

MARKETING CONVENTIONAL TRANSIT: INFORMATION PROVISION AND INTRODUCTORY REWARDS

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This paper addresses one aspect of a complex issue: the attempt to develop viable transit systems through the generation of noncaptive patronage. Two general premises underlie the action-oriented study on which this report is based. The first is that middle-income and upper-middle-income residents do not consider public bus transportation as a reasonable mode for intracity travel and in fact do not possess sufficient information to do so. The second is that the best promotion is an actual "initiation" to the services of the bus system. Results from a study involving a small section of Cedar Rapids, Iowa, seem to substantiate the assumptions. In the study, promotional materials and free bus trips were combined with several questionnaires, both before and after a free-trip period.

•THE UNQUESTIONED use of private automobiles is one of the reasons for the poor vitality of public transit in U.S. cities. A strong case can be made for using transit as an aid in solving transportation problems from a simple physical distribution sense. This will permit practical solutions to intraurban travel problems only if psychological issues can be adequately overcome. Increased transit patronage requires either diversion from automobiles or generation of extra trips or both. Except for the presumably small number of additional trips such an advance, if not forced by fuel rationing or significant cost increases, must be accomplished by persuading the traveler to leave the car at home. The task of persuasion is the concern of the transit system, and when this is publicly controlled and subsidized, as is almost uniformly the case, then the promotional effort should be of wide concern throughout the supportive governmental structure.

Underlying the concern for understanding promotional mechanisms and making effective use of these for transit is the belief that most urban areas will have to continue operations with essentially their existing systems. A few cities, for example, Iowa City, have been able to initiate completely new bus operations. In Iowa City, the changeover worked to provide its own publicity and promotion. This changeover was sudden and dramatic; it was coincident with the return of nearly 20,000 students and with the start of a free on-campus shuttle and during the high point of environmental concern. Operators of continuing systems working with existing resources must rely on more subtle application of promotional efforts. The allocation of these scarce resources requires an understanding of people's knowledge about transit and transportation, their conception of transit to serve their trip needs, and the role low-cost efforts can play in effecting changes in travel-oriented decision-making.

Underlying this study, then, is the belief that patronage on existing transit systems can be increased through low-cost public education programs, advertising, and promotional activities (1). As long as fares are charged and subsidies provided, the public seems to be the beneficiary of increased patronage. Increased patronage could reduce the necessary subsidy or, better, justify expanded service. Such effects must be considered as positive contributions toward the quality of life in America's urban areas.

One further note should be tendered before continuing with the paper. According to consumer sovereignty, a fundamental principle of economics [although rigorously rejected by Arrow (2), Baran (3), Rothenberg (4), and others] is that consumers determine with their dollar votes what will be produced during the long run. One could

consider that the marketing correlate to this principle is the concept that advocates that firms begin with consumer needs and work backward to develop products that fill these unmet needs. Kotler has often noted this as long-run profits through customer satisfaction (5). In fact, he has gone one step further, because of the controversy, to call for a societal marketing concept. His formulation calls for a customer orientation backed by integrated marketing aimed at generating customer satisfaction and long-run consumer welfare as the key to attaining long-run profitable volume.

The point of this paper is not to extend, evaluate, or refute any of the concepts noted above. This paper is concerned with a product for which demand is derived from the need to acquire income, to buy food and clothing, and to meet other consumer and social needs. Obviously, when one is thirsty for beer, one is not too concerned about the container in which it arrives for consumption. Nevertheless, Alcoa and other companies advertise and assume that aluminum is a more desired container than others. And presumably, as in the case of Denmark, if consumers want their beer only in bottles, there will be no demand for aluminum cans. The point is that derived demand may not adhere to the same characteristics as that which applies to the marketing concept. Furthermore, the central issue of providing public transportation is a societal question that may or may not be applicable to the societal marketing concept. The component of the viability of public transportation addressed in this paper is whether the product is even considered in the consumer's cognitive set. Thus, the assumption that people do not ride the bus because they do not recognize its potential for fulfilling their trip needs is a realistic one.

PROPOSAL AND HYPOTHESES

Much, although not all, of transit patronage today is captive; that is, riders have no other available transportation mode. This is especially true in the small- and medium-sized cities. The captive user initiates the retrieval of public transportation information out of necessity. A possible assumption is that the small percentage of choice riders indicates few noncaptive riders make similar efforts. The purposes of this study were conceived with recognition of the limited resources of smaller cities or towns and directed toward how these resources might be effectively applied to transit promotion. The main objectives of this study were

1. To determine the level of knowledge the middle-income household now has about the city's transit systems,
2. To determine whether a low-cost promotional effort could effect a change in the level of knowledge, and
3. To induce people to ride the city bus system through various low-cost promotional efforts.

Most products in our society are advertised. These include industrial products such as toothpaste and public services such as libraries or united aid funds. The marketing of the urban transit service has been limited. The small percentage of noncaptive riders indicates, in part, that few potential users have enough knowledge to use the existing system. Thus, a strong case can be made for marketing urban transit. At this stage little can be said as to the direction of this advertising. What can be said is that there needs to be a concerted effort to understand the nature of transit ridership and the potential for promotional activities.

There is no lack of precedent for the task since public libraries, zoos, and the like frequently engage in promotional activities. Insofar as such activities could increase transit ridership through diverted or new demands, the public good would appear to be served as long as there is no deleterious effect on the ratio of total expenditures to services rendered, assuming the total public subsidy does not exceed the capability of the community. Although display space and other means are frequently used to promote transit to the captive rider, much less effort has gone toward reaching the choice rider. This is unfortunate because, although the latter group is of most concern with regard to the purpose of public subsidy of the operation, the former group's patronage is promotionally more rewarding. One must assume that captive riders will make an effort

to learn of and use the system, and thus the return on promotional expense at this level is marginal. This does not argue for eliminating existing informational services for such groups because a certain awareness of the system is required for any use to take place. Rather, what is being argued is that the return on promotional activities is potentially greater in the arena of choice ridership.

The consumers or users of urban transportation, naturally enough, are interested in getting to and from work or school, to and from homes of friends and family, and to and from locations of recreational activities as economically and expeditiously as possible. To the consumer, moreover, satisfactory transportation implies not only economy and speed but also comfort, privacy, protection from bad weather, schedule frequency and flexibility, and a host of other considerations. In short, urban transportation is a consumer good or service and, like others, is purchased because of intangible as well as tangible considerations. One of the least understood aspects of urban transportation is exactly what value consumers place on each of these considerations in making their choices.

Blattberg and Stivers tried to test and evaluate various methods of promoting transit (6). Some of the marketing research of the project indicated that information about transit service is an important factor in determining whether people ride the bus. Their main purpose was to present a mathematical model that can be used to test the effect of potential promotion campaigns.

The Blattberg and Stivers study of inner-city residents tested the hypothesis that as people know more about available conventional transit service they will use the bus more often. Advertising in their study consisted of distributing a detailed transit map along a particular route. The route in question was changed by 1-block deviation and was billed as a new route. The results of this study showed that shoppers are more affected by added information than are those who ride (or might ride) the bus to work.

In terms of administrative analysis, Schneider (7) suggested that the promotion function be separated from the existing public relations position under which it functions in most transit systems at the present time. The "new" position would focus on advertising and a continuing program of timetable distribution. This function would, as a first objective of a promotional campaign, inform actual and potential riders of the speed, time of departure, and price of existing service.

Intracity transportation has characteristics of both a public and a private good. As a public good there is the responsibility of providing a quality service within the technological limits of the era and the capability of the economy to provide required subsidies. As a private or consumer good the transit operation is competing with other modes of transportation. In this competitive aspect the public system should attempt to attract riders and promote the system. Little is known about how this might best be accomplished. This study was an initial attempt to grapple with this complex problem.

THE CITY AND THE SYSTEM

Located in eastern Iowa, Cedar Rapids is an urban region of approximately 125,000 inhabitants within an area of about 100 square miles. The development of the region is typical of many other similar-sized communities that have increasing economic growth and diversity. Planned regional shopping centers, major discount stores, and light industrial districts have contributed to the dispersal of trip origins and destinations. The Interstate Highway System was constructed within the city during 1972 and 1973 so that its impact on transit is yet to be realized.

The public transit operation in Cedar Rapids is the Regional Transit Authority (RTA). In 1973, there were 11 scheduled routes throughout Cedar Rapids. During the previous 5 years these routes were revised, combined, or altered to increase service to homes, to provide better running time, to reduce duplication of service, or to reduce the operational losses. Buses run 12 hours daily from 5:45 a.m. to 5:45 p.m. with either 30- or 60-minute headways, depending on the route. The bus system has reduced services on Saturdays and does not run on Sundays.

The area selected for this study contained 693 households and 3 large apartment

complexes with a total population of approximately 3,400. This particular neighborhood was chosen as the study area because it represents a typical young middle-income section of Cedar Rapids. Incomes in the neighborhood range from \$8,000 to more than \$25,000. A bus route with 60-minute headways serves this neighborhood with 20-minute service to the downtown area.

THE STUDY

The rationale of the study is that automobile-oriented young families neither consider transit as a viable transportation alternative nor are fully aware of its potential for meeting their needs. The study was initiated to investigate this general conceptualization through a design fashioned to determine the informational impact of several experimental treatments, each of which would encourage a transit trip in a differing manner. Pre- and post-treatment levels of transit-related knowledge, combined with monitoring of patronage to and from the sampling area, were employed. The control group consisted of 103 residences, which were selected in a dispersed pattern in the study area. A detailed questionnaire was used to assess the level of knowledge concerning the existing system. This questionnaire concentrated on the system's fare policy, schedules, routes, and subsidy and the resident's use of the system.

Promotional and advertising materials were then distributed to preselected households. The 4 treatments (different combinations of those listed below) were dispersed throughout the study area. Each group consisted of 40 households. The promotional and advertising stimuli consisted of

1. Free tickets (each household received 4 tickets that could be used any day during a 2-week period),
2. A map (this map indicated the route of the bus through the study area to the downtown Cedar Rapids area and included the schedule of this bus route),
3. Informative letter (this letter indicated the destination and scheduled departure time from the area of the Cedar Rapids Miami Extension and special programs of the RTA system).

Approximately 3 weeks after the period in which free rides were allowed, the residents who received the promotional material were interviewed. The primary intent was to focus on the level of knowledge and the effectiveness of the various stimuli. Additional controls were also employed in this study. The ridership to and from the study area was monitored daily beginning 1 month before the study and concluded 1 month after the free-ride period. An on-board questionnaire was also used a month after the completion of the free-ride period.

RESULTS

The general characteristics of the 2 respondent groups as obtained from the home interviews were similar. Minor variations in the income distributions of the 2 samples occurred in the groups having incomes of less than \$10,000 and between \$14,000 and \$16,000. An increase of 14 percent in the \$14,000 to \$16,000 income category of the post-survey group is primarily accounted for in the reduction in the number of households having incomes less than \$10,000. This shift to a higher income level for the treatment group indicates that the incentives and information distributed were not directed toward a more captive user group. No attempt was made to seek adults within a household that possessed knowledge regarding the bus system. The neighborhood residents interviewed were primarily distributed in the 30 to 50 age group. More than 76 percent of the households had 2 or more cars; only 1 percent did not own an automobile. With respect to bus use, a negligible difference in the response patterns occurred. In both the control and treatment groups a large minority (27 to 29 percent) indicated some use of the bus system as a means of intercity travel even though only a few (2 percent) ride daily. The ridership responses were for those individuals interviewed and may not be representative of the entire household.

Also of interest in characterizing the individuals are their places of employment with regard to the sampling area. About 30 percent of all those interviewed worked within

the sampling area, a figure attributable mostly to women homemakers. The major non-home employment was in the central business district, where 25 percent of the respondents had jobs. Trip time from the study area to the CBD by bus is approximately 20 minutes. The average commuting distance to the out-of-home employment locations is approximately 3 miles; the maximum is 9 miles.

Information Levels

During the course of this study, 199 individuals were interviewed. Ninety-six of the households interviewed had received some form of treatment designed to increase their level of knowledge and promote usage of the system. A total of 160 households received promotional material, and 120 of those households received 4 free tickets, either alone or in combination with other material. The remaining 40 households received a letter explaining the RTA system and a map indicating the route and schedule of the Miami Extension through their neighborhood. In the postsurvey, an attempt was made to interview all 160 households. Of the 60 percent interviewed, only 72 percent recalled that they had received promotional material.

The general information levels concerning the RTA system of the adult individuals contacted in this study are given in Table 1. The majority of these individuals were within 2 blocks of the bus route; the maximum distance to the bus route was less than $\frac{1}{4}$ mile. Fewer than two-thirds of the sample knew the location of the nearest bus stop, and only one-third knew when the bus was scheduled through the neighborhood. Most surprising, however, was the small percentage that knew the name of the bus route and the fare. The overall change regarding this fundamental knowledge is positive in every case except for the arrival time of the bus.

Use of Promotional Tickets

Three of the 4 treatment groups received free tickets. Each household in these groups received 4 tickets, which could be used for a free ride on the RTA system during the 2-week period beginning July 17, 1972.

Use and disposition of the tickets by each group are given in Table 2. Free tickets were returned from approximately 1 out of every 4 households. An average of 2.7 tickets were returned by each of these households. The group receiving just free tickets and no additional promotional and advertising material returned the highest percentage. The returns of the 2 groups receiving the supplemental promotional material were similar; the group receiving maps had only a slight increase in returns.

Initial prestudy thoughts were that the groups receiving additional promotional material would have the highest returns, not the lowest. Free tickets alone necessitate the individual's retrieval of route and schedule information to use the system; supplemental materials supply that information. Several explanations for such findings are possible.

A high quantity of advertising mail is received by middle-income households. Much of this is in the form of a packet of material similar to that distributed for this study. A very small percentage of advertising and promotional material received by a household actually provides something free. Thus, it is conceivable that the packet of promotional material elicited a junk-mail reaction.

Another possible explanation is that the households reacted negatively to the supplemental material. Coercion can boomerang. Brehn and Cole postulated that, when a subject's freedom to act is restricted, he or she will react by attempting to regain that freedom (8). Applying this postulated reaction to this study, the people who received only tickets felt that they, in fact, had a choice to make. However, the people who received a letter or a map and a letter with the free tickets felt that, by this explicit information, their freedom of choice was being channeled and controlled. Thus, they reacted by derogating the restricting agency—the bus—and thus did not use the free tickets. The bus system not only is new to nonusers but also has a very negative image. Thus, if their choice is perceived as being restricted, then they avoid using the system. Possibly the free tickets alone did not present this threat.

The distribution of treatment groups with respect to the route should not have been

a factor. Each treatment group was spatially distributed with respect to the route in approximately the same manner. Of the 33 households using the free tickets, 58 percent were located within 1 block of the route and 36 percent were located between 1 and 2 blocks.

Study Area Generated Patronage

Daily tallies of boardings and departures within the study area were kept by the bus driver before, during, and after the promotional activity. The tallies began on June 19 and were continued until August 25. Figure 1 shows a summary of the average daily patronage. The low ridership monitored on July 3 and 5 was not included in the average daily patronage shown in this figure. The bus system did not operate on July 4. Ridership on Mondays, Fridays, and Saturdays exhibited the desired result; patronage increased during the free-ticket period and was sustained thereafter.

Any interpretation here must be cautious. There is no way of determining whether the people choosing to use free tickets on Tuesdays and Thursdays did not choose to ride again or whether they then rode on a Monday, Friday, or Saturday. The patronage data record the result of aggregate behavior over time and not individual behavior. Only an extended trip diary would appear to offer a solution to the behavioral questions raised by these data.

DISCUSSION OF RESULTS

This section summarizes factual findings of the research, gives conclusions regarding bus system use and promotion among middle-income households, and reflects on the study with a view to improving similar promotional efforts and their evaluation.

The research reported here focused on courses of action relating to the marketing and promotion of urban transit. It presumes that, barring substantial improvements in service levels or radical changes in attitudes, the appeal of conventional urban transit to choice riders rests largely on marketing strategies. It suggests that awareness about the service, its quality, and the expected return all influence the probability of choice ridership. The purpose of the study was to examine the level of transit operation knowledge among potential choice riders and to evaluate the effectiveness in terms of information gain and ridership increase of several promotional activities.

Findings

With regard to the study area and the methodology conducted to date, the following are the principal findings emanating from this effort.

1. The majority of the middle-income households having the availability of bus transportation in their immediate neighborhoods did not possess sufficient information to use the service that they subsidize. The percentage of those knowing the minimal information necessary to complete a trip by bus—the name of the route, the fare, and the schedule—reflects the relatively few regular and occasional riders.

2. The promotional efforts increased the level of knowledge of those reached (based on the assumption that the comparison between the control and treatment groups is valid).

3. To discern variation in information gain with respect to treatments was not possible, but in terms of ticket usage, more than half of the tickets returned were from the ticket-only treatment.

4. Free tickets were returned from approximately 1 out of every 4 households, although it was determined that not all of this usage was new or first-time ridership. In several instances occasional riders used the tickets; in a few other cases the tickets were given to domestic help. However, a majority of the free tickets used represents newly generated use from the study area, as determined by post-treatment surveys.

5. Bus ridership, as measured by departures from and arrivals to the study area, increased during the free-ticket period. The additional ridership was most strongly reflected in the number of bus boardings (departures from the study area) on Tuesdays and Thursdays.

Table 1. Percentage of group expressing correct information.

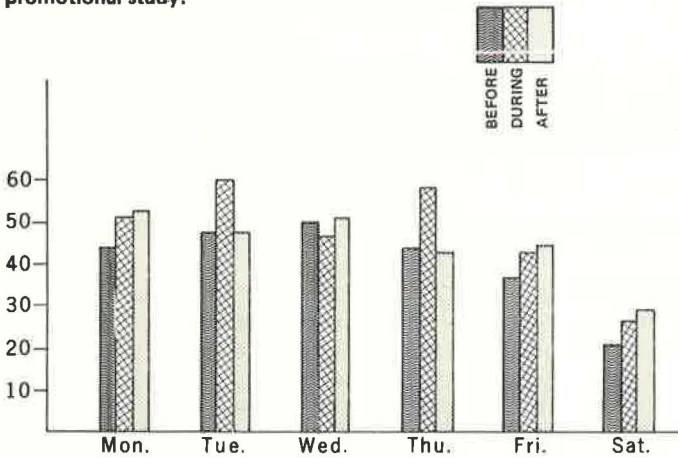
Information	Control Group	Treatment Group	Relative Change
Normal adult fare	18.4	34.8	89.1
Name of bus route	19.4	29.0	49.0
Uniformity of daily schedule*	32.0	42.0	31.2
Nearest stop to home	57.3	62.5	9.1
Number of routes in RTA system	0.0	4.3	-
Time of bus through neighborhood	34.0	29.4	-10.6

*With the exception of a 5-minute perturbation during the peak evening hours, the schedule is uniform, and that information was given in the letter sent to the treatment groups. Therefore, a uniform schedule is interpreted as the correct response.

Table 2. Disposition and use of free tickets.

Treatment	Tickets Returned		Households Returning Tickets		Average Tickets per Household Returned	Distribution of Tickets (percent)
	Number	Percent	Number	Percent		
Free tickets alone	50	31.3	17	42.5	2.9	55.5
Free tickets with promotional letter	17	10.6	7	17.5	2.4	18.9
Free tickets with promotional letter and map with schedule	<u>23</u>	14.4	<u>9</u>	22.5	2.6	<u>25.6</u>
Total	90	18.8	33	27.5	2.7	100.0

Figure 1. Average daily patronage from sample area during promotional study.



6. The ridership increase was not fully sustained following this period, but continued at a slightly higher rate than before the promotional activities.

Conclusions

1. Middle-income households do not generally possess enough information about the existing transit operation to evaluate this alternative in fulfilling their trip purposes. A minority of the households interviewed knew the basic prerequisites for use: name of the bus route, schedule, fare, or where the bus stops.

2. Information levels of middle-income households regarding existing public transit systems can be improved through relatively inexpensive promotional activities. The change in information level will not necessarily equate to changes in ridership levels, however.

3. Free-ticket incentives, which are almost no cost to the bus operation, apparently prompted the individuals to acquire information about the transit operation. Free tickets distributed in conjunction with additional promotional material were used less frequently.

4. Methods of promotion used in this study appear able to generate short-term increases in ridership; long-term effects could not be determined from this study.

Reflections

In the past decade researchers and theorists have discussed in the transportation literature the concept of mode choice. The real or abstract attributes of a transportation mode are viewed as being evaluated by the choice rider. Such work appears to suffer from 2 complementary problems. The first of these weaknesses rests on inadequate understanding of evaluatory mechanisms; that is, a psychological behavioral approach has only recently begun receiving adequate treatment (9). The second weakness stems from an incorrect assessment of how people actually behave. The distinction between the 2 problems is this: The first asks how choice or evaluation takes place given all relevant information about the courses of action, modes, or whatever is the object of evaluation; the second asks whether people actually engage in this evaluatory process before making a trip in an urban area. The research being discussed reflects on the second of these 2 issues.

To exemplify the issue being raised, consider the usual association hypothesized between automobile ownership and mode choice. A transit trip by an automobile-owning family is usually interpreted as a choice ride within this schema. However, ownership and availability are not synonymous so that many such trips may result from temporary captivity. Nevertheless, in either case information is required to make use of the transit service. The choice may have been not one of which mode but one of whether a trip would be made. Many intraurban trips that might be made by transit may possibly be delayed until the family automobile becomes available. The question then is not one of mode choice; if a trip is not considered, a mode cannot be chosen!

The trip-delaying behavior and nonconsideration of modes other than the automobile may be attributable to the knowledge level requirements that must be satisfied prior to use, or they may be a function of a preordained decision to travel only by private automobile and exclude all other less desirable modes. The former problem is amenable to transit-marketing strategies as attempted in the present research. The latter behavior would seem to require a major mental adjustment that might be, but is not likely to be, attained through such approaches. Therefore, interest is directed primarily at the knowledge-consideration dilemma as expressed above.

How does an individual make the decision regarding the existing public transit systems? Does the choice individual examine the exterior and interior design of the vehicles, the system's fare, route, and schedules and then evaluate the set of opportunities and amenities against his desire set? Or is there a more simplistic decision process?

Evidence from this study seems to point toward a near absolute type of decision rule: When the automobile is available, make the desired trip. When the automobile is not available, delay the trip if possible; otherwise, consider other modes. The

"otherwise" clause in the above decision rule may on occasion initiate consideration of the public bus system. More often than not, however, it initiates a phone call to a friend or neighbor!

When use of the bus is considered by an infrequent user or nonuser, the evaluation process requires the attainment of considerable knowledge about the system. Since in almost all cases this requires the individual's initiative, his or her desires to use public transit on an occasional basis may be diminutive. In essence, why should the effort be made when the automobile is readily available or soon will be? A substantial number of individuals in this study within 3 blocks of the bus route did not know and were not interested in knowing the name of the bus route, where the bus went in the neighborhood, and where it stopped in the neighborhood. If forced into a temporary captive position in conjunction with a necessary trip, maybe then they would seek out the information. It is reasonable to assume that with only 1 automobile in a family there are times when occasional usage of transit would be desirable or required. A group less than 20 percent of the total interviewed occasionally used the system and possessed a basic knowledge of the system's attributes. The variability in their information levels indicates that many initiate information on a trip basis, probably in part a function of the time since the last use.

Boosting information attainment among the occasional users may promote ridership because the intent is not a major alteration of behavior but rather an encouragement to continue past patterns. The key group in promoting choice ridership, however, is the current nonuser who lacks information and experience but has not ruled out the mode entirely. The precise size of this group is currently unknown but probably includes a majority of the nonusers. How can the public transit system get these individuals to try the system for the first time, provide the ability to evaluate the system on its merits, and thereby place the bus system within this group's consideration? Not all will become regular users, but occasional use should be promoted including other than temporary captive situations. Free tickets, as demonstrated in this study, are sufficient incentive to promote some usage by this group. This is an extremely low-cost incentive. Other levels of incentives, such as ride-and-shop programs, cost even less and have demonstrated some success. Still others are needed and possible. If the Flint, Michigan, study is a yardstick, amenities on board the bus may be an overly expensive and nonproductive means of attracting initial riders, but in the long run may be effective in retaining riders.

For travel to a desired destination, even a system having user-preferred design characteristics and amenities may never actually compete with the private automobile. Unless people know about and understand the bus system, it cannot be used as a means of accomplishing a desired trip and it will not be evaluated on the attributes whether minimal or extravagant. To accomplish this, the individual must try the system to personally perceive and evaluate its merits.

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