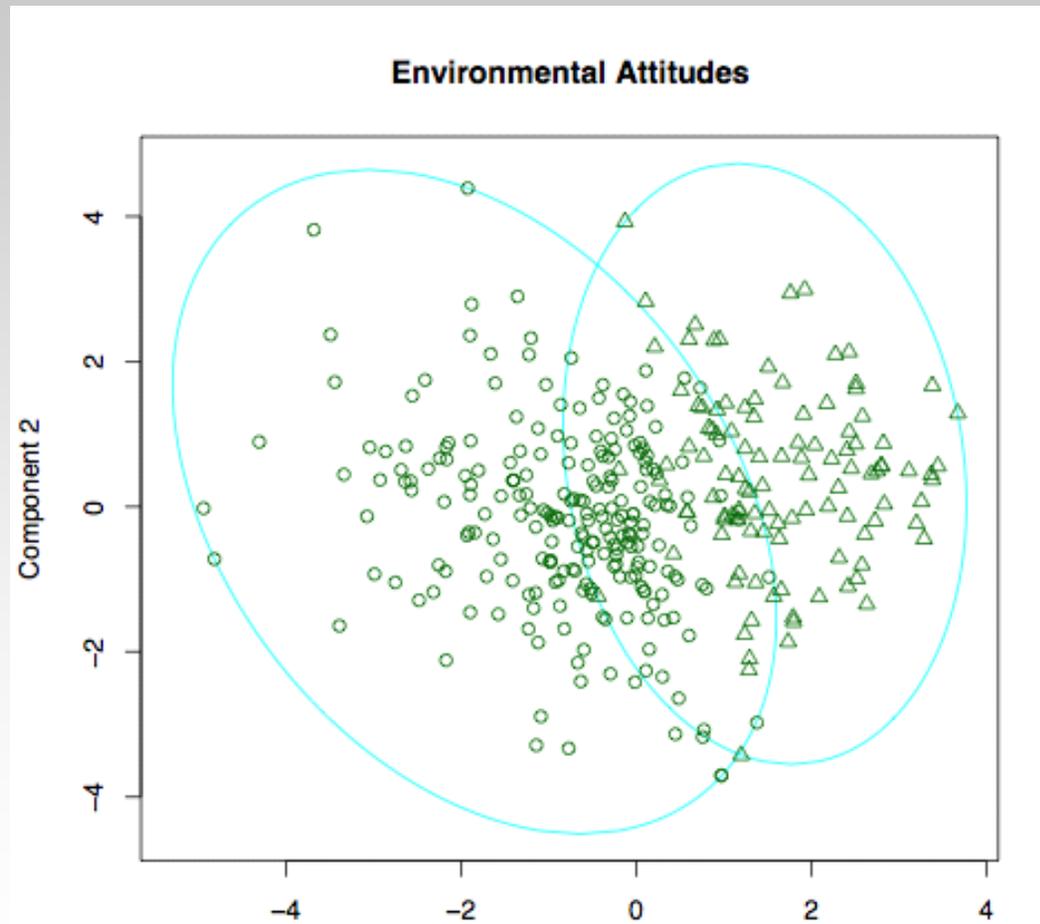
ENVIRONMENTAL ATTITUDES

Environmental values by sample and subgroup

- 71% of men and 89% of women either strongly agreed or agreed that fossil fuel dependency was a problem
- 52% of the men and 63% of the women disagreed or strongly disagreed with the statement that resource depletion was not an issue
- In general, fleet drivers were more likely to disagree that resource depletion was not an issue.
- Greater than 50 percent of respondents of both genders either strongly disagree or disagree that air quality, global warming, and fuel consumption are problems. For example, only 25 percent of the men and 22 percent of the women agreed or strongly agreed that air quality was a problem.

ENVIRONMENTAL ATTITUDES

Cluster analysis of environmental attitudes



Component 1
These two components explain 36.95 % of the point variability.

Linking Anti-Idling Action

Logit model of pro-environmental attitudes (cluster membership)

- A logit model was estimated to predict membership in the cluster that expressed pro-environmental attitudes
- When demographic variables were regressed against a binary variable representing group membership, only education variables were significant.
- Drivers who report some college and college completion have a higher probability of belonging to the cluster of drivers that reported consistently pro-environmental concerns.

Linking Anti-Idling Action

Logit model of idle reduction behavior

- None of the questions reflecting a pro-environmental attitude are significantly associated with idle reduction adoption.
- The most significant association is with the vehicle's age, measured in miles

Linking Anti-Idling Action

Logit model of owner operator interest in idling reduction technologies

- Owner operators were less likely to express interest or concern about the environment, and they were more likely to be concerned over costs
- they were also less likely than fleet drivers associated with large employers to employ idle reduction technologies or strategies
- Yet, even members of this group do express concerns about resource depletion and idling costs

CONCLUSIONS

Even though at the group level, neither owner operators nor fleet drivers express particularly strong environmental values, they do relate concern over resource depletion. In general, fleet drivers reported higher pro-environmental views than owner-operators.

Owner operators, as expected, report cost concerns.

However, a cluster analysis shows that a subset of truckers consistently expressed agreement with pro-environmental statements.

Membership in the pro-environmental group is largely unrelated to driver characteristics, except for education. Drivers with some college and college completion were more likely to belong to the cluster reporting pro-environmental attitudes and concerns.

CONCLUSIONS

Even so, pro-environmental values do not necessarily lead to pro-environmental behaviors. Regressions relating demographic, fleet, cost consciousness, and environmental attitudes repeatedly found that drivers are concerned about fuel costs; this concern makes idle reduction technologies more attractive.

Clearly cost is a issue among drivers, but it is not the case that cost of the alternatives necessarily trumps the savings in fuel costs, as concern over fuel cost is positively and significantly associated with idle reduction. In the models of alternative adoption, owners of older trucks were significantly less likely to adopt idle reduction strategies than newer trucks.