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What is This?
The Reactions of Travelers to Gasoline Rationing and to Increases in Gasoline Prices

B. DAN KAMP, JOHN L. Crompton, and DAVID M. HENSARLING

Much attention is currently being given to possible effects higher fuel prices and/or fuel rationing will have on individuals' travel habits and patterns. This study analyzed the responses of travelers interviewed at the Orange, Texas, Welcome Center. Information was gathered regarding travel plans and the effects either rationing or higher fuel prices would have on future travel plans.

Results of this study indicate that a significant shift from recreational vehicles and full-sized automobiles to smaller, more economical vehicles would be made. Pleasure travel is much more likely to be curtailed than business travel. While most business travelers would seek alternative transportation, pleasure travelers would be more likely to either eliminate the trip altogether or take a shorter trip. These actions may seriously impact upon the entire travel and tourism industry.

In the latter part of 1973, the United States was confronted by an energy crisis precipitated by the Organization of Petroleum Exporting Countries (OPEC) restricting supply and increasing price. In response to this shortfall in supply, the Federal Energy Office (FEO) was charged with responsibility for developing a motor vehicle gasoline rationing plan. This was a contingency plan which would be implemented if demand for gasoline could not be reduced sufficiently through conservation measures and allocation regulations.

Under section 203 (a)(1) of this plan, priorities among classes of users were to be established. Subsequently, the FEO classified the travel industry as a low priority user of gasoline. For this reason, pleasure travel was discouraged. An indication of the success of government discouragement of pleasure travel is provided by visitation to the National Parks which decreased by 13%, compared to the same period during the previous year. However, during the first quarter after the OPEC oil embargo was removed, visitation, compared to the same quarter in the previous year, decreased by only 5%. Since that time there has been a consistent increase in visitation to National Parks.

Impact of Gasoline Price Increases on Demand

Shortly after the OPEC oil embargo was lifted, the price of gasoline to the consumer in the United States underwent an increase of approximately 7 cents per gallon. However, in the subsequent period from the latter part of 1974 through 1978, the price of gasoline increased less than the overall inflation rate. This means that the relative cost of travel decreased between 1974 and 1978, especially for those who purchased a more fuel-efficient automobile in that period. Hence, contrary to initial expectations in 1974, travel patterns did not dramatically change after the OPEC oil embargo. There continued to be an increase in pleasure vacation travel and its associated recreational activities. Some indications of this trend are shown in Table 1. Sales of recreational vehicles increased nearly 175% from 1974 to 1977 and sales of pleasure boats, motors, and accessories increased nearly 150% from 1974 to 1977. Further evidence of increased recreational travel was produced in an A. C. Nielsen report which showed increased participation in 17 of the 22 most popular sport activities from 1973 to 1976. Many of these sports involved a substantial travel component. For example, skiing participation increased 42%.

<table>
<thead>
<tr>
<th>TABLE 1</th>
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<tbody>
<tr>
<td>Value of Recreational Vehicle and Pleasure Boat Sales, 1974-1977 ($ millions)</td>
</tr>
<tr>
<td>Sales of Recreational Vehicles</td>
</tr>
<tr>
<td>Sales of Pleasure Boats</td>
</tr>
</tbody>
</table>

In 1978 the Carter Administration published its proposed revisions of the 1973 contingency plan for energy rationing. These proposals, if implemented, would allocate each licensed automobile a quantity of gasoline which could be purchased only with rationing coupons. Although the quantity allocated to each licensed automobile would depend upon the severity of...
the crisis, the purpose of rationing obviously would be
to reduce gasoline consumption. The political
disturbances in Iran in 1978 resulted in (1) reduced
supplies of oil to the United States, (2) substantial
increases in gasoline prices, and (3) shifts in federal
government pricing policies. As a result of these events,
Energy Secretary Schlesinger predicted that the price of
some types of gasoline would reach $1 per gallon by
1980.

Obviously, the possibility of rationing and the
probability of substantial increases in price have serious
implications for the travel industry. Some studies have
indicated that demand for gasoline supplies is relatively
insensitive to price over the short term but relatively
sensitive over the long term (short term is generally
considered to be less than one year, while long term is
considered to be between one and six years). For
example, one study suggested that an increase of 10% in
the price of gasoline would cause a decrease in demand
of 3.4% in the short term but a decrease of 6.7% over
the long term. Official Federal Energy Administration
estimates suggest that a 10% increase in the price of
gasoline would lead to only a 2% decline in demand
over the short term, but an 8% decline over the long
term. These estimates reflect the possible impact on
travel as a whole and do not provide any insight in the
differing impact of price increases or rationing on
specific categories of travel such as business,
convention, vacation, or visiting friends and relatives.

Objectives of the Study

The prime objective of this study was to gain
insight into the reactions of different kinds of travelers
to rationing and to substantial increases in the price of
gasoline. Interviews were conducted at the Texas State
Welcome Center at Orange, Texas, and 92 usable
responses were obtained. The interviews were completed
in the late summer of 1978.

The questionnaire was designed to enable respon-
dents to indicate the level of rationing and/or price of
gasoline necessary before they would have been dis-
suaded from making their trip. When they had indicated
the level of price or rationing at which the trip became
feasible, respondents were asked to indicate whether
their alternate action would be to stay home, to make a
shorter trip, or to seek alternate transportation for their
trip. Additional data were collected on respondents' income,
number of travelers in the group, purpose of the trip,
and characteristics of the respondent’s travel vehicle.

Characteristics of the Sample

Tables 2 and 3 show the sizes of respondent groups
and the purpose of their trips. The model group size of
two and the predominant vacation motive probably
reflects the September date when data were collected.
Though many families would be constrained by chil-
drens’ school commitments, the weather was still warm
enough to encourage vacation travel. The predominance
of vacation travelers in the sample probably also
reflected their increased proclivity to seek travel and
tourist information at welcome centers.

Analysis

Table 4 indicates that there was a relatively large
proportion of recreation vehicles in the sample, further
emphasizing the vacation orientation of respondents.
Only a small proportion of the sample (10.9%) used
small, fuel-efficient automobiles. However, when re-
spondents were asked what type of vehicle they would
acquire when it was time to replace their present vehicle,
a substantial shift was reported from recreation vehicles
and full-sized automobiles, to more economical inter-
mediate or small-sized vehicles.

Data concerned with identifying the impact of dif-
f erent levels of gasoline rationing on travel patterns
were collected. The chi-square statistic was used to
analyze these data, with an alpha level of .05 indicating
significance throughout the analysis.

There appeared to be a direct relationship between
the efficiency of respondents’ vehicles measured in miles
per gallon and their willingness to undertake a trip at
various levels of rationing. Not unexpectedly, those
travelers indicating that they would have foregone their
present trip even if a relatively generous rationing
allowance of 30 gallons per week was introduced were
driving vehicles which averaged less than 15 miles per
gallon. In contrast, those indicating they would make
their present trip even if the rationing allocation was less
than 10 gallons per week were driving vehicles which
obtained a mean of over 22 miles per gallon (Figure 1).
Another important factor regarding the impact of rationing was respondents' perception of their trip as either (1) desirable or (2) essential. Almost 70% of the respondents indicated that their trips were desirable, while only 30% indicated that their trips were essential. Again, this may reflect the vacation purpose of most respondents. As expected, Figure 2 suggests that if rationing were imposed, those respondents perceiving their travel as desirable would forego their travel more readily than those who labeled their travel as essential.

Almost 77% indicated that they would forego their present trip if they were rationed to 15 gallons per week or less. In contrast only 15.3% of those who classified their trip as essential indicated they would forego their present trip if rationed to 15 gallons or less of gasoline per week. Indeed, over 40% of the “essential” respondents indicated they would not eliminate their trips until their weekly allocation was reduced to below 10 gallons per week (Figure 3). The large proportion of respondents in this latter category was partially accounted for by their perception of the trip as being sufficiently important that it would be considered exempt from any rationing program. Their comments included “It’s business, I’ll have to travel,” “Business travel would have to be excluded from the program,” and “I must travel so the government will give me what I require.”

In addition to reacting to alternative rationing scenarios, respondents were asked to react to different pricing scenarios ranging from a gasoline price of $1.00 per gallon to a price of over $2.50 per gallon. Table 5 shows that vacation travelers and those visiting friends and relatives were prepared to forego their trips at lower price levels than were business travelers. A large proportion of convention travelers reacted similarly, but later in the article we note that convention travelers did indicate that they would seek alternate forms of transportation for such travel if forced to do so.

When the relationship between price per gallon and vehicle type was explored, an unexpected pattern emerged. As expected, more respondents with smaller-sized autos indicated that they would continue to travel when gasoline reached higher prices than respondents with larger-sized autos. Indeed, 70% indicated that the price would have to exceed $2.50 per gallon before they would forego a trip similar to the one they were currently taking. However, other vehicle owners did not

<table>
<thead>
<tr>
<th>Purpose of Trip</th>
<th>Gasoline Price Per Gallon</th>
</tr>
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<tbody>
<tr>
<td>Vacation</td>
<td>$1.00</td>
</tr>
<tr>
<td>Vacation and relatives</td>
<td>38.5%</td>
</tr>
<tr>
<td>Business</td>
<td>10.0%</td>
</tr>
<tr>
<td>Convention</td>
<td>68.7%</td>
</tr>
<tr>
<td>Other</td>
<td>27.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Gasoline Price Per Gallon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation vehicle</td>
<td>$1.00</td>
</tr>
<tr>
<td>Station wagon or van</td>
<td>29.4%</td>
</tr>
<tr>
<td>Full-sized auto</td>
<td>54.2%</td>
</tr>
<tr>
<td>Intermediate-sized auto</td>
<td>32.0%</td>
</tr>
<tr>
<td>Small-sized auto</td>
<td>31.3%</td>
</tr>
<tr>
<td>Large-sized auto</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
show expected patterns. For example, those with intermediate-sized autos indicated a willingness to forego their trip at lower gasoline prices than did those respondents with recreational vehicles, station wagons, and vans, even though they used less gasoline.

Respondents were asked which of three alternative actions they would have adopted if either high prices or rationing had made their current trip unfeasible. The three alternatives were (1) to stay in their home area, (2) to make a similar trip by using alternate transportation, or (3) to go on a shorter trip. Significant differences were found between selection of these alternatives and the purpose of respondents' trips. These are summarized in Figure 4. In terms of protectiveness of travel, the data suggest that respondents were least protective of their vacation travel, since 46% of vacation travelers were prepared to forego their trip and stay home. In contrast, convention and business travelers seemed most protective of their travel. All of the convention travelers, 90% of the business travelers, and 83% of those visiting friends and relatives indicated they would either take a shorter trip or use alternate transportation to make their trip if rationing were imposed or if prices rose significantly. This suggested they would visit other friends and relatives who reside a lesser distance from their residence. It may be interpreted to indicate that visiting specific friends and relatives is of only secondary importance, and in cases where visitation is of primary importance, alternative transportation is sought.

When selection of these alternatives was related to respondents' perception of their trip as (1) essential or (2) desirable, the results reinforced some of the study's earlier findings. Of those who considered their trip to be essential, over 70% indicated that they would still attempt to make the trip but would use alternative transportation (Figure 5). In contrast, the responses of those who perceived their travel as being only desirable, showed a more even distribution among the choices (Figure 6).

Conclusion and Implications

It seems likely that Americans will continue to be confronted with higher fuel prices, restricted supplies, and possibly gasoline rationing. Obviously, these factors will have a marked impact on the travel and tourism industry. This study has provided some insight
as to what the nature of that impact might be.

The study found that respondents were likely to shift from larger vehicles to smaller vehicles when they make their next purchase. Presumably this shift will adversely affect the recreational vehicle and large car market. However, this shift may be an important factor in safeguarding the travel industry’s market. Seventy percent of respondents who owned small-sized automobiles indicated that the price of gasoline would have to exceed $2.50 per gallon before they would forego their present trip. Hence, if more people shift to small automobiles, travel is less likely to be reduced. This intent to shift to small vehicles demonstrates that the long-term elasticity effect to gasoline price increases and rationing may be relatively substantial. This finding supports those cited earlier in this paper.

Most of those respondents with large capital investments in their vehicles are likely to continue to travel fairly extensively, presumably to maximize the return on their investments, even though price increases may be substantial. This perhaps explains the travel industry’s concern to stress price rather than rationing measures to reduce the use of gasoline. If rationing is introduced in the form of, for example, closing gas stations on Sundays, long-distance travel is likely to be more adversely affected than if price increases are imposed. The data suggest that recreational vehicle owners are still likely to travel if gasoline is available. It is the intermediate-size car owner who demonstrated greatest elasticity to price increases. This owner has less investment in the vehicle and may have less discretionary income than larger vehicle owners, thus increasing his sensitivity to price increases.

There appeared to be some confusion among respondents as to what constituted essential travel. Almost half who classified their purpose in this category assumed that even with rationing of less than 10 gallons per week they would be able to make their trip because they would be eligible for exemption from the general allocation level. Businessmen, sales representatives, government officials, military personnel, and others all considered their travel as likely to be exempt from general regulations. Clearly, these assumptions about exemption are likely to be a major source of controversy if a rationing plan is implemented.

Conventional wisdom in the area of demand elasticities for travel suggests that different elasticities exist for business travel, pleasure travel, visiting friends and relatives, and convention travel. It argues that pleasure travel is a discretionary good and therefore most elastic. The data in this study appeared to confirm this, since almost half of the vacation travelers indicated they would stay home once gasoline price reached an unacceptable level rather than make their trip by an alternative mode of transportation or make a shorter trip. This may also reflect the importance of enroute vacation travel. If the flexibility offered by the automobile is removed, the substantial benefits from the trip may be removed for some people.

Conference and convention travel is generally assumed to be elastic. It is argued that many firms perceive auto travel as an expendable extra which can be easily curtailed when budgets are tight. However, all the respondents who were on convention trips in this study indicated that they would take the trip by alternate transportation or take a similar shorter trip if they were not able to take their present trip because of high priced gasoline. They did not perceive convention travel to be discretionary.

Common sense suggests that business trips and visiting friends and relatives are relatively price inelastic. This was supported by the data, since 90% of respondents on business trips and 85% of those visiting friends and relatives indicated the trip would be made or shorter trips substituted. This suggests that these are viewed as essential rather than discretionary travel purposes.

2. Ibid.
4. Ibid.
5. Ibid.
6. Ibid.
11. Ibid.