# Analysis of Suburban Shopper Market for Public Transit: A Case Study

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During the early 1970s, there was a significant resurgence in the urban public transit industry. This resurgence was due in part to a fundamental change of approach by transit operating agencies in regard to the marketing of their services. Where public transit was once regarded as a standard, utilitarian service provided to a general public, it is now seen as a commodity to be sold by using techniques originally developed in the highly competitive consumer marketplace. These have been used to improve the market appeal of the transit service and to actually sell this service to potential users.

So far, the marketing efforts of many transit agencies have tended to stress nonservice improvements: promotion, pricing, and public relations aspects of marketing. Public relations training for drivers, progressive slogans, advertising campaigns, and promotions have been used extensively. Such nonservice improvements have proved to be relatively inexpensive and have succeeded to a degree in improving the image of public transit and in attracting public transit patronage.

In marketing, a product or service that is clearly inferior to another has only limited market potential. In many cases, a product or service must be improved before marketing techniques can be of any real value in boosting sales. This is the general situation of the transit industry today. In most cities, the level of service provided by public transit is inferior to that provided by the private automobile. Until the service provided more accurately reflects what the public wants and needs, promotion and public relations campaigns are limited in effectiveness. Service improvements must necessarily precede or, at the very least, run concurrently with nonservice efforts.

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## TRANSIT MARKETING FOR SHOPPERS

Traditionally, the major emphasis of urban transit has been on the home-work trip, concentrated during two relatively short peak periods of the day. This is understandable since more urban trips are made for the purpose of travel to and from work than for any other single purpose. Initial improvements in transit service have generally been made in the area of new or expanded express routes primarily serving workers during peak hours.

Yet the shopping trip market should not be ignored. Slightly more than one of every five trips in the Denver metropolitan area are made for shopping (1). Even though shopping trips are somewhat more dispersed than work trips, both in time and spatial distributions, the number of these trips alone suggests that marketing efforts might be applied successfully to increase transit ridership. Furthermore, the shopper population provides a well-defined and specialized market, to which specific marketing techniques could be applied. It is also possible that specialized transit service for shoppers could be operated during off-peak hours, when transit facilities are not used to capacity.

## DEFINITION OF PROBLEM

In Denver, the percentage of work trips via transit is more than three times that of shopping trips made by transit (1). Among other things, this reflects the emphasis given the home-work trip by the transit authority. One might be inclined to say that the home-work trip is better suited for transit use. For the Denver central business district, however, the percentage of shoppers who use transit is comparable to and in fact exceeds the percentage of workers who use transit (2).

The question explored in this research is: How can marketing techniques be applied to urban public transit to influence shoppers to use transit? Two aspects of this question have been explored: Is it feasible to institute local shopper-oriented transit service, to major shopping centers or districts, comparable to that provided for CBDs? and, What special features should be

incorporated into the service as a means of attracting shoppers to public transit?

## DELIMITATIONS

The Denver, Colorado, metropolitan area was used for the research. Only regional shopping centers were considered for transit service. Neighborhood and community shopping centers and districts were excluded, since shopping for convenience items, particularly groceries, accounts for a large portion of the total shopping activity that takes place at these areas. In the regional shopping centers, the shopping activity is predominantly for comparison items for which public transit is more suitable (3).

## DATA COLLECTION AND ANALYSIS

A list was drawn up of all regional shopping centers in the Denver metropolitan area. Selected physical and socioeconomic characteristics of each shopping center and its nearby market area were assembled and compared. This analysis revealed a general trend for smaller, older shopping centers to be located in regions of higher population density closer to the CBD. As it was hypothesized that a significant difference in trip characteristics exists between older and newer centers, the decision was made to study one shopping center from each category. Villa Italia Shopping Center in Lakewood, Colorado, was selected as a representative of the larger, newer group of centers in an area of low population density. Lakeside Shopping Center in Wheat Ridge, Colorado, was selected to represent the smaller, older centers closer to the CBD.

The service envisioned in this study was a collection of bus routes focusing on the suburban shopping center as a collection-distribution point and extending out in short one-way loop routes into the neighboring communities. With such a system, the immediate surrounding community would have convenient access to the shopping center via transit. Frequent bus stops in the residential area were visualized as a means of shortening walking distances for users. At the other end of the trip, special boarding facilities close to the shopping area would eliminate the long walk from parking lot to stores.

The principal method of data collection was an attitude survey, conducted by telephone, to determine the potential market for transit service in the vicinity of each center. Results from this survey were first tested statistically against 1970 census and more recent demographic data, then calibrated by means of data obtained through two other methods: counts of traffic and individuals at each shopping center and a personal interview survey to determine the origins of the center's patrons.

These data were assembled and analyzed to yield information concerning the suburban shopper's needs and preferences and to determine the feasibility of instituting transit service in the vicinity of each shopping center. A computer model was used to analyze the effects on transit patronage of four parameters: headway, travel time, fare, and number of blocks walk to the bus stop. A number of routes were then subjectively drawn up for each center. Ridership and revenues for each route were projected from the data collected, costs were projected from data obtained from the Denver Regional Transportation District, and the economic viability of each route was evaluated. Optimal operating parameters (fare and headway) were determined for each system of routes.

For evaluation purposes, the subsidy per passenger was used. If the subsidy per passenger for a route or system of routes was less than or equal to the current 1974 Denver Regional Transportation District subsidy per passenger of $0.2182, the route was considered to be feasible. A route for which the subsidy per passenger exceeded the 1974 value but did not exceed the projected 1975 subsidy per passenger of $0.48 was considered to be marginally feasible. A route for which the subsidy per passenger exceeded the projected 1975 subsidy per passenger was considered to be unfeasible (4).

On completion of the feasibility analysis, a user preference study was undertaken to determine the primary factors influencing the modal preference of shoppers and to point out features that could be incorporated into the shopper service to attract shoppers to it. For this part of the research, an attitude survey was administered to persons living within easy access (one block or less) to three existing bus routes providing good service to the CBD.

## RESULTS

### Traffic Counts and Shopper Origin Studies

The distribution of trips to analysis zones in the immediate vicinity [3.2-km (2-mile) radius] of each shopping center was determined by the traffic counts and shopper origin studies. The smaller shopping center, Lakeside, which attracted a smaller total volume of shoppers, attracted considerably more shoppers from areas near the shopping center. The patronage of the larger center, Villa Italia, was found to be much more widely dispersed than that of the smaller center. Of importance also is the fact that a considerable amount of shopping is done at both shopping centers during the evening peak hours. Therefore, operation of any shopper bus service throughout the evening peak period seems necessary if continuity of service is to be provided. Little travel to either shopping center is done during the morning peak period.

### Attitude Survey and Benefit-Cost Analysis

On the basis of costs and revenues projected from the attitude survey results, the feasibility of each proposed route was determined. Of the 20 routes examined, 4 proved to be feasible, 3 marginally feasible, and 13 unfeasible. It is significant to note that only one of the proposed routes in the Villa Italia Shopping Center vicinity met even the marginally feasible criterion. Similarly, the proposed routes in the Lakeside Shopping Center vicinity that failed both feasibility criteria were all located on the side of the shopping center away from the CBD, in communities with suburbanlike sprawling development. The routes judged to be feasible were all located on the older, more densely developed side of the shopping center closer to the CBD. Overall, the route system in the Lakeside Shopping Center vicinity met the feasibility criteria; the route system for the Villa Italia Shopping Center did not.

### User Preference Study

From the results of the user preference study, it would appear that where excellent bus service is offered to the CBD, the bus claims a good share of the market for shopping trips. Four major reasons explain why the bus is preferred by so many:

1. Difficulty of parking and driving downtown;
2. Low cost of travel by bus;
3. Convenience of the bus and perceived overall shorter travel time by bus between the areas surveyed and downtown; and
4. Strong trend of individual dependence on transit, due in part to the low car ownership in the areas surveyed.

The first reason is by far predominant, indicating that the popularity of the bus is not of its own making but in actuality should be attributed to the private automobile's inconvenience for shopping trips to the CBD. Presumably, transit ridership would not receive the same stimulus where suburban shopping centers are concerned.

The reasons for use of the private automobile are much more diverse. It appears significant that four of the five reasons most often mentioned relate to the inconvenience of the bus:

1. Difficulty of carrying packages on the bus,
2. Long travel time by bus,
3. Inconvenience of the bus for trips where multiple stops are made, and
4. Having to wait for buses.

This suggests several features that could be incorporated into transit services designed specifically for shoppers:

1. Facilities on buses for carrying packages. Possibly, racks could be installed near front and rear doors of buses and sturdy shopping bags carrying the logo of the transit system could be sold by means of vending machines at boarding locations in shopping centers or could also be given away on special promotional days.
2. Facilities to make waiting for the bus more pleasant. Attractive, comfortable bus shelters would fulfill this need as much as is possible. This is desirable at selected spots along the route and particularly at the shopping centers.
3. System permitting users of the shopper service to make stops along the route and reboard another bus without charge. This would make it easier for shoppers to make combined trips via transit.

The survey results also suggest that a concerted effort will be required to make the potential users aware of any new service. Publicity for new shopper service appears to be needed on an ongoing basis and in the period following initiation of a new route.

## CONCLUSION AND RECOMMENDATIONS

### Feasibility of Shopper Service

The results of the study indicate that local shopper-oriented transit service is generally feasible for the older regional shopping centers of a metropolitan area, located in areas of medium to high population density. For all other shopping centers, including the newer regional centers in low-density suburbs and neighborhood and community shopping centers throughout the metropolitan area, such service appears to be unfeasible at the present time.

A combination of circumstances are seen as contributing to the applicability of transit service to the older regional centers:

1. Patronage of the older shopping centers is drawn from a fairly compact area in the vicinity of the center.
2. Major shopping activity at these shopping centers is shopping for comparison goods rather than for convenience goods such as groceries.
3. On the average, households in neighborhoods near the older shopping centers own fewer cars than households in the newer low-density, automobile-oriented suburbs and have a lower average household income and a greater proportion of elderly residents.
4. Most neighborhoods in the vicinity of the older shopping centers are currently served by conventional transit routes and have been for some time. Residents of these areas, consequently, are more accustomed to using transit and more willing to use it.
5. Street patterns in neighborhoods near the older shopping centers are generally more amenable to transit use than those in newer suburban neighborhoods where cul-de-sacs and curvilinear streets are the rule rather than the exception.

### Special Features of Shopper-Oriented Service

There is no reason why transit service that will be used primarily by shoppers needs to be identical to service catering primarily to home-to-work commuters. Therefore, the study has identified a number of features of a shopper-oriented transit service that potential users judged to be desirable:

1. Fare of $0.15 to $0.25 for local shopping center service;
2. Bus within one block of the user's home, if possible, and two blocks at most;
3. Difference in travel time between the bus and the private automobile of no more than 15 min;
4. Facilities for the convenient carrying of packages on buses, e.g., racks at the doors of buses or distribution of shopping bags to bus users;
5. Facilities to make waiting for the bus more pleasant, e.g., comfortable shelter facilities at shopping centers; and
6. Transfer system that would make it convenient for a shopper using the bus to make multiple stops.

Other operational details for the shopper service that are desirable from the passenger standpoint include

1. Scheduling that is uncomplicated and easily remembered. Buses departing on the hour, or a similar clock-based schedule, would seem to be the most acceptable means of accomplishing this.
2. Easily recognized route designations. In a situation with multiple routes converging on one location this is essential. Color coding of buses with matching colors at boarding areas and on schedules and other printed materials would adequately fill this need.
3. Clearly designated boarding areas for each particular route at the shopping center. These designated areas would make it easy for passengers to find and board the desired bus.

## DISCUSSION OF STUDY METHODS

Through all that has been determined in this study, the following question remains: Can the attitude survey results be accepted as accurate? The present situation involves a unique type of service proposed for many people who have not had adequate transit service for years. There is really no method of judging

short of actual trial service. Transit demand forecasting, like any other type of forecasting, is subject to many unknown and unpredictable influences that can only be fully evaluated in actual operation.

It was felt that the open-ended question format used in the attitude survey, asking the respondent to specify his or her own tolerance limits for service levels, was a suitable means of minimizing biased responses and of determining an individual's potential use of transit. This format avoided reliance on point blank questions such as, Would you use the transit service? The results generated by the analysis, yielding a spectrum of travel demand curves for different areas, lend support to the belief that the responses were reasonably valid.

Another question could be raised regarding the evaluative criteria used in the present study. The transit routes proposed were evaluated solely on the basis of the projected amount of subsidy per passenger. It was felt that the use of this criterion takes into account the patronage of the route and also its cost-effectiveness. The new routes were not required to balance expenses with farebox revenues to meet the feasibility test but were expected to perform at a level equal to that currently met by the transit system as a whole. Whether other criteria should be included in feasibility analyses of new transit routes is not within the scope of this study. Other criteria, such as reduction of traffic congestion, reduction of air pollution, provision of transportation for the disadvantaged, or conformance with adopted community transportation planning objectives, could be included in a benefit-cost analysis. Use of such criteria would almost certainly enhance the feasibility of the shopper routes.

The market research analysis conducted in this study is undoubtedly time-consuming and therefore costly. But public transit planning for suburban areas must rely on up-to-date survey work, as Benson affirms (3): "Unless the metropolitan home-interview survey is recent, no suburban bus improvement needs study should be undertaken that does not include surveys." If metropolitan area residents want public transit service that is geared to their wants and needs, then the time and expense of extensive market research will be required.

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