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TCRP Report 36

A Handbook: Using Market Segmentation to Increase Transit Ridership

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Report 36

A Handbook: Using Market Segmentation to Increase Transit Ridership

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Subject Areas

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TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213--Research for Public Transit: New Directions*, published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration--now the Federal Transit Administration (FTA). A report by the American Public Transit Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes a variety of transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA; the National Academy of Sciences, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at any time. It is the responsibility of the TOPS Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

The TCRP provides a forum where transit agencies can cooperatively address common operational problems. The TCRP results support and complement other ongoing transit research and training programs.

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The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the National Research Council, the Transit Development Corporation, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

To save time and money in disseminating the research findings, the report is essentially the original text as submitted by the research agency. This report has not been edited by TRB.

Special Notice

The Transportation Research Board, the National Research Council, the Transit Development Corporation, and the Federal Transit Administration (sponsor of the Transit Cooperative Research Program) do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the clarity and completeness of the project reporting.

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FOREWORD

*By Staff
Transportation Research
Board*

This handbook will be of interest to transit managers, marketing professionals, planners, and others interested in the potential implementation of market segmentation strategies to increase transit ridership. Market segmentation is the identification of groups of people--or market segments--that have similarities in characteristics or needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix. This handbook provides an overview of market segmentation--what it is and why it is relevant to public transit agencies. It serves as an introduction for managers to the basic concepts and approaches of market segmentation and provides steps and procedures for marketers or market researchers who have the responsibility for implementing a market segmentation program. The handbook places special emphasis on issues that must be addressed when using market segmentation, procedures and terminology that one may encounter in connection with segmentation, problems likely to arise in implementing segmentation studies, ways to encourage the use of market segmentation at transit agencies, and methods to translate segmentation findings into strategy. Private and public sector examples of market segmentation analyses are used extensively throughout the handbook to illustrate concepts presented. In addition, the handbook provides the results of market segmentation analyses performed as part of this project at three demonstration transit agencies: Boise Urban Stages, the Milwaukee County Transit System, and the Washington Metropolitan Area Transit Authority. As a result of these demonstrations, key market segments are identified and reported in the handbook.

Public transit exists in a competitive environment where many potential customers have choices ranging from driving alone to telecommuting. For a variety of reasons, transit ridership has generally been declining. In the face of declining ridership trends nationwide as well as in many localities, transit managers are challenging their organizations to find the most effective methods of maintaining and increasing ridership. New methods are being developed in an environment of limited budget resources.

Delivery of new or improved transit service is critical to taking advantage of new market opportunities. Market research can be used effectively by managers to scan and evaluate opportunities that exist for increasing ridership, particularly by establishing a base of knowledge on local customers. One market research tool--frequently used effectively in the private sector--is market segmentation. Transit services often are designed and operated effectively with little or no consideration of the market segments to be served. However, there is an increased awareness that all current and potential transit users are not the same, and that satisfying their needs, preferences, and motivations requires a better understanding of who they are. Thus, transit system managers are learning that analysis of market segments can lead to an even higher degree of success while making the service design and promotion more cost efficient.

Market segmentation provides the transit manager with a better understanding of the customer, and it can promote a better balance between the operational and promotional functions of the transit agency.

Under TCRP Project B-9, research was undertaken by the Northwest Research Group, Inc. to develop guidelines for transit managers to effectively use market segmentation in developing strategies to increase ridership. To achieve the project objectives, the researchers conducted an extensive literature review of market segmentation strategies; identified and documented 15 case study examples of organizations--in both the private and public sectors--that have successfully employed market segmentation methods and strategies; and conducted significant market segmentation analyses at three demonstration transit agencies. At each of the three transit agency demonstration sites, 1,000 telephone interviews (taking 35-40 minutes each) were conducted to identify characteristics lending themselves to potential market segmentation analyses. The results of these analyses have been incorporated into the handbook.

An unpublished companion report, prepared under this project and entitled *Using Market Segmentation to Increase Transit Ridership--Final Report*, summarizes the various tasks undertaken during the project and describes in detail the case studies and the analyses performed at the three demonstration transit agencies. This companion report is available on request through the TCRP, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

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Using Market Segmentation to Increase Transit Ridership A Management Guide

Overview

Does your agency suffer from ...

- 1) A "fuzzy" business mission?
- 2) Unclear objectives?
- 3) Trying to be all things to all people and consequently not serving any customers particularly well?
- 4) Information that is not decision-oriented?
- 5) An operations-oriented focus – that is, routing and scheduling reflect operational or in some cases political desires and do not reflect customer needs?
- 6) An unfocused promotional strategy?
- 7) Scarce resources for the development of new products or services or the implementation of a marketing or public education campaign?

If you answered "yes" to one or more of these questions, you are not alone. Understanding and adopting a market segmentation strategy can make it easier for you to answer "no" to all but the last of these questions, and will make the problem of scarce resources become an opportunity for the development of innovative and cost-effective programs and services.

What is "market segmentation"? The basic proposition behind market segmentation is that most – probably all – markets are not monolithic but instead consist of submarkets that are relatively homogeneous in terms of certain essential characteristics. These submarkets are market segments.

Market segments consist of groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.

Market segmentation is the process by which segments are identified. That is, you perform segmentation expecting to find some market segments responding more positively than others do to marketing variables. This process of market segmentation generally involves the use of consumer research. Analysis of consumer characteristics, attitudes, and behaviors form the basis for market segments.

Market segmentation is the identification of groups of customers – or market segments – that have similarities in characteristics or similarities in needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix.

Using a market segmentation strategy will help you improve your agency's competitive position and better serve the needs of your customers. An effective strategy will enable you to ...

- Increase ridership (both by increasing the frequency of riding and attracting new riders).
- Increase transit's share of mode choice in your market.
- Efficiently allocate resources to markets that represent the greatest potential for change in light of changes to the marketing mix.
- Enhance the image and reputation of public transportation to increase support for public funding.

Market segmentation can serve as the cornerstone of an efficient overall strategy. Research has shown that if you identify relatively stable market segments that can be effectively reached, you will achieve increases in ridership by marketing to these segments, beyond ridership increases possible from treating the market as homogeneous. The marketing research and analysis that is an integral part of the market segmentation process will enable you to ...

- Design responsive products to meet the needs of the marketplace.
- Develop effective and cost efficient promotional strategies.

Moreover, this research will ...

- Provide you with insight on present marketing strategies.
- Provide you with reliable data on which to base resource allocation decisions.
- Provide you with important data on which long-range planning – for market growth or product development – can be based.

In summary, market segmentation provides the necessary research base on which all other marketing strategies can be successfully formulated. This includes all aspects of marketing – product and service development, route structure, pricing and fare programs, and communications. Following segmentation, the agency can select **target markets** – one or more groups that will respond favorably to certain product or service configurations and messages about these products or services. The agency can then **position** its products and services by developing unique marketing strategies to appeal to the selected target market(s).

Segmentation research analyzes markets, finds niche opportunities, and capitalizes on a superior competitive position – enabling you to better serve the needs of your customers. Segmentation-driven strategy can help agencies design responsive products, develop effective promotional strategies, understand emerging trends in the marketplace, and fine-tune current market initiatives. In summary, it is a systematic approach for controlled market coverage and expansion.

Is your agency using market segmentation, and if so, are you using market segmentation techniques as well as possible? This handbook covers

- The **issues** that you need to address when using market segmentation.
- The **procedures** and **terminology** that you may encounter in connection with segmentation.
- **Problems** that may arise in implementing segmentation studies.
- **Strategies** that may prove useful in encouraging the use of market segmentation at your agency.

Segmenting Transit Markets – Common Bases for Segmentation

A market can be segmented in many ways. As a rule when selecting target markets, these markets should be compatible with your agency's goals and objectives. Moreover, it is important to match the market opportunity represented by the target market with the resources of the agency.

The first step in the market segmentation process is to identify the basis on which the market will be segmented.

Demographic, socioeconomic, and geographic segmentation bases and variables provide important information about individuals within specific markets. Segmenting markets by these physical dimensions is a logical starting point for several reasons:

- The data is relatively easy to obtain.
- It is generally less expensive than other forms of segmentation research.
- It provides a quick snapshot of a market (an understanding of market structure and potential customer segments).
- Populations can be sampled and accurately projected to represent characteristics of the entire market.
- The information gathered can be of great value for decision-making.
- The data corresponds to other available data and information for decision-making.

Product usage segmentation is particularly applicable to transit. This is frequently the next step taken once agencies have exhausted the possibilities of segmenting by demographics and/or geodemographics. In the transit industry, segmenting based on product usage is synonymous with segmenting based on ridership – notably frequency of ridership. Segmenting markets based on product usage provides five major benefits:

- Like demographic segmentation, this is a relatively simple methodology to use. Risks and costs can be relatively low.
- It is a useful dimension for understanding transit markets based on past ridership behavior.
- It can be used to identify strategies to retain frequent riders who are generally transit-dependent and often stop riding when other modes become available.
- It can be used to identify strategies to increase consumption among light and medium users in highly competitive markets.
- By providing additional benefits or focusing on neglected market segments, it is possible to convert nonriders to riders.
- Unlike psychographic and benefit segmentation, segmenting based on product usage is generally easy to implement and requires less complex analysis. It is also less expensive depending on the incidence of riders in the general population.

Customers and noncustomers' **attitudes** toward a specific product or service category is another frequently used type of basis variable. This is especially useful for developing advertising and promotion programs, because it enables advertising agencies to understand what people think and feel about their needs in a specific product or service category.

One of the more powerful segmentation approaches – **psychographics** – has come a long way since the term was first coined nearly twenty years ago. Psychographic research seeks to describe human characteristics of consumers that may have bearing on their response to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes. Segmentation based on psychographics has proven to be most useful in. . .

- Identifying target markets.
- Explaining consumer behavior.
- Improving an agency's strategic marketing efforts.
- Minimizing the risks for new products, services, or other ventures.

Benefit Segmentation is based on the belief that the benefits that people seek in consuming a given product are the basic reasons for the existence of true market segments. Benefits are the sum of product advantages or satisfactions that meet an individual's needs or wants. They extend beyond product features and serve to satisfy physical, emotional, or psychological needs. Benefit segmentation is found to provide the marketer with a new perspective and added insight into market situations. When properly executed, this approach is widely acknowledged as one of the best ways to segment markets. Some advantages of benefit segmentation include:

- Benefit segments are based on the reasons consumers buy.
- Benefit segmentation is an appropriate segmentation base in many types of situations.
- Benefit segments are based on causal factors rather than descriptive factors.
- Benefit segmentation is a method with great flexibility.
- Benefit segmentation can be used in conjunction with other closely related segmentation bases and variables.

A Practical Approach to Market Segmentation

How do you introduce or improve segmentation procedures and activities at your agency? Effective and cost-efficient segmentation analysis requires the following inputs:

- **Superior planning** – A managerial framework emphasizing planning and research guidelines leads to effective segmentation studies.
- **Solid research** – Choosing the optimal blend of primary, secondary, syndicated, and data base sources.
- **Selecting the "right" segmentation dimensions** – These include geographics, demographics, usage and other behavioral measures, benefits, and psychographics.
- **Strategy development** – Target market selection, positioning, nichemanship, and formulating the proper marketing mix based on product, pricing, promotional, and distribution elements.
- **Implementation and control** – Working, evaluating, and revising the segmentation plan.

A good segmentation plan requires ...

- 1) Insuring management involvement and buy-in by ...
 - Involving them early in the process.
 - Keeping them informed.
 - Involving them in any decisions along the way.
- 2) Establishing budgetary constraints by ...
 - Including both in-house and outside vendor costs in analysis.
 - Recognizing cost / benefit trade-offs (anticipate expected value of research).
- 3) Obtaining outside assistance as required. Outside assistance is most likely to be required in the design of the research, data collection, and analysis.
- 4) Establishing research objectives that include clear statements regarding the ...
 - Project background.
 - Project purpose.
 - Research objectives.
- 5) Specifying target population measurements that clearly describe your customers.
- 6) Stating relevant definitions regarding ...
 - The market or service area to be included in the study.
 - Key demographic and socioeconomic classifications to evaluate, criteria for determining benefits or lifestyles, and consumption measures that will be included.

- 7) Establishing criteria for segmentation viability that insures ...
 - The importance of the market segment can be **rated** relative to other marketing opportunities.
 - The market is **realistic** in size.
 - Members of the market can be easily **reached**.
 - Customers will **respond** to marketing initiatives.
- 8) Developing market segments that ...
 - Have similar characteristics.
 - Are distinct from other segments.
 - Represent a sizable population.
 - Provide meaningful segment data that is actionable.
- 8) Selecting the appropriate bases for segmentation by ...
 - Developing a segmentation model.
 - Identifying physical bases – geographic, demographic, geodemographic.
 - Identifying behavioral bases – psychographics, benefits, and product use.
- 9) Collecting the data by ...
 - Considering the applicability of secondary, primary and syndicated data.
 - Selecting the best method of data collection – telephone or personal interviews.
- 10) Employing appropriate sampling procedures. This generally means using probabilistic or random samples.
- 11) Analyzing and interpreting the data by following an analysis plan that ...
 - Specifies coding and tabulation requirements.
 - Defines the statistical analysis – including any multivariate procedures – that will be employed.
 - Uses complex models and advanced techniques only as needed.

Translating Segmentation Findings Into Strategy

The results of a market segmentation study can be informative, insightful, and even fun. Once the segmentation analysis is complete, however, the hard work begins. The real value of segmentation analysis lies in its ability to be translated into actionable strategies.

A simple three-step process can be used for strategy formulation.

- 1) **Identify the project or decision.** Consider projects or decisions your agency is presently considering and determine whether segmentation analysis is appropriate for that project or decision. Some examples of projects for which segmentation analysis might be considered include: new services, special promotions, pass or other fare media programs, advertising, special events, passenger information services, direct mail campaigns, guaranteed ride home programs, etc. Once the project or decision is identified, then ...
 - a) Determine the applicability of segmentation analysis to this project.
 - b) Create a project team.
- 2) **Conduct a situation analysis.** If it is determined that segmentation analysis is applicable to this project, the project team should first conduct a situation analysis. This step involves taking a step back and examining why your agency is considering this project or undertaking this decision. The situation analysis represents an opportunity for your agency to break out of the box and to look at the project or decision in different ways. Dare to be different! As part of your situation analysis, you should ...
 - a) Identify opportunities.
 - b) Examine problems / threats.
 - c) Establish goals.
 - d) Evaluate current strategies.
- 3) **Formulate strategies.** If the situation analysis indicates that this project is worth pursuing, the next step is to formulate the strategies to employ. If this is an existing project, this may involve a revision or complete overhaul of existing strategies. For new projects, you are operating from a clean slate. As noted in the situation analysis, be creative. Try looking at the results of your segmentation analysis in different ways. Brainstorm – don't reject ideas simply because your agency has never done it that way before. The bold new approach may be critical to attract those customer segments that have been resistant but through segmentation analysis have indicated they can be reached – with just a little more effort. During the strategy formulation process you will ...
 - a) Identify target market segments.
 - b) Position the segments.
 - c) Specify the marketing mix.

Enhancing the Value of Market Segmentation – Some Guidelines

Market segmentation can reward your agency with some or all of these riches.

- Increased ridership.
- Improved share of mode choice.
- New customers.
- Better customers.
- More satisfied customers.
- Potentially more 'profitable' marketing and service opportunities.

This process, however, takes considerable time and effort. Success requires well-conceived and executed research. Strategies must be formulated on the research and then monitored to determine their success.

Following are five valuable tips that should form the basis of your market segmentation study. Follow these steps and you will be on your way to a well-conceived segmentation study.

- 1) Plan, plan, plan. Then plan some more.
- 2) Consult important references.
- 3) Recognize the dynamics of the market.
- 4) Use more than one basis for segmentation.
- 5) Get down to basics.

Segmentation represents one of the most valuable tools available for managers. Successful service plans and marketing strategies can be developed on this foundation. The following eight guidelines will assist you in managing and using market segmentation in your agency.

- 1) Integrate market segmentation with other management activities.
- 2) Get involved in the project.
- 3) Be realistic in your expectations.
- 4) Listen to the results.
- 5) Dare to be different.
- 6) Request frequent updates.
- 7) Get professional assistance when and where necessary.
- 8) Treat segmentation as an investment.

Market segmentation will continue to gain prominence in the next few years as more and more agencies – large and small – discover the power of this strategic marketing tool for attracting and keeping riders, and acknowledge its importance to the service planning and marketing functions.

Market Segmentation

An Overview

Does your agency suffer from ...

- A "fuzzy" business mission?
- Unclear objectives?
- Trying to be all things to all people and as a result not serving any of your customers particularly well?
- Information that is not decision-oriented?
- An operations-oriented focus – that is, routing and scheduling reflect operational or in some cases political desires and do not reflect customer needs?
- An unfocused promotional strategy?
- Scarce resources for the development of new products or services or the implementation of a marketing or public education campaign?

Chances are, you answered "yes" to one or more of these questions. The good news, however, is that you are not alone. Interviews with transit agencies across the United States suggest that such problems are quite typical. Even better news is that understanding and adopting a market segmentation strategy can make it easier for you to answer "no" to all but the last of these questions, and will make the problem of scarce resources become an opportunity for the development of innovative and cost-effective strategies.

The overall objective of using a market segmentation strategy is to improve your agency's competitive position and to better serve the needs of your customers. Some specific objectives may include:

- Increasing ridership (both by increasing the frequency of riding and attracting new riders),
- Increasing transit's share of mode choice in your market,
- Efficiently allocating resources to markets that represent the greatest potential for change in light of changes to the marketing mix, and
- Enhancing the image and reputation of public transportation in order to increase support for public funding.

This is not to say that it is impossible to achieve these goals using a mass marketing approach and a one size fits all product. However, as one backyard philosopher said, "I wouldn't want to have everything, and besides, where would I put it all?" This is analogous to what most marketers know. Consider the following:

- **Everyone is not a prospect for every product or service offered.** It is evident to everyone in the transit industry that not everyone rides or will ride the bus, participate in a carpool or vanpool, ride a bike to work, or otherwise leave their car at home – even for a day.
- **An agency's product or service mix must be controlled for maximum efficiency.** Recent cutbacks in funding make it increasingly important to understand customers' needs and wants in order to use these increasingly scarce resources most effectively.
- Since the product / service mix and customer pool are limited, it is most efficient to match your products and services to customer needs and wants.

While transit agencies often advocate being market oriented and customer focused, few agencies – large or small – use market segmentation or a targeted marketing program to their maximum potential. In spite of the many advances made in the field of marketing theory – including advances made in market segmentation methodology and technology – a majority of transit agencies still base their marketing plans on cursory, incomplete, or intuitive market analyses. However, used effectively, segmentation-based marketing strategy – strategic segmentation – provides the foundation for increasing ridership and improving overall marketing performance.

This handbook provides an overview of market segmentation without heavy reference to equations and complex formulations. It lays out and explains terminology briefly – not always an easy process – and discusses the basic methodological procedures involved. Although this handbook reviews statistical concepts inherent in segmentation research and analysis, reading it requires no advanced training. This handbook places special emphasis on:

- Issues that you need to address when using market segmentation,
- The procedures, and terminology surrounding them, that you may encounter in connection with segmentation,
- Problems likely to arise in implementing segmentation studies, and
- Strategies to encourage the use of market segmentation at your agency.

This handbook should serve both as:

- An introduction for managers to the basic concepts and approaches of market segmentation, and
- A checklist of steps and procedures for marketers or market researchers who may ultimately have the responsibility for implementing the market segmentation program.

Finally, this handbook addresses segmentation in the context of its place in an organization's strategy, not just as an exercise with numbers, because complete segmentation studies require involvement of the entire organization.



Examples are used extensively throughout the handbook to illustrate the concepts presented. Look for to quickly find your way to these examples. Summaries at the end of each chapter quickly highlight the key concepts presented. You may find these summaries particularly useful when presenting market segmentation concepts to management.

In developing this handbook, special thanks are due to the three transit agencies – Milwaukee County Transit System, Washington Metropolitan Area Transit Authority, and Boise Urban Stages – who allowed their service areas to be "test sites" for the research study that is illustrated in this handbook. Their openness to trying something new and their willingness to bare their souls to a larger audience is greatly appreciated.

Thanks are also due to the members of the project team, who worked so diligently on this research project over the past eighteen months, contributing both theoretical and practical knowledge and insight into the effort. Project team members include Lynne Morsen, Transcom, Inc. (Seattle, WA), Multisystems, Inc. (Cambridge, MA), Urbitrans, Inc. (New York, NY), John Lastovicka (Arizona State University), and Don Lehmann (Columbia University, NY). Finally, the insights of the panel members in developing the original scope of this project and the comments provided throughout the process have been integral to its success. In particular, their thoughtful comments on the first draft of this handbook were instrumental in developing a tool that can be used by many throughout your organization.

Market Segmentation – What Is It?

The Emergence of Segmentation

Many people today believe that market segmentation is the key strategic concept in marketing. However, the basic idea behind segmentation has been around since the beginning of trade. It was only in the 1950s, however, that this idea was formalized by academicians and pursued earnestly by large numbers of business firms and other types of organizations.

The late Wendell Smith proposed the concept of market segmentation more than forty years ago. In his classic 1956 article, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," Smith recognized that product differentiation and market segmentation are distinct strategic alternatives.

Smith voiced several positions in this article never stated before. Notably, he rejected the classical economic theory of perfect competition, and in particular its assumptions of unvarying supply and demand.

Segmentation is based on the developments on the demand side of the market and represents a *rational and more precise* adjustment of product and marketing effort to *consumer or user requirements*. In the language of the economist, segmentation is disaggregative in its effects and tends to bring about recognition of several demand schedules where only one was recognized before. (*Italics added*)

Smith also noted that product differentiation and segmentation have some similarities – both lead to different sets of products from a given manufacturer. However, they differ in a fundamental way – market segmentation is focused on consumer needs. In a "differentiation" strategy, the company would try to make "something for everybody," without in-depth study of any particular group within the market. Companies took a "global" view of the marketplace, and then tried to make a variety of things. Today, transit agencies frequently use a "differentiation" strategy, thinking they are using market segmentation. Offering different levels and types of bus service – fixed route, direct service, express service, neighborhood service with variable routing – in a single market exemplifies a "differentiation" strategy. Many of these services have been offered without a clear understanding of the needs of the riders and the community for which the service has been developed. The records of accomplishment of these efforts shows that while some services have achieved moderate success, others have failed miserably, attracting little or no ridership.

Smith compared product differentiation strategies to trying to take a layer of the marketing "cake" – cutting across all aspects of the market – and segmentation to taking a slice – by cutting vertically – into one area of the marketplace. Smith went on to identify the potential benefits of this focus compared with that of product differentiation.

While successful product differentiation will result in... a horizontal share of a broad and generalized market, equally successful application of... market segmentation tends to produce a depth of market position in the segments that are effectively defined and penetrated.

¹ Wendall Smith, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," *Journal of Marketing*, (July 1956), pp. 3 – 8.

Finally, Smith was the first to state that segmentation works more efficiently than a strategy of simply producing as many products as possible.

Creating different products only becomes effective following segmentation. The truly successful company must first find segments and then create products and services fitting their needs.

Perhaps as much as anything in Smith's article, this idea of a "market" or "customer" orientation and the necessity for market segmentation as a cornerstone of this orientation heralded a new approach to consumers and markets.

Early segmentation efforts were largely intuitive and pragmatic, based on experience in the marketplace. This experience was sometimes supplemented by basic customer survey research to learn more about the demographics, usage habits, and attitudes of users of a specific product or service. While many companies and organizations continue to operate in this manner and believe they are using market segmentation, there have been considerable advances in the field of market segmentation in recent years. It is these advances and the potential applications of these advances to the transit industry in order to increase ridership that is the focus of this handbook.

Market Segmentation Today

Today the terms *market segment* and *market segmentation* are usually used to mean a subdivision and a system for subdividing (respectively) a market by customer types. The basic proposition of market segmentation is that most – probably all – markets are not monolithic but instead consist of submarkets that are relatively homogeneous in terms of certain essential characteristics. These submarkets are market segments. A more formal definition of a market segment follows.

Market segments consist of groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.

Market segmentation is the process by which segments are identified. That is, you perform segmentation expecting to find some market segments responding more positively than others do to marketing variables. This process of market segmentation generally involves the use of consumer research. Analysis of consumer characteristics, attitudes, and behaviors form the basis for market segments. A simple definition of market segmentation follows.

Market segmentation is the identification of groups of customers – or market segments – that have similarities in characteristics or similarities in needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix.

There are several important elements to these definitions. First, to be meaningful, a market segment must have some characteristics that are common to members of a segment and, equally important, that **differ from the characteristics of other segments**. Segment members might vary on a number of characteristics, including demographic characteristics, geographical region, lifestyle, usage patterns, attitudes, and behavioral factors.

Market segments are frequently established on the basis of income, age, gender, occupation, and complex behavioral dimensions.

Moreover, as the above definitions suggest, the differences between market segments must be ones that are, or might become, significant for the design of a marketing strategy. This key point distinguishes **market segments** from **groups**. Many organizations have conducted significant research that identifies **groups** – that is, groups of customers or noncustomers that differ in terms of demographic characteristics and, in some cases, attitudes. However, these groups do not differ meaningfully in terms of behavior or in their responses to marketing activities. For example, many transit agencies have identified nonriders as a market segment. They are considered a market segment because they generally have a common set of attitudes. For example, when asked, most nonriders will agree that they do not use transit because it is inconvenient and inflexible. Considerable time and energy has gone into converting nonriders to riders with little or no effect. This is because nonriders as a group are unlikely to respond favorably to changes in the marketing mix.

Market segments are different from **groups** in that their response to a separate product or market strategy will be different from that of another market segment. Recently, transit agencies have looked more carefully at the nonrider market and identified target markets consisting solely of different segments of nonriders. These segments also differ in terms of attitudes and demographics. However, some segments of nonriders will respond favorably to changes in the marketing mix.

Chapter 3 of this handbook provides considerable insight into market segmentation research principles and its application to segmenting transit markets.

Market Segmentation – Why Should I Bother?

Market segmentation can serve as the cornerstone of an efficient overall strategy. Research in the private sector has shown conclusively that if you can find segments that (1) you can both identify and differentiate, (2) will remain effectively stable, and (3) can effectively be reached, a firm can increase sales and profits by marketing to these segments, beyond profits possible from treating the market as homogeneous.



Introduced in 1996 as "The Caddy that Zigs," the Catera unites fun, great handling, and luxury.

Catera is the newest offering in the entry-luxury market, expected to grow to 434,000 vehicles a year by 2000. Dominated by European and Japanese sedans in the \$29,000 to \$40,000 range, entry-luxury cars appeal to 'Boomers.' The question – could Cadillac's lead in *creating a higher standard* work for them?

Using high level demographic, lifestyle-values, and benefits-needs segmentation -- plus a zippy German-made car -- Cadillac made its key "go" decision. Cadillac relied on market research to adjust the product, set the price, create the brand personality and advertising, and support dealer sales. Potential buyers examined each marketing component -- product, price, advertising, sales and distribution. "I can't put enough emphasis on the investment in research. It kept reconfirming our positioning and marketing approach," said Dennis Ephlin (*eef-lin*), Catera Brand Analyst. "We're very passionate about it."

The research showed that the Catera is for people age 35 to 50; their average age is 44. They were young adults in the 1960s and 70s, driving smaller imports and rejecting their parents' choices. The majority are college graduates (73%) in professional positions (57%) with household incomes of \$75,000 and over. Unlike the markets for Cadillac Seville and DeVille, half of Catera prospects are female; only 16% are retired.

"We did the geodemographic analysis, but to target 40-plus year olds, with incomes over \$100,000 doesn't say much. We took the analysis a step further, looking at buying habits. We did segmentation based on a combination of benefits, needs, and lifestyles," said Ephlin.

Catera found that the younger, upscale professionals are self-aware, individual thinkers. They are doers and extremely active. They are ethnically diverse. Value conscious, they consider this purchase a rational indulgence. They want extras, but do not want the car to seem excessive. They are sophisticated shoppers, gathering information and tending to shop many brands and dealerships. And, they want a car that is sporty, safe, and luxurious.

In October 1996, the Catera was launched. The results? In its first calendar year ending December 31, 1997, Cadillac sold 25,411 Cateras, making it the most successful launch of an entry-luxury car in the history of the U.S. auto industry. The record had previously been held by Acura, which sold 24,700 units of the TL model in 1996, its first full year. "Catera is now firmly established as a major player in one of the industry's most hotly-contested segments," said Dave Nottoli, Catera Brand Manager.

A top-down commitment to its markets has brought all-star industry awards and favorable press from consumer magazines during Catera's first calendar year. Among the awards:

- Driver's Choice Award for Best Luxury Car, *MotorWeek*
- Best New Luxury Car, Automobile Journalists Association of Canada
- Automobile Magazine's All-Stars
- Best of What's New, *Popular Science*
- Edison Award, Best New Products of 1997, American Marketing Association

Additional results from the use of a strong market segmentation strategy include:

- Catera is accomplishing its objective to attract a new, younger generation of buyers to Cadillac, where the median age of customers was 63 years. The median age of the first-year Catera buyer was 56, compared with the median age of 47 for all customers in the entry-luxury segment, and the average of 44 which was Catera's original aim.
- Catera is bringing more women customers to Cadillac where, traditionally, about 30 percent of customers have been women. In the first year, 45 percent of Catera buyers and lessees were female.
- And, Catera found markets that had belonged to major competitors. Over 60 percent of recent Catera customers traded a non-General Motors product. Catera buyers most often listed Lexus as their second-choice vehicle.
- Finally, its "Caddy That Zigs" television advertising enjoys the highest aided awareness for entry-luxury cars, according to third-party research.

Market segmentation research led to General Motors' actions in tailoring the product, pricing, promotion, and showroom sales support for the most successful 'entry-luxury' auto launch in U.S. history.

While transit agencies do not generally think in terms of profits and sales like General Motors, they can benefit from the use of market segmentation research and the resulting strategies. As companies in the private sector have found, if transit agencies can (1) identify and differentiate market segments that (2) will remain relatively stable and (3) that can be effectively reached, they will achieve increases in ridership by marketing to these segments, beyond ridership increases possible from treating the market as homogeneous.

There are five major benefits of market segmentation analysis and strategy. They are:

- 1) **Designing responsive products to meet the needs of the marketplace.** By thoroughly researching customer preferences – an essential component of segmentation analysis – your agency will move toward an essential element of a market orientation – achieving a customer focus. The agency places the customer first and designs and refines its product and service mix to satisfy the needs of the market.
- 2) **Developing effective and cost efficient promotional strategies.** As a planning tool, segmentation identification and analysis is extremely valuable in developing the agency's communication mix. Advertising can be designed with a message that touches the hearts and minds of the market. These messages can be targeted to the right media vehicles. This marketing investment can be supplemented by public relations initiatives, sales promotion methods, and direct marketing or relationship marketing programs.
- 3) **Providing insight on present marketing strategies.** It is important to periodically reevaluate your present marketing strategies to try to capitalize on new opportunities and circumvent potential threats. Market segmentation research is useful in exploring new markets – perhaps secondary or fringe markets such as infrequent or occasional riders that might have otherwise been neglected by concentrating on primary markets, such as commuters and/or frequent riders. Moreover, effective segmentation provides a systematic approach for controlled market coverage, as opposed to the hit-or-miss effectiveness of mass marketing strategies.
- 4) **Providing data on which to base resource allocation decisions.** A major use of market segmentation analysis for transit is the data provided on which the agency can then make decisions about where to allocate increasingly scarce resources. This data will be particularly useful when making special funding requests.
- 5) **Ongoing consumer and market segmentation analysis provides important data on which long-range planning – for market growth or product development – can be based.** Finally, while market segmentation is an important tool for achieving the short-term benefits described above, perhaps its greatest strength lies in providing data for long-range planning. A thorough understanding of the characteristics of the market today, coupled with projections for future trends, can help the long-range planner develop and price products and services that will meet the needs of these markets into the future. This is particularly important where many of these new products and services represent significant capital investments.

In summary, market segmentation provides the necessary research base on which all other marketing strategies can be successfully formulated. This includes all aspects of marketing including product and service development, route structure, pricing and fare programs, and communications. Following segmentation, the agency can select **target markets** – one or more groups that will respond favorably to certain product or service configurations and messages about these products or services. The agency can then **position** its products and services by developing unique marketing strategies to appeal to the selected target market(s).

Segmentation research analyzes markets, finds niche opportunities, and capitalizes on a superior competitive position – enabling you to better serve the needs of your customers. Segmentation-driven strategy can help agencies design responsive products, develop effective promotional strategies, understand emerging trends in the marketplace, and fine-tune current market initiatives. In summary, it is a systematic approach for controlled market coverage and expansion.

Is your agency using market segmentation, and if so, are you using market segmentation techniques as well as possible? Ask yourself and others at your agency the following questions to explore this issue further.

Segmentation Checklist:

How Well Is Your Agency Using Market Segmentation Tools?

- ✓ *Does your agency segment the market served by your system? If so, why? If not, why not?*
- ✓ *What segment(s) of the market is your agency trying to serve?*
- ✓ *What are your objectives in serving this segment(s)?*
- ✓ *How successful are you in meeting this objective?*
- ✓ *What is your typical customer profile?*
- ✓ *Are target market definitions and your customer profiles based on research?*
- ✓ *What dimensions (methods) are used to segment markets?*
- ✓ *When was your last segmentation analysis conducted?*
- ✓ *How frequently are updates obtained?*
- ✓ *What is your budget for segmentation analysis?*
- ✓ *Are product or service decisions based on segmentation research?*
- ✓ *Are promotional decisions based on segmentation research?*
- ✓ *Are pricing and fare decisions based on segmentation?*
- ✓ *Are routes structured based on segmentation?*
- ✓ *Is segmentation analysis used in assessing trends and changes in the marketplace?*
- ✓ *Is segmentation analysis used to evaluate your present marketing strategies?*

Market Segmentation – Some Important Cautions

While the arguments for using marketing segmentation are strong, there are three important assumptions on which market segmentation is based. If you or your agency does not accept these assumptions, then you are not yet ready to pursue such an effort.

- Market segmentation assumes that because consumption behavior is generally not random, it is possible to identify and isolate groups of individuals within the total market who demand different kinds of product characteristics and react differently to specific marketing strategies. If you do not believe that different groups of individuals exist within the total market for transit services, then you are not ready for market segmentation. On the other hand, if you and your agency feel that even if these groups exist, they do not demand different products or services or do not react differently to specific marketing strategies, then you are not ready for market segmentation.
- **The use of market segmentation assumes that after the marketer has invested in analysis to define the market segments** and predict – to some degree – the best prospects for a specific product or service, that he / she is willing to select "target segments" whose needs he / she can best fulfill, and concentrate efforts on reaching and persuading primarily this portion of the total market. If you or your agency is not prepared to invest in this analysis, you are not ready for market segmentation.

- The application of market segmentation assumes that if more than one target segment is desirable, the marketer is willing to design different marketing or product strategies for each segment. If you or your agency is not able or willing to design different marketing or product strategies for each segment, then you and/or your agency is not ready for market segmentation. Or, if you or your agency cannot accept the premise that by segmenting the market you are implying that you will not serve some segments of that market, then you and/or your agency is not ready for market segmentation.

Finally, it is important to bear in mind that market segmentation is not the elixir that will solve all your marketing and service planning problems. To use market segmentation effectively, you must be aware of some potential shortcomings of segmentation. These include:

- **Segmentation findings may only provide a composite profile of a group.** Although research can provide meaningful marketing information, some forms of segmentation analysis reflect only expected segment decision-making, and do not necessarily indicate actual or potential behavior.
- **The greater diversity of consumer lifestyles in the 1990s has made segmentation more difficult in many markets.** Moreover, changes in consumer lifestyles are becoming more common and occurring more rapidly. To be able to effectively segment markets requires a longterm commitment of time and resources into research to identify market segments and to track changes in the composition and characteristics of these segments over time.
- **Segmentation is not a remedy for other marketing or organizational deficiencies.** The best segmentation information is worthless unless it is supported by consistent product / service, promotional, pricing, and distribution strategies that are regularly evaluated and revised as situations dictate. Moreover, market segmentation strategies are not a panacea for other potential organizational limitations.
- **Segmentation's effectiveness is limited by management's ability to implement strategic implications.** A marketing orientation requires a strong commitment – beyond mere lip service – from an agency. This includes support in the areas of personnel, resources to hire marketing consultants or staff, time investment in management, and the willingness to act on prescribed recommendations. If this is not currently present, it will not happen overnight. Findings from a market segmentation study must become an integral part of the firm's thinking process – progressing from a "report on management's shelf" to a "working resource."
- Relatively few individuals have the understanding, expertise, and authority to incorporate this technique into an agency's marketing plan. Hence, under-analysis of a market is common. Occasionally, companies may over-analyze the market. In one instance, a transit agency conducted four different segmentation studies over a two-year period, spending over \$80,000 per study. Yet, none of these was turned into strategy.
- **Many segmentation analyses often emphasize methodological and statistical procedures over substance.** An end product of such a study is a complex model understood only by the researcher and not implemented by management – the classic report on the executive's shelf syndrome.
- **Marketing research can be expensive.** And market segmentation studies may be more expensive than other research. Management may not perceive the benefits of market segmentation analysis relative to its cost.

A major focus of this handbook is to help you better understand the process of market segmentation and to identify strategies by which your agency can avoid these pitfalls.

Summary

Market segments are ...

- Groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.

Market segmentation is ...

- The process by which market segments are identified.
- The foundation for an overall marketing strategy.
- A process of analyzing markets, finding a niche, and developing and capitalizing on a superior position within that niche.
- Central to a market and customer orientation in which products and services are matched to customer needs and wants.

Market segmentation will enable your agency to ...

- Design responsive products to meet the needs of the marketplace.
- Develop effective and cost efficient promotional strategies.
- Provide insight on present marketing strategies.
- Provide data on which to base resource allocation decisions.
- Have available important data on which long-range planning – for market growth or product development – can be based.

Following successful segmentation, your agency can ...

- Identify and develop target markets that represent the greatest potential for increased ridership.
- Successfully position your products and services to appeal to these target markets.

Understanding the limitations of market segmentation will enable your agency to make better use of market segmentation analysis. These limitations include:

- Findings that may only provide a composite profile of the market.
- Changing lifestyles has made segmentation more difficult.
- Segmentation is not a remedy for other marketing organizational deficiencies.
- Segmentation's effectiveness is limited by management's ability to use the results.
- Individuals within your agency may not have the understanding, expertise, and authority to incorporate this technique into an agency's marketing plan.
- Many segmentation studies emphasize methodological and statistical procedures over substance.
- The marketing research required for market segmentation may be expensive.

Segmenting Transit Markets

Common Bases for Market Segmentation

A market can be segmented in many ways. As a rule when selecting target markets, these markets should be compatible with your agency's goals and objectives. Moreover, it is important to match the market opportunity represented by the target market with the resources of the agency.

Although the concept of market segmentation is not complex, implementation is not easy. The selection of target markets should be guided by the premise that consumers are different and these differences are reflected in varying preferences. Moreover, consumers' differences are related to differences in demand for products and services. To determine a market segmentation strategy, marketers and service planners must decide how to modify their product or service to satisfy market demands. Finally, meaningful market segments of consumers must be distinguished within the aggregate market.

The first step in the market segmentation process is to identify the basis on which the market will be segmented. There is no single way to select a market segment. Different segmentation variables need to be tried, alone and in combination, in an effort to select the most appropriate market segment to be targeted. This chapter explores some of the common bases for market segmentation.

Two Basic Approaches to Segmenting Markets

Historically, segmentation has been divided into two sharply different classes:

- Pre-determined (*a priori*) segmentation or
- Market-defined (*post hoc*) segmentation.

These two approaches diverge strongly in approach, intent, and basic philosophy.

Pre-Determined (*A Priori*) Segmentation – Defined

In most cases, **pre-determined (*a priori*) segmentation involves selecting certain groups from a population based on known characteristics and declaring them "segments."** The characteristics are selected by the marketer or researcher and may be based on past research, common sense, or simply "gut" instinct.

Some definitions of pre-determined (*a priori*) segmentation provide a clear picture of the true meaning and intention of this approach to market segmentation.

In [this approach] the researcher chooses some cluster-defining description in advance, such as respondent's favorite brand. Respondents are then classified into favorite-brand segments and further examined regarding their differences on other characteristics, such as demographics or product benefits being sought.²

A priori segmentation designates groups of consumers who are similar in terms of some factor or factors that are known or felt in advance to be related to product / service consumption; for example, demographics, psychographics, heavy vs. light usage, brand loyalty.³

A priori segmentation occurs when the researcher divides the market population into two or more groups based on criteria outside the scope of the research study. Conducting the study will not influence the definitions of these pre-defined segments.⁴

As these definitions imply, the use of an *a priori* classification system implies the existence of a "hunch," a highly developed body of theory, and/or past research that indicates how best to classify objects for the purpose of further research. For example, if one were to conduct an investigation of transit riders and nonriders, one might establish a category of riders who are frequent riders, another that rode infrequently, and one that does not ride. Such a classification might be based on some *a priori* judgements as to what constitutes frequent versus infrequent riders.

Some Common Bases for A Priori Market Segmentation

Bases used for pre-determined (*a priori*) segmentation vary widely depending upon goals. Some of these bases might include the following. Each of them has the advantage of providing "instant segments" if you can selectively appeal to each group.

- Riders versus nonriders, frequent riders versus infrequent riders versus occasional riders, or former riders versus current riders.
- Loyal riders versus vulnerable or nonloyal riders.
- Transit dependent riders versus choice riders.
- Commuters versus noncommuters.
- Residents of high-density areas versus suburban residents.
- Commuters to downtown CBDs versus suburb-to-suburb commuters.
- Student commuters versus work commuters.
- "High" versus "mid" versus "low" income groups.
- Geographic location as defined by zip code, census tract, or transit analysis zone.

² Green, P.E., D.S. Tull, and G. Albaum, *Research for Marketing Decisions*. Englewood Cliffs: Prentice-Hall, Inc. (1978).

³ Myers, J. H. and E. Tauber, *Market Structure Analysis*. Chicago: American Marketing Association (1977).

⁴ Neal, W.D. *Strategic Marketing Research: Techniques and Applications*. Melbourne: Technology Training Co. (1990).

Using Pre-Determined Segmentation Schemes

The principal advantage of an *a priori* approach is that the researcher is less apt to be led astray by purely fallacious classification systems that might arise if the data were permitted to speak for itself. On the other hand, when using an *a priori* approach, one's prior convictions can act more as a set of blinders than as a guide to further study and understanding. Moreover, regardless of the complexity of reality, marketers and researchers find it difficult to classify objects by more than two or three characteristics at a time – for example ridership and age. If reality requires greater complexity (i.e., a more elaborate multidimensional classification scheme), *a priori* approaches are severely constrained by the marketer or researcher's conceptual limitations.

There are many occasions when using a pre-determined segmentation strategy is highly appropriate. For instance, you might take this approach when:

- **Study goals include exploring or understanding differences between known segments.** Often the intent here is to try to remedy some problem or deficiency or to explore or test the effectiveness of different strategies against a target market. For example, you might wish to explore why former riders no longer ride transit and what strategies may encourage this segment to ride again. Or, you might want to understand why infrequent riders do not ride more often and what strategies could encourage this segment to ride more. Customer satisfaction research is a common example where the study goals call for focusing on a specific market – existing riders – and exploring or understanding differences between known segments within this market.



Throughout the 1980s, the City of Chicago lost population and employment to the surrounding suburbs. Between 1980 and 1990, the suburban population increased 9.3 percent, while Chicago lost 7.3 percent of its population. Jobs migrated to the suburbs as well. By 1990, jobs in the suburban areas of Chicago served by Pace supported 2.2 million jobs, an increase of 24.7 percent, while the central city lost 6.2 percent of its jobs. As a result, by 1990, the Pace service area housed more people and more jobs than the central city. This trend is expected to continue. In 2010, the Pace suburban area is projected to have 5.2 million residents and 2.9 million jobs.

In order to assess the impacts of these changes, Pace commissioned a telephone survey of users and nonusers in 1995. The sample consisted of 300 Pace riders and 300 nonriders. Each group was broken down proportionately by market segment: (1) suburb-to-suburb, (2) suburb-to-city, and (3) city-to-suburb. (These segment definitions had been used in previous Pace research.) Based on this research, Pace summarized the characteristics of users and non-users in the three market segments. Some of the major findings included the following:

- The highest levels of marriage, education, income, and home ownership were found in the suburb-to-city market. The lowest levels were found in the city-to-suburb market.
- The city-to-suburb market included the youngest customers (35.8 years) and the highest female market share (72%).
- The highest African American market share (59%) was found in the city-to-suburb market.

- Economic differences between users and non-users were least pronounced in the suburb-to-city market.
- City-to-suburb users had a significantly more downscale economic profile than non-users in this market.

Following the research, Pace prepared its first Marketing Plan. The plan focused on work trips, which make up 80 percent of Pace's customer base, and identified the following opportunities for attracting automobile users to transit:

- Reduce transit travel time in relation to driving time.
- Increase opportunities for convenient park-and-ride.
- Increase awareness of actual driving costs.
- Evaluate potential to convert carpool commuters to vanpool passengers.
- Create opportunities for alternative fare payment mechanisms.

Pace further translated these goals into specific strategies for serving each market segment through pricing, promotion, and service. Addressing the suburb-to-suburb market, Pace established the following goal:

Gain 905 additional daily trips by increasing utilization rates for existing customers, decreasing the defection rate for existing customers, and attracting new customers.

Specific strategies for achieving this goal include:

- **Increase Utilization Rates.** Pace determined that 10 percent of customers in this market use the service less than four days per week. Increasing their utilization rate by one day per week would add more than 2,000 trips per day. This could be accomplished by
 - *Implementing new magnetic striped passes to take advantage of anticipated new fare box equipment.* Pass options could be structured to increase system use.
 - *Allowing students to ride at discounted fares at any time rather than restrict use to weekday school trips.* This would encourage additional trip taking and develop a long-term customer base.
 - *Promoting cost savings associated with riding the bus.* Infrequent Pace riders may not be considering the true costs of their occasional auto commutes.
 - *Installing more bus shelters* to improve waiting conditions. Infrequent riders may avoid using Pace during inclement weather.
- **Increase Customer Retention.** The average customer remains for 64 months. Increasing this rate by only one month would increase Pace's customer base by 964 daily riders. This could be accomplished by
 - *Offering discounts to long-term customers* through the ticket-by-mail program. Providing discounts to loyal customers can be a cost-effective means of reducing attrition.

- *Promoting cost savings associated with continued use of Pace compared with buying, maintaining, and insuring a car.* A large percentage of former Pace users left when they purchased an automobile.
- *Implementing a customer satisfaction monitoring system through an on-board survey.* This would allow Pace to identify and address service-related issues quickly.
- **Attract New Riders.** Population and growth in this market is expected to generate 905 new riders per day, which was the basis of the goal for the suburb-to-suburb market. This can be accomplished by
 - *Offering free trips to new riders.* Pace determined that nonusers rated Pace lower than customers did. A trial ride may change this perception and lead to increased use.
 - *Developing a uniform mechanism for employer-based fare subsidies,* targeted at large employers in well-served markets. Large employers are generally more willing to consider subsidies if significant service is available and the benefit can be extended to all employees.
 - *Using direct mail to promote availability of Pace service to potential customers along existing routes.* Most nonusers have no idea where the routes near their homes actually go.
 - *Implementing one new route in a market that is underserved.*
 - *Increasing the number of signs and shelters along Pace routes.* Increasing Pace's visibility can help promote the service among nonusers.

Similar goals and strategies were established for the other three markets identified by Pace. The market research on which these strategies are based has enabled Pace managers to understand the unique needs of each segment. By linking the findings of its market research activities directly to service planning and promotional activities, Pace is working to design and operate services that are attractive to its customers and better meet their travel needs.

Sources: Pace Marketing Plan.

- **Previous research has revealed segments that you can reuse.** For example, previous research may have defined segments of riders based on frequency of riding, attitudes, or demographic characteristics that clearly exhibit the distinguishing features between groups of riders and market segments – that is, they respond differently to marketing programs or other strategies. Using results from previous research has been particularly useful when Tri-Met (Portland, OR) conducts focus group research as illustrated below.



In 1993, Tri-Met (Portland, OR) conducted an initial or baseline segmentation study that identified market segments that have since become the core of the agency's marketing and service planning strategies. Tri-Met's advertising campaigns have used their segmentation schema developed from this comprehensive research program.

Since 1993, Tri-Met's ad campaigns have appealed to potential riders who agreed that 'we have to change our attitudes about how we use our cars', said they had already made changes in the way they do things for environmental reasons, and linked Tri-Met with a high quality of life. Advertising was pre-tested in focus groups recruited only from the likely-to-ride segments. "While *everyone* is our market, the anti-transit opinions are heard elsewhere. We talked only with people who *would* ride, and in *their* language. The participants helped us shape things for *all* potential rider groups," said Lyon. "It was productive and positive." Tri-Met's theme, *How we get there matters*, reinforces the pro-transit attitudes of current and potential riders.

Source: *Market Segmentation Study for Tri-County Metropolitan Transportation District of Oregon*, October 1993.

- **"Pre-segmentation" schemes are available and you believe they will provide actual segments.** For example, you may elect to use one of the many standardized schemas such as PRIZM or VALS and determine which group, if any, a proposed new product or service might appeal to the most. Or, geodemographic segmentation using census or other data may help to narrow the focus to one or more specific markets or segments. This approach is particularly applicable when studying specific route and scheduling strategies. Additional, highly targeted research can then be conducted to develop strategies to reach the identified targets.



The Metropolitan Transit Development Board and the San Diego Association of Governments used market segmentation to identify potential transit customers. After identifying transit corridors with low ridership, MTDB used this approach to target potential customers based on their demographic profile. Surveys of riders and nonriders in the corridor further provided the transit agency with an opportunity to address concerns – for example safety and security – in specially tailored promotional materials.

IN 1995, MTDB developed a market-based strategy to target potential riders in specific transit corridors. Based on past survey research, passenger counts, and census data, MTDB marketing staff focused on the State Route 94 transit corridor in central San Diego. Analysis of sociodemographic information (including household income, vehicle availability, and licensed drivers) showed that the residents along this corridor had characteristics frequently associated with transit ridership. Although this corridor was well served by transit, ridership was lower than would be expected.

Armed with an identified target, highly targeted research identified perceptions of safety as a key concern affecting transit ridership in this corridor. This finding was consistent with earlier surveys conducted by SANDAG. Using the information developed through these market research efforts, MTDB developed a ridership guide tailored to the SR94 corridor that included a map of the area and listed available transit routes, headways, park-and-ride facilities, key destinations, and other information. The guide also discussed security measures used on the system, including off-duty police officers. The guide, which also included tickets for a free round trip, was mailed to more than 20,000 households in the corridor.

The program was an unqualified success. MTDB tracked ridership – including use of the free tickets – on the routes in the SR94 corridor in the months following the promotional mailing. Results showed:

- The redemption rate on the free ride tickets was 22 percent – surpassing both retail industry standards and other MTDB direct mail projects to date.
- In August 1995 – the month of the promotion – 27,567 additional passengers rode the promoted routes compared to the same period in the previous year.
- Even after deducting the redeemed free ride tickets, ridership was up more than 12,600 passengers.
- Promoted bus routes averaged a 4.98 percent ridership gain, despite an average cut in service hours of 2.39 percent.
- Ridership on promoted bus routes surpassed the overall system increase by 1.94 percent.

MTDB has applied this strategy to other corridors since the initial strategy was developed in 1995.

Source: Linda Culp and Julie Jamarta, "Planning San Diego's Transit System Using GIS." Prepared for National Conference on Geographic Information Systems for Transit, August 1995.

Some Cautions Regarding the Use of *A Priori* Segmentation

Pre-determined segmentation schemes get frequent use, especially because organizations can often perform them with little or no expense devoted to primary use. Moreover, as illustrated in the previous section, the use of such segmentation schemas are appropriate in some cases. However, these approaches should be used with care.

First, the terms *segment* and *segmentation* get their most abuse in connection with various "a priori" schemes. In fact, many transit agencies believe they are employing market segmentation based on "a priori" schemes. A closer analysis of the market, however, suggests that while they have defined groups of customers, they have not defined market segments. For instance, an agency may state that "people over 65," "women," or "commuters" constitute "segments." In some cases these are indeed important segments – that is, these groups do respond differently to alternative products and messages. All too often, however, no research is conducted to determine whether these groups do respond differently. Launching an expensive program – for example, a direct mail campaign or developing a specific service program targeted to the identified group – without the necessary follow-up research may result in targeting a group of people that do not respond differently than another group of customers.

Another major problem with pre-determined segmentation approaches is that they frequently ignore the fact that our society has been, and remains, dynamic. Segmentation schemes developed three or four years ago may not be appropriate today. In all likelihood, the environment has changed in some way that will influence the way in which these existing segments respond, or do not respond, to different marketing and service strategies. That is, segments that at one time responded differently may in fact no longer respond in the same way at all. This is a particular weakness with the use of census data that is updated once every ten years. Shifts in population and rapidly growing cities such as Las Vegas, NV or Boise, ID look very different in 1998 than they did in 1990. The proper way to check this is to keep investigating the market, testing segments periodically to check their stability.

Definitions of pre-determined segments may, in fact, prove to be highly unstable. For instance, consider the "commuter" market of today compared with the "commuter" market of five to ten years ago. Traditionally, the majority of the commuter market consisted primarily of men, who lived in a suburban community and who traveled to a downtown central business district. More recently, this segment has fragmented. No longer is the commuter market strictly men in business suits traveling back and forth. Women have become a major part of this market. Moreover, women respond differently to existing product and service offerings. Similarly, the market has fragmented further based on the direction of the commute. While the traditional suburb to CBD commute continues to form an important component of the market, there has been significant growth in the suburb-to-suburb commuter market. In some markets (e.g., Seattle), there has also been significant growth in the reverse commute market – that is, commuters who have chosen to live in the city but commute to suburban work locations.

Finally, **pre-defined groups that include some "life-style" information get substituted for segmentation that is genuinely connected with the product or service.** While information from these services has many important uses, neither these nor any other "off the shelf" information should ever substitute for serious thought about – and the investigation of – the marketplace. It is far worse to segment a market incorrectly than to treat it as one mass market.

Market-Defined (*Post Hoc*) Segmentation – Defined

Market-defined (*post hoc*) segmentation attempts to identify segments based on actual market investigations, notably analysis of answers to survey questions intending to predict marketplace responses. Again, some alternative definitions of market-defined (*post hoc*) segmentation clarify the contrasts between this approach and pre-determined (*a priori*) segmentation.

Post hoc segmentation [occurs when] respondents are clustered according to the similarity of their multivariate profiles regarding such characteristics, not used in the original profile definition. In post hoc segmentation, one does not know the number of clusters or their relative size until the cluster analysis has been completed.⁵

In contrast [to a priori segmentation], response-based [market-defined] segmentation looks for patterns of product usage, attitudes, perceptions, and the like, that might hopefully signal useful market segments.⁶

Post hoc segmentation occurs after the researcher has: (1) thoroughly analyzed the data, (2) determined that patterns differ considerably between two or more subgroups found in the data, and (3) determined that these subgroups can be consistently and concisely defined.⁷

Post-hoc segmentation **always** requires some form of primary research. Moreover, a variety of multivariate techniques (e.g., cluster analysis, automatic interaction detection, correspondence analysis, conjoint analysis-based clustering) may be used to identify the market segments.

Some Common Bases for Post Hoc Segmentation

The number of possible bases for market-defined segmentation appears limitless. The sole restricting factors consist of problems at hand, the imaginations of the people trying to resolve these problems, and frequently, time and cost considerations. Following is a useful classification of some of the variables that are often used for market-defined, post hoc segmentation schemas:

Product Selection Behaviors Usage rates and occasions (e.g., frequency of riding or trip purpose) Knowledge of and experience with product Substitutability of related categories (e.g., availability of alternative modes)	Mode Selection Behaviors Favorite travel mode Acceptable modes Disliked modes Mode loyalty versus mode switching
Product Class-Related Attitudes Benefits sought Problems encountered using product / service Attribute utilities of mode	Mode Related Attitudes Awareness and perceptions Mode user imagery Perceived appropriateness for use occasions
Person-Related Attitudes Self-perceptions Values Life style	Other Bases Stage in life cycle Socioeconomic status Ethnicity

Given all the possible variables that can be used, questions often arise as to which work best with different study goals. Moreover, many organizations attempt to be too ambitious and try to address several goals with a single study. The following list provides a general overview of the types of variables that correspond to specific study goals. Moreover, referring to this list can help an organization determine whether studies with multiple goals are too ambitious given the amount of data that would be required.

- **Studies providing a general understanding of a market:** Benefits sought, needs the product will fill, product / service purchase and/or use patterns, mode loyalty and switching patterns.

⁵ Green, Tull, & Albaum, *Research for Marketing Decisions*.

⁶ Myers & Tauber, *Market Structure Analysis*.

⁷ Neal, *Strategic Marketing Research*.

- **Studies focusing on product / service positioning:** Product / service usage, product preferences, benefits sought, needs the product / service will fill, product-, user-, and self-perceptions.
- **Studies of new product / service concepts and introduction:** Reaction to new concepts (intention to use, preference over current mode), benefits sought, product / service usage patterns.
- **Studies of pricing / fare decisions:** Price / fare sensitivity by use patterns.
- **Studies for advertising / marketing communications decisions:** Benefits sought, needs, psychographics / lifestyles, product-, user-, and self-perceptions.
- **Studies for routing and scheduling:** Use of / loyalty to current route, sensitivity to changes in route structure, benefits sought in route structure / accessibility.

An Application of Post Hoc Segmentation

The difference between a priori and post hoc segmentation is better illustrated through the use of examples. The North Carolina Department of Transportation used very simple and very sophisticated methodologies for identifying market segments in advance of introducing new rail corridors – the *Piedmont* and later, the *Carolinian*. Both methods relied on post hoc segmentation methods.



The *Carolinian* passenger train service operates in the Charlotte-Greensboro-Raleigh corridor of the Piedmont region of North Carolina. The *Carolinian* operated from October 1984 to September 1985 and was terminated due to lack of funding. Following the termination of the *Carolinian* service in the fall of 1985, officials of the State of North Carolina sought to restore rail passenger service through the Piedmont region of North Carolina. Research was commissioned to support the analysis of the operation of this intercity rail service.

The overall goal of the study was to examine the demand for intercity rail passenger service in the study corridor. Specifically, the major objective of the research was to develop a demand-forecasting tool that could be used to estimate ridership and revenue for alternative rail services that might be provided in the study corridor. Recognizing the need to understand the market for intercity rail services and to provide tools for better marketing the service, a second objective of the research was to characterize the market for intercity passenger rail service in the Piedmont corridor.

The research was conducted using a computer-based survey of potential rail travelers. It was conducted at shopping malls in the four largest cities in the study corridor. The interview collected a variety of information from respondents, including their attitude toward and experience riding an intercity train, the characteristics (origin, destination, purpose, frequency, etc.) of the train trip the respondent would most likely take, and the sociodemographic characteristics of the respondents and his / her household. In addition, a major component of the survey was designed to obtain information about each respondent's preferences for a variety of transportation service attributes, including travel time, fare, frequency of departures, food service, and seating.

The sensitivity of potential travelers to changes in these service attributes was examined using an approach known as conjoint – or trade-off – analysis. Conjoint analysis has been

used extensively in travel demand analysis and modeling because of its unique ability to estimate market potential for a broad range of possible services. It can also be used for market segmentation and is particularly applicable in benefit segmentation models. The market segments identified in this study were identified by performing a cluster analysis on the part-worth utilities and the importance weights for the attributes identified in the conjoint analysis. Part-worth utilities represent the perceived usefulness of, or preference associated with, various levels of an attribute (Note the use of both methods requires an understanding of multivariate analysis methods. Outside assistance from persons experienced in the use of these methods was required for this research).

The research identified five market segments for intercity rail travel.

EXHIBIT 1 SEGMENTS DEVELOPED FOR INTERCITY RAIL TRAVEL IN THE PIEDMONT CORRIDOR OF NORTH CAROLINA	
The Functional Traveler (28% of market)	Employed full-time, higher income, less positive about train service concepts Travels alone, not riding the train for fun Needs / cares about fast and frequent train service Does not want first class area on the train Will accept poor food service Would use train to avoid congestion / other highway hassles
The Day Tripper (26% of market)	Male, younger, single Travels with one other person, shorter trips, returns same day Needs / cares about frequent train service Will accept / does not care about road congestion Would use train to avoid higher bus fares
The Train Lover (21% of market)	Employed higher income, larger household, very positive about train service ideas, has traveled by train previously Riding the train is the purpose Needs / cares about low fares, food service Does not separate smoking / non-smoking trains
The Leisure (Hedonic) Traveler (15% of market)	Lower income, 2-person household, zero or one car Long trips, away more nights, not for business Needs / cares about reservations, nice seats, alcohol served on board Does not want smoking prohibited Will accept / does not care about infrequent service, slow trains, highway hassles
The Family Traveler (9% of market)	Female, larger households, fewer cars Longer stay away, travel with others (especially under 12), not to visit family or friends Needs / cares about fast trains, reservations, food service, fold-down work table, phone Does not want alcohol served on board Will accept / does not care about higher fares

This research and other data supported reopening of the *Carolinian*. Marketing communications focused on the functional traveler and the day-tripper.

Additional research was conducted by NCDOT to provide data to support the operation of an additional line – the *Piedmont*. This research used past mode selection behaviors as well as product selection behaviors to segment the market and provide a profile of current *Carolinian* users and potential users of both the *Carolinian* and the *Piedmont*. Six hundred telephone interviews were completed with randomly selected "travelers" residing in the service area. "Travelers" were defined as individuals over 16 years of age who had taken at least four trips in the twelve months before the research within North Carolina between Raleigh and Charlotte. The questions were intended to achieve five goals:

- Assess awareness, use, and satisfaction with passenger rail service compared with other modes of transportation.
- Provide a profile of current *Carolinian* users and potential users of the *Carolinian* and the *Piedmont*.
- Determine the reasons individuals use or do not use trains.
- Determine what areas of service are most important to traveling consumers, and measure how well the *Carolinian* performed in these areas.
- Assess the likelihood of travelers using the *Piedmont* when it becomes available.

Analysis of the data based on stated preference for different modes and likelihood of using the two lines identified current and potential market segments. Differences and similarities in demographic characteristics and attitudes were then compared across the identified segments.

Based on the research, the department identified three primary targets: families, older people (60 years of age and above), and college students, abandoning its earlier efforts at targeting business travelers. For both families and older people, the marketing would emphasize safety, convenience, and cleanliness of the service. Ads aimed at families also would identify the child-friendly features of the train, such as the ability to get up and walk around and the usefulness of tray tables for game playing. Marketing to college students would focus almost exclusively on the bargain that train travel represents. Efforts concentrated primarily on freshman and sophomores, who are less likely to be able to afford a car. The research also identified the most effective media to reach these targets.

NCDOT also changed aspects of its operations as a result of this research. A major finding was that nonriders were not willing to use any train service unless it was clean, safe, and efficient. NCDOT implemented several initiatives, including improving the lighting in station parking areas, installing surveillance cameras controlled by local police, and putting NCDOT caretakers in stations not staffed by Amtrak employees.

The November 1996 *Newsline*, published by the Transportation Research Board, provides some insight into the success of North Carolina Department of Transportation's strategies on the Piedmont Corridor. Conventional passenger service in the corridor makes a strong showing. During FY96, *Carolinian* revenues covered 86 percent of the train's operating costs, and since the *Piedmont's* introduction in May 1995, it has scored highest in customer satisfaction on all Amtrak trains surveyed. *Carolinian* ridership increased from 147,914 in fiscal year 1994 to 168,232 in fiscal year 1996. The *Piedmont* has also been a success, with average weekday ridership increasing from an average weekday number of 58 in its first year of operation to 87 in the months from June 1996 to December 1996.

Sources: North Carolina Department of Transportation, *The Market for Rail Passenger Service Among North Carolina Consumers*, 1993.
Eric I. Pas and Joel C. Huber, "Market Segmentation Analysis of Potential Intercity Rail Travelers," *Transportation* 19 (1992), pp. 177-196.

Some Cautions on Market-Defined (Post Hoc) Segmentation

The power of market-defined (post hoc) segmentation cannot be underestimated. This does not mean, however, that this is a problem-free approach.

First, and foremost, **there is an inherent risk in the use of market-defined (post hoc) segmentation.** By its very nature, you cannot know several key facts until the data has been gathered and analyzed. Notably, you do not know whether you can in fact segment the sample (or population). Other information that does not emerge until after data analysis includes the number and size of the segments, the stability of the segments, the homogeneity of the segments, and the size and complexity of classification models that may emerge from the segmentation.

At a minimum, the process of market-defined (post hoc) segmentation should begin with the development of research hypotheses. For example, persons who are concerned with the environment are more predisposed to using public transportation. In more complex studies, a model of consumer behavior may be developed. Skipping this step is myopic and will lead to segments that are no better than what would have been developed using an *a priori* approach. Even with the best planning, poorly defined hypotheses or a faulty model leading to a poor segmentation scheme always remains a possibility. You sometimes cannot know if a model works until you try it. Strategies to minimize this risk will be discussed in Chapter 3.

Second, **some studies of this nature get into serious trouble by underestimating the complexity of segmentation data.** In many instances it is very difficult to understand the specific criteria that were used to assign a respondent to a specific segment. This is particularly true when using complex multivariate models that make use of factor and/or cluster analysis. All too often, too little time is left for data analysis and interpretation and the results of this analysis. Moreover, there is frequently pressure from management to deliver the results, leading to a temptation to promise early delivery and to hasten the analysis. This has become more problematic recently with the advent of software-based programs that appear to create segments with a touch of a button. A segmentation study is one place where you should never try to rush data analysis and interpretation.

Finally, **the cost of post-hoc segmentation is often greater than that using *a priori* methods.** Sample sizes are larger and questionnaires may be more lengthy or complex. In many cases, multivariate analysis is indicated, requiring the use of a person with experience in the specific methods being considered.

This handbook focuses primarily on the use of market-defined segmentation schema. While this focus is not meant to minimize the use of *a priori* methods, many transit agencies have used these methods. The purpose of this handbook is to present some new ideas and to encourage transit agencies to think about market segmentation in some new and different ways. The remainder of this chapter explores in detail some of the most common bases for segmenting the market.

Physical Attribute Segmentation

Defined

Demographic, socioeconomic, and geographic segmentation bases and variables provide important information about individuals within specific markets. Segmenting markets by these physical dimensions is a logical starting point for several reasons:

- The data is relatively easy to obtain.
- It is generally less expensive than other forms of segmentation research.
- It provides a quick snapshot of a market (an understanding of market structure and potential customer segments).
- Populations can be sampled and accurately projected to represent characteristics of the entire market.
- The information gathered can be of great value for decision-making.
- The data corresponds to other available data and information for decision-making.

Common Bases for Physical Attribute Segmentation

Geographic location has long been considered useful as a basis for market segmentation studies. It has been believed that population dispersion and cultural development result in particular behavioral patterns form different segments. Geographic analysis is also one of the simplest methods for dividing markets into possible target segments. Segmenting by geography has been the primary way many transit systems have segmented markets for many years. Where people live, work, and play has a great impact on their use of public transportation.

Probably the earliest and certainly most commonly used basis variables for segmenting consumer markets today are population **demographics**. Demography is the statistical study of human populations and their vital characteristics. Socioeconomic factors, which are closely linked to demographics, are used to analyze a population in terms of economic and social classes. While technically different, the broad definition of demographics as used in market segmentation includes both demographic and socioeconomic variables. The following table illustrates the most common variables:

Demographics	Socioeconomics
Population	Education
Number of Households / Families	Occupation
Household Size / Family Size	Income
Age	Home Ownership (owner versus renter, type of dwelling, mobility / stability)
Family Life Cycle	Automobile Ownership (number and type of vehicles owned)
Marital Status	Social Class
Race	
Nationality	
Religion	

A reference for selecting appropriate demographic and socioeconomic variables for segmentation analysis is provided in an Appendix at the end of this report.

Demographic variables are most often used for *a priori* segmentation. Agencies relying on this analysis have typically begun their segmentation research by determining selected demographic characteristics of their current riders – for example, age, income, and access to an automobile. This data is then compared with data from secondary sources – for example, the U.S. Censuses of Population and Housing. Significant differences are then used as a basis for informing decisions about one or more parts of the marketing mix.

Demographic surveys may also be done *post hoc*. In this case, it becomes possible to compare the demographics of different segments in the sample – for example, riders compared with nonriders or frequent riders compared with infrequent or occasional riders. Studies of this general nature can provide considerable insight into the market and often represent the core of many agencies' market research efforts.

To maximize the value of the physical dimensions, a composite **geodemographic** model can be used for segmentation analysis. Geodemographics is defined as the description of demographics by geographic areas. The basic premise behind geodemographics is that the sum of the whole is more powerful than the individual parts – geography, demographics, and socioeconomic factors.

In consumer marketing, the unit of analysis is the zip code or block group. In transit, transit analysis zones (TAZs) are used. Geodemographic analysis can be quite sophisticated. New software and GIS mapping capabilities have greatly enhanced the value of geodemographics. One approach to geodemographic analysis uses cluster analysis – a multivariate procedure frequently employed in market segmentation research. Here, segments are identified consisting of zip codes or TAZs that have similar demographic characteristics. It is important to note that the codes within each geodemographic segment may be widely dispersed throughout the study area. They may not be contiguous and, therefore, may not represent a particular area.

Geodemographic segmentation is used extensively by transit agencies. It is an essential component for route planning. Moreover, it is a relatively inexpensive and not unreasonable alternative to benefit and/or psychographic segmentation. Given the amount and accessibility of this data, it can serve as an excellent starting point in understanding differences within a market.

Benefits

Demographics and geodemographics have been popular as a basis for segmentation over the years because:

- They are easy to measure.
- They describe what consumers *are like*, and from this, plus our own experience, we can infer something about how they might think and some of the things they are most likely to want.
- There is the belief that such variables as gender, age, marital status, and the number and age of children are strong life cycle factors associated with consumption habits.
- Data describing the entire U.S. population in terms of these characteristics are readily and cheaply obtainable from government sources (e.g., Censuses of Population and Housing) as well as from some business publications (e.g., *Sales and Marketing Management Annual Survey of Buy Power*). Studies also may be available at the local level, and in those cases where secondary data is not readily available, primary data can be obtained for a relatively low cost.
- Coverage for all major types of media is almost always available in terms of consumer demographics, making it particularly useful for marketing and advertising folks.

Limitations

Despite these advantages, demographics provide limited insight into the minds of the consumer and have generally failed to explain consumption behavior.

One should not use geodemographic data to the exclusion of other market-based data. In most cases, demographic segments tend to be defined too broadly. That is, people with the same demographics may not behave in the same manner. Moreover, demographic and geodemographic segmentation tends to place too much emphasis on income and/or other socioeconomic factors as the discriminating factors.

Moreover, demographic data does not consider the psychological or social dimensions influencing consumers and their mode choice decision. Except for specific products or services targeted at specific demographic groups – for example, a senior or youth pass – single demographic measures have generally not proven effective. This is not to say that demographic segmentation is useless. It can be very helpful in defining targets for the generic expansion of markets with low incidence of use. Transit may be a perfect example of just such an application. For example, the demographic characteristics of bus riders – younger age groups, older age groups, and lower income groups – are sharply different from those of non-bus riders. Accordingly, it would probably be a mistake to mount an advertising campaign targeted only to upper income people, at least without significant changes to the product / service offering. However, some demographic factors are less likely to be subjected to environmental influences.

An Application of Geodemographic Segmentation

In recent years, with the advent of Geographic Information System (GIS) mapping technology, geodemographic segmentation has proven particularly useful for transit. GIS technology allows for easy manipulation and visualization of census data; spatial trends can be detected. The following examples illustrate the power of geodemographic segmentation for transit planning.



In order to assess the relative demand for transit services among all neighborhoods in the City of St. Louis, several demographic characteristics that are frequently associated with transit needs were examined. Analysis was conducted using 1990 Census data.

Census data has long been an important resource used by public transit providers, consultants, and others. The 1990 Census provided a reliable set of demographic characteristics that could be easily manipulated by transportation professionals as model inputs, for forecasts, and for various other transportation applications. Hundreds of demographic characteristics, for both households and persons, are available at various geographic units, from units as large as states and counties to units as small as census blocks. Furthermore, the Census Bureau prepared a special set of tabulations of particular interest to transportation professionals. The data provided by the 1990 Census would be difficult and expensive for transit providers to duplicate.

The City of St. Louis considered six demographic variables commonly associated with transit. These variables included:

- Population;
- Seniors, defined as residents 65 years of age or older;

- Annual household income below \$15,000;
- Households with no automobiles;
- Unemployed persons; and
- Persons with mobility limitations.

A ranking was given to each region in St. Louis for each variable. All rankings were subsequently combined so that an overall representation of transit need could be developed.

Census information is reported at various geographic levels including states, counties, municipalities, census tracts, census block groups, and census blocks. Since *census blocks* are so small, much data is not reported at this level due to issues of confidentiality. Data at the census block level is effectively limited to general population statistics. St. Louis used data collected at the *census block group* level, so that small areas could be evaluated.

To pinpoint areas with relatively high transit dependence (and subsequently those areas most likely to support transit services), comparable "ranges" were defined on each demographic map. Ranges were created so that all of the 588 block groups in St. Louis were divided into five equal quintiles. Since the 588 block groups composed "ranges" made up of five equal quintiles, two ranges included 117 block groups and three ranges included 118 block groups $((117 \times 2) + (118 \times 3) = 588)$. By separating the block groups into equal quintiles, it was easy to locate those areas of St. Louis exhibiting relative transit dependence. (A sample demographic map is presented on the following page.)

Next, a composite indicator was developed to summarize the overall level of transit dependence in St. Louis. A score of "1" through "5" was assigned to each of the block groups for each of the six demographic variables considered, where "5" showed the highest level of transit need. Each score corresponded to the range within which each block group fell on the individual maps. Using the distribution of households earning less than \$15,000 per year as an example, the block groups were coded as follows:

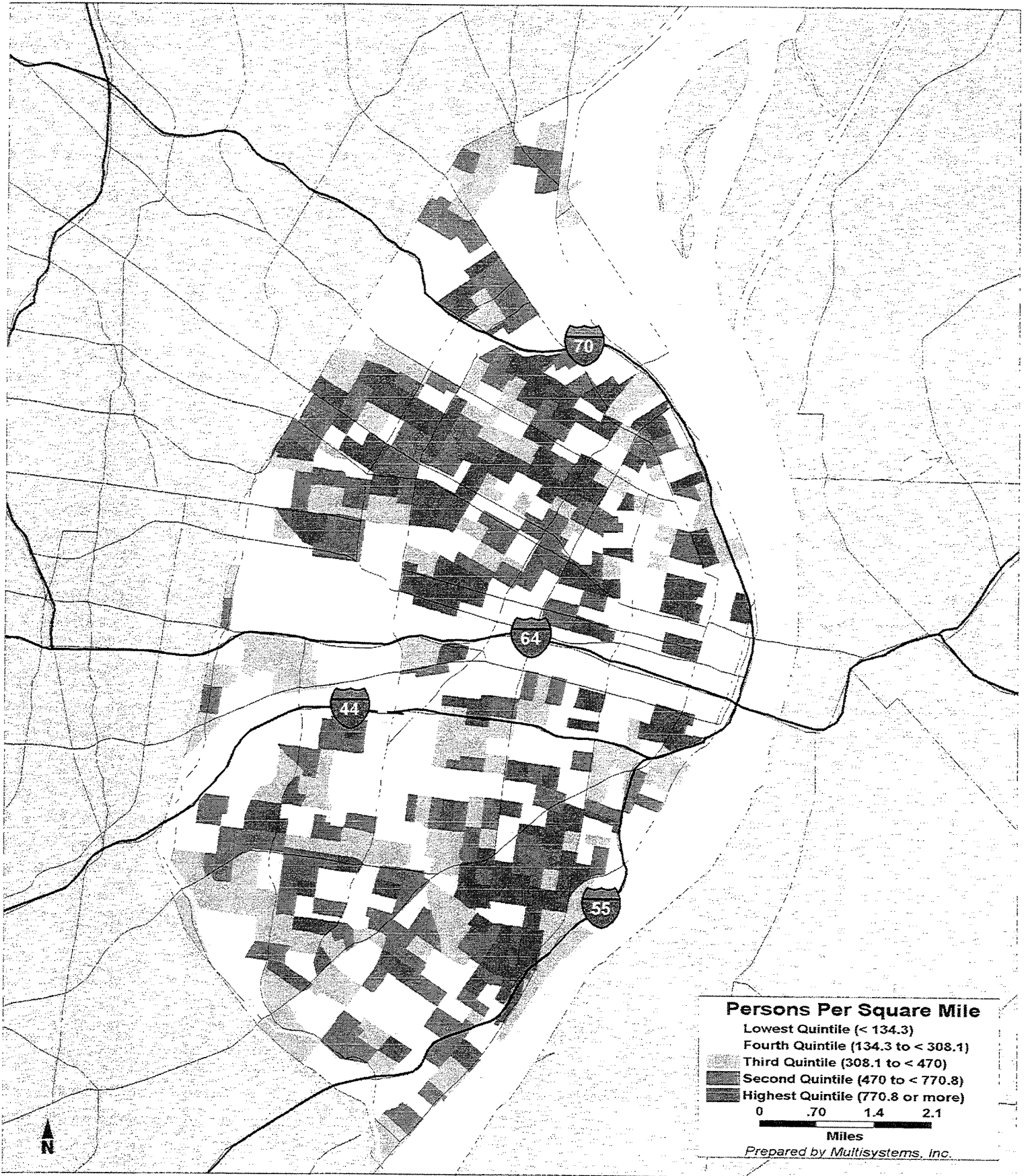
<u>Score</u>	<u>Households Per Square Mile</u>
1	Less than 452 households per square mile
2	At least 452, but less than 1,000 households per square mile
3	At least 1,000, but less than 1,555 households per square mile
4	At least 1,555 but less than 2,330 households per square mile
5	2,330 or more households per square mile

This procedure was followed for all six indicators. After the other five indicators were ranked in a similar way, the six scores for each block group were summed. The composite score for each block group ranged from 6 (for those block groups that ranked in the lowest quintile in each of the five characteristics) to a high of 30 (for those block groups that ranked in the highest quintile in each characteristic).

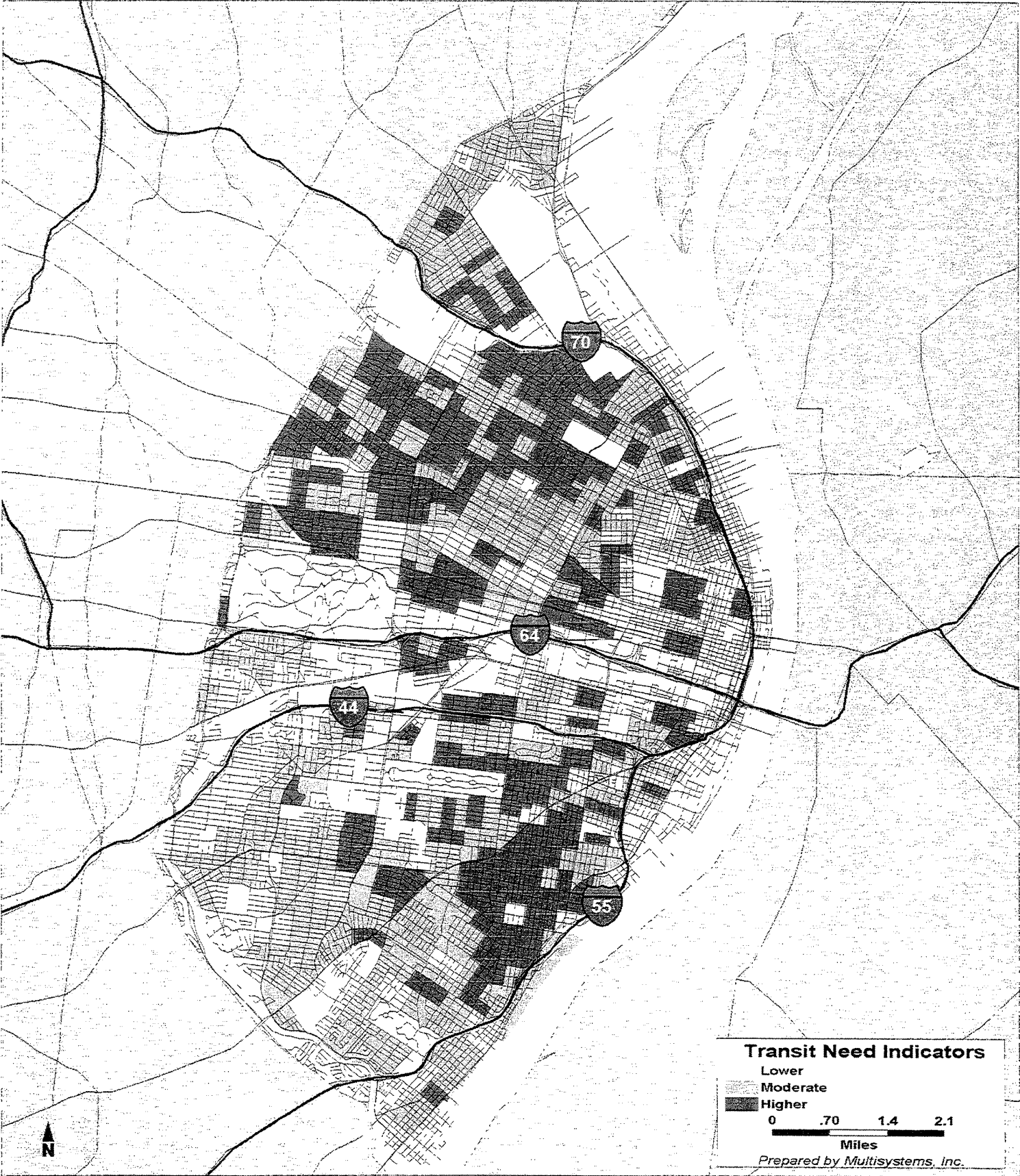
Finally, a composite map was created, summarizing overall transit need in St. Louis. The areas exhibiting the highest need included approximately 31 percent of the block groups (with composite scores between 23 and 30). Block groups with the lowest need included the 30 percent with the lowest score (between 6 and 14); all areas with scores between 15 and 22 were considered to have moderate need. The composite map is presented on page 30, and indicates a comparatively high level of transit dependency scattered throughout the northwest section of St. Louis, and a noticeable cluster in the southeastern section of the city.

Source: *Use of Census Data to Pinpoint Areas of Transit Need*, prepared for TCRP Project B-9 by Multisystems, Inc.

**Density of Persons With Mobility Limitations
In the City of St. Louis, By 1990 Census Block Groups**



Summary of Transit Need in the City of St. Louis





In addition to determining important concentrations of transit dependent persons, transit planners are often interested in determining trip-making characteristics (such as trips to work) among residents living in transit-dependent neighborhoods. The best source of information describing work trip flows is found in the 1990 Census data.

The 1990 Census included a set of special tabulations of interest to transportation planners. These special tabulations, the 1990 Census Transportation Planning Package (CTPP), were based on a 17 percent sample of all work trips and is composed of three parts. The first component presents information at the residential end. The second component presents information at the work location. The voluminous third component ties together information about where people live and information about where people work. The CTPP is also divided into 2 "elements", the "statewide element" and the "urban element". The statewide element is more general, and contains travel information down to a geographic unit as small as Minor Civil Divisions (MCDs). The urban element contains 1990 journey-to-work information down to a much smaller geographic unit, by census tract or Transportation Analysis Zone (TAZ).

Information from the 1990 CTPP was used to identify dominant work trip flows among employees living in different parts of St. Louis. This data was available by TAZ. St. Louis contained 225 Transit Analysis Zones (TAZ) in 1990.

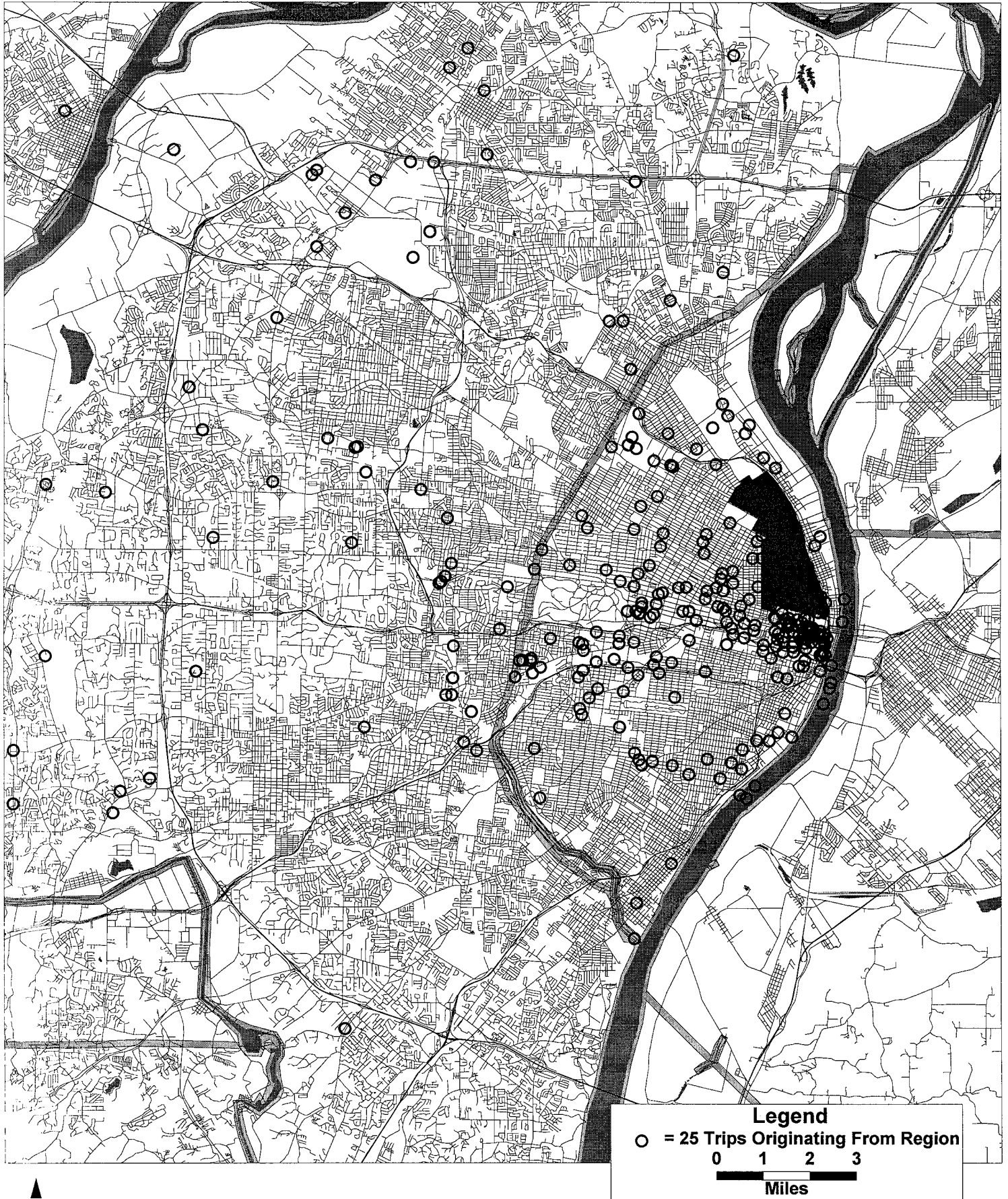
Examining major regional flows at the TAZ level is a monumental task because of the large number of TAZs involved. Therefore, to facilitate the analysis of trip patterns throughout the region, all 225 TAZs in St. Louis were initially aggregated to a less detailed neighborhood level. Aggregating the TAZ boundaries and information created fourteen neighborhoods. TransCAD GIS was used to display work trip flows from each neighborhood (TAZ aggregation) to every destination (TAZ) in the St. Louis metropolitan area. The journey-to-work distribution among residents of one St. Louis neighborhood is presented on the following page. Residential neighborhoods ("regions") are indicated by shaded polygons; work trip destinations for neighborhood residents appear as circles.

Since the number of trips originating in each neighborhood differ significantly, and to more easily observe travel trends among residents of each neighborhood, travel data was manipulated in TransCAD to equalize the number of work trip destinations (circles) that appear on each map. The number of trips represented by each circle was calculated so that each map contained a total of 300 circles. The resulting maps allow transportation planners and others to visually detect work trip travel trends among residents of each neighborhood in St. Louis. As can be seen in the following map, the work destination for employees living in neighborhoods just north of the central business district (CBD) is heavily concentrated in the downtown area.

Information collected from the census and portrayed in maps is often the first step in service planning. Transit needs become evident, and gaps in service may become easier to detect. Census data, as portrayed geographically, help transit planners consider modifications in public transportation routes which would allow for improved work opportunities among residents of transit dependent neighborhoods.

Source: *Use of CTPP Data to Illustrate Work-Trip Flows*, prepared for TCRP Project B-9 by Multisystems, Inc.

1990 Work Trip Destinations From All Origins in Highlighted Region



Sources of Demographic and Geodemographic Data

Good geodemographic data does not have to be expensive. There are some excellent secondary sources of geodemographic data that are available at little or no charge through public or university libraries. There are dozens of quality demographic references available at most public libraries, some of which are listed in the table below. Keep your eye on the Internet. Many of these sources are now becoming available on-line as well.

Library demographics are both underused and underestimated as planning tools. They represent one of the best avenues for marketing information at little or no cost. Many transit agencies rely almost totally on census data, ignoring the more "marketing-oriented" publications that are available, believing they are not applicable to the market they are serving. The value of these publications in understanding changes and trends in the marketplace cannot be underestimated.

	% of Libraries Where Available
County and City Data Book	96
U.S. Statistical Abstract	96
Sales and Marketing Management's Surveys / Special Issues	93
State and Metropolitan Area Handbook	93
Census of Population and Housing	89
Editor and Publisher Market Guide	89
Rand McNally Commercial Atlas and Marketing Guide	85
American Demographics	85
CACI's Sourcebooks	74
Statistical Reference Index	74
Statistical Handbook Series	59
State Statistical Abstracts	56
Data from Local / County / State Agencies	48
Donnelley's Market Profile Analysis	37
SRDS' Lifestyle Market Analyst	22
REZIDE: National Encyclopedia of Residential ZIPCode Demography	15
Zip Code Sale Information Guide	11

The Census represents one of the most important "free" sources of this information. As of 1990, this data is available on CD-ROM to allow for easier manipulation and analysis. Following is a list of the population items (appears on all forms) and sample components (collected from approximately one in six housing units) from the 1990 Census of Population and Housing.

SUBJECT ITEMS INCLUDED IN THE 1990 CENSUS OF POPULATION AND HOUSING	
100 Percent Components	
Population Items	Housing Items
Household relationship	Number of units in structure
Sex	Number of rooms in unit
Race	Tenure (owned or rented)
Age	Value of home or monthly rent
Marital status	Congregate housing
Hispanic origin	Vacancy characteristics
Sample Components	
Social Characteristics	Housing Items
Place of birth, citizenship	Years moved into residence
Education	Number of bedrooms
Ancestry	Plumbing & kitchen facilities
Migration – 1985 residence	Telephones in unit
Language spoken at home	Vehicles available
Veteran status	Heating fuel
Disability	Source of water and method of sewage disposal
Fertility	Year structure built
	Condominium status
	Farm residence
	Shelter costs with utilities
Economic Characteristics	
Labor force	
Place of work and journey to work	
Year last worked	
Occupation, industry, and class of worker	
Work experience in 1989	
Income in 1989	

The Census Bureau has added an innovative geodemographic mapping component to its offerings. Topologically Integrated Geographic Encoding and Referencing (TIGER) provides computer-readable mapping and a geographic database for the entire United States. Plotting geographic coordinates, TIGER serves as the underlay for address / area data (demographic, economic, and so on) provided by users that result in high-quality, digital maps for a variety of geographic areas. There are many marketing and geographic information systems (GIS) applications for the TIGER system. Currently, the price of TIGER files varies from as little as \$100 for a single CD (there are 44 disks for the United States) to \$38,000 for the whole country on computer tape. Many companies, including those working specifically in the transit industry, provide specialized services that use TIGER. For further information on the TIGER resource list, contact the Bureau of the Census by phone at (301) 736-4100, by modem at (301) 763-7554, or on the Internet at www.census.gov.

If your agency is considering the use of a GIS system, ask yourself the following questions.

COMPUTER MAPPING: KEY QUESTIONS

- ✓ What type of system is appropriate? PC-based, mini, or mainframe?
- ✓ What type of software is provided?
- ✓ How good is the quality of finished maps?
- ✓ Are zooming capabilities provided?
- ✓ Can you add your own data to the system?
- ✓ How flexible is the output?
- ✓ How easy is the system to use?
- ✓ Can you "test drive" the system?
- ✓ How much support does the vendor provide?
- ✓ How much does it cost?

Source: Martha Farnsworth Riche, "Computer Mapping Takes Center Stage," *American Demographics*, June 1986, p. 30.

Researchers should not limit themselves to libraries in the search for secondary demographic data. There are other good sources for low- and no-cost geodemographic data. These include government agencies (federal, state, and local branches), universities, and other local sources.

Many syndicated sources exist that provide the marketer with demographics about specific markets. In recent years, this data has become available in electronic format, increasing its accessibility and usefulness.

Several syndicated sources may be particularly useful for transit marketers and service planners. The most prominent offers are called PRIZMTM (Claritas), ClusterPlusTM (Donnelley), and ACORNTM (CACI, Inc.), with each having some advantages over the others. Interestingly, all three services report approximately the same number of segments, about 50.

These sources generally rely on census data to group neighborhoods throughout the United States into different demographic / life-style clusters. Several are now available as computer databases that can be used on a desktop computer. In some cases, mapping technology is also available.

ClusterPlusTM (Donnelley) classifies all households into 47 different clusters. The emphasis is on demographics (age, ethnicity, income, mobility, education, occupation, and nature of housing) rather than psychographics. ClusterPlusTM provides the current year's estimates of various demographics along with five-year projections. The marketer should consider markets not only as they presently exist, but also as they are likely to be in later years. The following table illustrates a few of the ClusterPlusTM segments.

EXHIBIT 2 SAMPLE CLUSTERPLUS™ SEGMENTS	
1	Highest socioeconomic status, highest income, prime real estate areas, highest educational level, professionally employed, low mobility, homeowners, children in private schools.
5	High income, high home values, high education level, professionally employed, low mobility, homeowners, homes built in 1950's and 1960s.
10	High education level, average income, professionally employed, younger, mobile, apartment dwellers, above-average rents.
15	Older, very low mobility, fewer children, above-average income and education, white-collar workers, older housing, urban areas.
20	Areas with high proportion of group-quarters population, college dormitories, homes for the aged, mental hospitals and prisons, other institutions.
25	Younger, mobile, fewer children, below-average income, average education, apartment dwellers.
30	Low income, lowest educational level, families with one worker, farms, rural areas.
35	Older housing, low income, average education, younger, mobile, fewer children, apartment dwellers, small towns.
40	Older, very low income, low education levels, one-person households, retirees, few children, older homes and apartments
47	Urban blacks, very low income, low education level, very high unemployment, female householders with children, older housing.
Source: <i>Demographics On-Call</i> . Stamford, Conn.: Donnelley Marketing Information Services, 1987.	

PRIZM™ (Potential Rating Index by ZIP markets), from Claritas classifies census blocks into one of 62 basic neighborhood types based on social rank (income, employment, education, etc.), household composition (age, gender, family type, dependency ratios, etc.), mobility (length of residency by owner or renter, auto ownership, etc.), ethnicity (race, foreign birth, ancestry, language, etc.), urbanization (population and housing density), and housing (owner / renter status, home values, number of stores, etc.). All of the 62 clusters are grouped into 15 broader social groups based on their affluence and density of the neighborhood in which they reside. PRIZM also ties in some major behavioral aspects – consumer purchasing, magazine subscriptions, and credit card information. Moreover, it integrates media audience data for television, radio, and print media, meaning that the PRIZM data can also be used to select media that best reaches a particular market. PRIZM has not integrated any data such as the journey-to-work data that could prove useful for transit planning. As such, PRIZM is primarily a marketing tool.

The following table shows the names and descriptions of a few of the PRIZM clusters. The National Symphony used the PRIZM clusters and found that far more "Money & Brains" people (cosmopolitan singles and couples) than "Furs & Station Wagons" (affluent suburbans) attended. The National Symphony began to promote in neighborhoods of "Bohemian Mixers" (childless couples), and in some areas sales jumped 25 percent.⁸

EXHIBIT 3 SAMPLE PRIZM™ CLUSTERS	
S1 – Elite Suburbs 03 – Executive Suites <i>Upscale White-Collar Couples</i>	Cluster 3 describes yesterday's "Young Influentials," who are en-route to becoming tomorrow's "Winner's Circle." Many have married and moved into condos or starter homes. Unique for S1, this cluster is above average in preschool kids. Although they rank well below "Winner's Circle" in affluence, they are well-educated, ambitious, and competent; they're just ten years younger. Affluent Age Groups: 25 – 34, 35 – 44 Dominant White, High Asian

⁸Michael J. Weiss. *The Clustering of America*. New York: Harper & Row, 1988.

EXHIBIT 3 SAMPLE PRIZM™ CLUSTERS	
U1 – Urban Uptown 09 – American Dreams <i>Established Urban Immigrant Families</i>	Cluster 9 typifies the "American Dream." Immigrants and descendants of multi-ancestries populate these multi-racial, multi-lingual neighborhoods. Cluster 9 tends to have big families, which is unique to group U1. Multiple incomes from trades and public service have raised them to the second affluence level. Upper Middle Age Groups: 35 – 44, 45 – 54 Ethnically Diverse
C1 – 2 nd City Society 11 – Second City Elite <i>Upscale Executive Families</i>	Cluster 11 describes the "movers and shakers" of our second cities that are found coast to coast, with its typical example in the wealthy enclaves of Huntsville, Alabama. Primarily married with teenage children, they give first attention to their families, homes, and clubs, then steal away to play in Europe. Affluent Age Groups: 45 – 54, 55 - 64 Dominant White
T1 – Landed Gentry 15 – God's Country <i>Executive Exurban Families</i>	Many educated, upscale, married executives and professionals are raising their large families in the remote exurbs of major metros, the outskirts of second cities, and scenic towns. Multiple incomes support their affluence. Life centers around family and outdoor activities. This is cluster 15, in the second affluence decile. Affluent Age Groups: 35 – 44, 45 – 54 Dominant White
S2 – The Affluentials 21 – Suburban Sprawl <i>Young Midscale Suburban Couples and Singles</i>	Multi-racial, multi-lingual neighborhoods are typically found in the centers of major metros. Cluster 21 is the exception, showing above average concentrations of native and foreign-born ethnics who have used education to become executives, administrators, and technicians. They have moved to the suburbs and the fourth affluence decile. Middle Age Groups: Under 24, 35 – 44 Ethnically Diverse
S3 – Inner Suburbs 24 – New Beginnings <i>Young Mobile City Singles</i>	Concentrated in the boomtowns of the Southeast, Southwest, and Pacific coast, cluster 24 is a magnet for fresh starts. Populated by well-educated youths, many are minorities. Some are divorced, while many others are solo parents. The majority lives in multi-unit rentals, and work in a variety of low-level, white-collar jobs. Middle Age Groups: Under 24, 25 - 34 Ethnically Diverse
U2 – Urban Midscale 30 – Mid-City Mix <i>African-American Singles & Families</i>	Cluster 30 is in the seventh affluence decile, geographically centered in the Northeast and Great Lakes regions. Similar to all U2's, cluster 30 shows above-average ethnic diversity and a mix of white- and blue-collar employment. These rowhouse neighborhoods on the urban fringe are two-thirds black and have a high incidence of college enrollment. Middle Age Groups: Under 24, 25 – 34, 35 – 44 Dominant Black
C2 – 2 nd City Centers 34 – Starter Families <i>Young Middle-Class Families</i>	Bucking recent trends, "Starter Families" opted for early marriage and parenthood. Here we see a higher index for blue-collar jobs, large families, and solo parents with young children. Many are living in natural beauty with a skew to the Pacific coast, the Rockies, and the Northwestern Canadian borderlands. Middle Age Groups: Under 24, 25 – 34 Mixed Ethnicity, High Hispanic
T2 – Exurban Blues 38 – Middle America <i>Midscale Families in Midsized Towns</i>	Sitting atop the sixth affluence decile of the U.S. median income, cluster 38 is aptly named. These are family neighborhoods with a high index for married couples with children. They are busy with kids and dogs, and enjoy fast food, sports, fishing, camping, and watching TV. In approximate balance with the U.S. population, they are found coast to coast. Middle Age Groups: 25 – 34, 35 – 44 Dominant White
R1 – Country Families 42 – New Eco-topia <i>Rural White / Blue-Collar / Farm Families</i>	Found in the Northern Pacific, the Rockies, and northern New England, cluster 42 is the only R1 cluster with above-average college educations. "New Ecotopia" has an even mix of white / blue-collar jobs. A high index for personal computers reflects several new, high-tech industries in these pristine areas. Middle Age Groups: All age groups 35+ Dominant White

EXHIBIT 3 SAMPLE PRIZM™ CLUSTERS	
U3 – Urban Cores 45 – Single City Blues <i>Ethnically-Mixed Urban Singles</i>	Cluster 45 is found in most Eastern megacities, in the new West, and is third in the most singles in America. Often found near urban universities, cluster 45 hosts a fair number of students. With very few children, it's a mixture of races, transients, and night trades, and is best described as a "poor man's Bohemia." Lower Middle Age Groups: Under 24, 25 – 34, 65+ Mixed, High Asian
C3 – 2 nd City Blues 49 – Hometown Retired <i>Low-Income, Older Singles & Couples</i>	Except for some hot spots in the West, cluster 49 lies mostly in the Appalachias and central Florida. It ranks third in singles, second in ages over 65 and first in retirement. These folks take bus tours, collect stamps, play cards and chess. Lower Middle Age Groups: 55 – 64, 65+ Dominant White
T3 – Working Towns 54 – Norma Rae-ville <i>Young Families, Bi-Racial Mill Towns</i>	Cluster 54 is geographically centered in the South, in the Mississippi delta, and in the Gulf coast, and Atlantic states, which have become the centers for our non-durable industries, such as clothing and home furnishings. With minimal educations, a black / white population mix, and unskilled labor, cluster 54 falls in the ninth affluence decile. Poor Age Groups: Under 24, 65+ Dominant Black
R2 – Heartlanders 57 – Grain Belt <i>Farm Owners & Tenants</i>	Feeding America and sometimes the world, cluster 57 is our breadbasket. Centered in the Great Plains and South Central regions, this cluster shows a high index of Latino migrant workers. Life here is tied to the land, and ruled by the weather. Mostly self-sufficient, family- and home-centered, these families are poor only in money. Lower Middle Age Groups: 65+, 55 – 64 Dominant White, Some Hispanic
R3 – Rustic Living 59 – Rustic Elders <i>Low-Income, Older, Rural Couples</i>	Cluster 59 is the third most elderly cluster in America, with the lowest incidence of children in group R3. It covers the nation, but is concentrated in the Great Plains and along the West Coast. Although the lifestyle is pure country, the high indices for country clubs, powerboats, sailboats, volleyball, and health walks are surprising. Lower Middle Age Groups: 65+, 55 – 64 Dominant White
Source: PRIZM, <i>Summary Lifestyle Descriptions, Cluster Narratives, Various Promotional Materials</i> , Claritas, Inc. 1996.	

There are other similar systems available. Vision (National Decision Systems, Incinitas, CA) sets up its categories with an emphasis on buying patterns, media preferences, and financial services. Like the others, they have 50 unique segments. CACI (CACI Market Analysis, Fairfax, VA) offers a combination of demographics and buying power for every county and zip code. They have 44 consumer types in their analysis. Equifax National Decision Systems (San Diego, CA) offers the ability to define a geographic area of any size and shape anywhere in the United States and easily obtain accurate, up-to-date information about the people, households, and businesses within that specific area. Data regarding population and household demographics, socioeconomics, housing characteristics, lifestyle segments, consumer purchase behavior, media habits, and consumer attitudes is available. Some of these systems are available as computerized databases and may cost as little as \$15,000.

It is not clear how applicable the actual use of these services would be for transit. Typically, the analysis is done at the national level and may be hard to apply reliably to a specific geographic level – notably to the level of a transit analysis zone (TAZ). However, keeping up to date on these services and the changes in their segments can provide good insight into changes in the demographic and other characteristics of the market at a national level that can be used as input into what is happening at the local level. Much of this information is available over the Internet by visiting these companies' home pages. Moreover, many advertising agencies have access to these services. If your agency works with an advertising agency, be sure to ask what data they might have available.

Care must be taken, however, when using any published or purchased source of demographic or geodemographic information. Use the following checklist to assess the relevance and reliability of this data.

EXHIBIT 4**USING PUBLISHED OR PURCHASED SOURCES OF DEMOGRAPHICS / GEODEMOGRAPHICS**

- ✓ What is the source of the demographic data? How reliable is the source?
- ✓ What variables are included? Are they appropriate for your needs?
- ✓ How current is the information?
- ✓ How accurate is the information?
- ✓ Are forecasts included? How are they derived?
- ✓ Is assistance in specifying the appropriate variables available?
- ✓ Is assistance in understanding and implementing the findings available?
- ✓ How is the information presented (reports, tables, maps, graphics, or other)?
- ✓ Is the output flexible – available in formats other than paper reports (e.g., CD-ROM, computer tapes, floppy diskettes, and microfiche)?
- ✓ How frequently will updates be needed? How frequently are updates available?
- ✓ How practical is the information?
- ✓ How much will it cost? (Be sure to consider external and internal costs.)

Product Usage

Definition

Often the most useful place to start product-based segmentation efforts is with usage rates. Usage rates are one of the simplest basis variables used for segmentation efforts. For example, some companies just dichotomize the consumption distribution into heavy versus light users at the median point. More often, three categories are used: heavy, medium, and light users.

While simplistic, it is often very useful in those product / service categories where some users consume far more than others. For example, about 20 percent of U.S. beer drinkers consume about 70 percent of the total, 15 percent of the passengers on one airline at one time account for 65 percent of all travel on that airline, and 2 percent of the accounts in one large bank trust department hold about 50 percent of all assets under trust.

Product usage segmentation is particularly applicable to transit. This is frequently the next step taken once agencies have exhausted the possibilities of segmenting by demographics and/or geodemographics. In the transit industry, segmenting based on product usage is synonymous with segmenting based on ridership – notably frequency of ridership. Like the products and services described above, the "80-20" principle may apply in transit – that is, 20 percent of the riders account for 80 percent of the ridership.

To analyze transit markets based on ridership, it is first necessary to classify riders and nonriders into specific categories. Sometimes agencies know from previous research the distribution of riding frequencies for its customers so they can use usage rates as an a priori basis variable – as a banner in cross-tabulations. For example, transit may define frequent riders as those who ride the bus five or more days a week.

However, simply relying on an intuitive or "gut-level" cut of the data may mask real differences and create a group of riders instead of a real segment of heavy users or frequent riders. It would be better to segment on a post hoc basis, letting differences in attitudes, lifestyle, and other characteristics determine the differences between a "frequent," "infrequent," "every once in a while," and "non" rider. Once the post hoc usage segments are formed, it becomes easy to cross-tabulate demographics and other survey responses against them.

Applications of Product Usage Segmentation



A cooperative effort between the Regional Transportation Authority (RTA), Chicago Transit Authority (CTA), Metra, and Pace resulted in a comprehensive, regionwide attempt to measure the region's transit users' and nonusers' awareness of and attitudes toward travel and public transportation in northeastern Illinois. The goals of this study were to:

- Determine residents' awareness of and attitudes toward public transportation in general, and the services provided by CTA, Metra, and Pace in particular.
- Identify perceptions of transit's role and current value to the region.
- Identify residents' travel behavior and use of CTA, Metra, and/or Pace.
- Identify key factors that determine residents' travel mode choice.
- Determine why former transit users and nonusers do not currently ride transit and why occasional riders do not ride more frequently.

Results of this research were used by the RTA and the Service Boards to segment the region's travel market based on travelers' stated behavior and attitudes. By identifying unique market segments, the agencies can develop targeted planning and market strategies to retain the existing ridership base and to attract new riders.

A total of 2,176 riders and nonriders were interviewed for this research effort. Respondents residing in the RTA service territory were carefully questioned about their current and past ridership on CTA, Metra, and/or Pace.

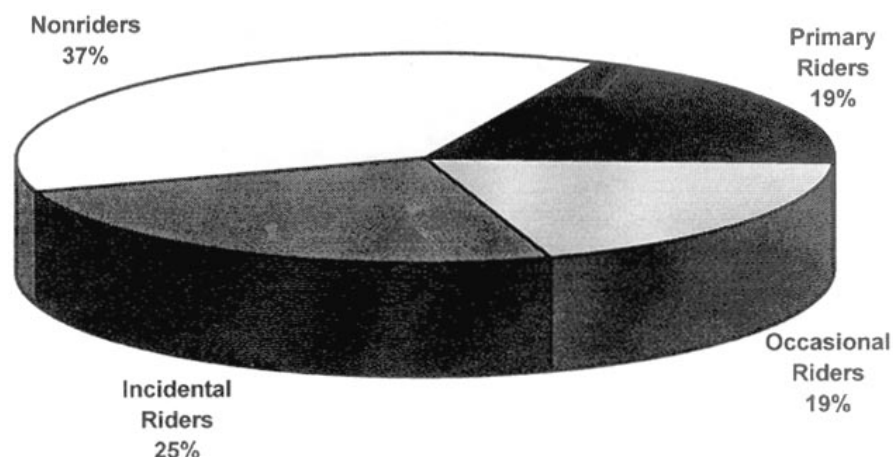
Current riders were predefined as individuals, aged sixteen or older, who have ridden CTA, Metra, and/or Pace within the past year. Among current riders, three rider segments were identified based on frequency of riding.

- **Primary Riders** – individuals who had ridden any system five or more times monthly. Note: Due to the complexity of the RTA's transportation system, Primary Riders could have ridden more than one system frequently – that is, five or more times monthly. Moreover, they could have been Occasional or Incidental Riders of another system. Finally, they could have been Nonriders of one or more systems.
- **Occasional Riders** – individuals who had ridden at least one transit system one to four times monthly. Occasional Riders could have been Occasional Riders or Nonriders of other systems. They were not Primary Riders of any system.
- **Incidental Riders** – individuals who had not ridden any of the systems within the past month. However, they had used transit at least once in the past year. They were not Occasional Riders of any system.

Nonriders were predefined as individuals, sixteen or older, who have not ridden public transit within the past year. Nonriders were segmented into two groups based on past behavior:

- **Former Riders** – individuals who had not ridden any system within the past year but had ridden one system at some point in the past five years. Former Riders were further divided based on the frequency with which they had ridden in the past.
- **Always Nonriders** – individuals who had not ridden public transportation in the past five years or had never ridden public transportation.

The following figure illustrates the relative size of these segments.



Some key findings illustrate the usefulness of this segmentation schema for marketing and planning.

- Primary and Occasional Riders represent a significant proportion of the residents of RTA's service territory. More than one out of three (38%) residents in the zip codes included in the RTA's service territory had taken at least one one-way ride on the CTA, Metra, and/or Pace in the month before the survey. Moreover, there was an equal number of Primary Riders – those riding at least five times in the past month – and Occasional Riders – those riding between one and four times in the past month.

This would suggest two important strategies for RTA and its Service Boards: 1) to retain Current Riders, and 2) to increase frequency of riding, notably among Occasional Riders. Achievement of these strategies is likely to have a significant impact on ridership in the region as a whole.

- One out of four (25%) area residents is an Incidental Rider. That is, they had ridden public transportation at least once in the past year, but they had not ridden in the past month.
 - This represents an important segment for ridership growth. This segment is more familiar with and has more positive views toward public transportation than do those that have not ridden. Efforts should be made to increase frequency of riding within this segment. Even small, incremental gains can have a significant impact on overall ridership.
- More than one out of three (36%) respondents are Nonriders; that is, they had not used public transportation at all in the past year. Of these, nearly half (47%) had ridden in the past one to five years and were thus considered Former Riders. Only one out of five (20%) area residents had never ridden public transportation or had not ridden in the past five years. That is, they are Always Nonriders.
 - Former Riders are an important group as they represent people who have had some experience riding public transportation in the region and may have some level of comfort with riding. If past experience has been positive, it should be easier to regain ridership among this segment rather than attracting those who have never ridden.
 - Always Nonriders are likely to be the most difficult market to attract. Given the size of all other segments of riders and nonriders, targeting this market should be considered a lower priority.

Source: 1996 RTA Transit Rider / Nonrider Survey, Chicago, IL, December 1996.

There are other ways to segment the market based on product usage. Patterns in the use of a product or service can also provide interesting insights into customer behavior and, therefore, can be used as post hoc basis variables. For example, segments could be identified based on the purposes – both primary and secondary – of their transit trips. Or they can be segmented based on mode of travel. Usage pattern segments of this kind not only show where and how to target promotion efforts, they also help dispel management's myth that riders ride primarily for one purpose.



Seattle has a long history of using market segmentation techniques to guide service planning and marketing programs. In a major segmentation of King County riders and nonriders completed in 1986, residents were classified as commuters and noncommuters, and then further divided according to their typical mode choice. Commuters were defined as people who work outside the home or attend school three days or more per week. Three modes were defined: single occupancy vehicle (SOV), carpool or vanpool (two persons or more), or bus. Commuters were classified according to their typical mode for work trips. Noncommuters were classified by how they traveled for non-food shopping and personal errands. Commuters using four modes were investigated in more detail: SOV, carpool / vanpool, bus, and a combination modes.

- **Single-Occupancy Vehicle Commuters (53%).** About two-thirds of SOV commuters were in the 25 to 44 age range, with an average age of 37. Just under half were married (45%) and had only one household member employed outside the home (44%). About 72 percent of surveyed households had more than one vehicle available and 33 percent had three or more. Half of SOV commuters had college degrees and half reported household incomes above \$35,000 per year.
- **Carpool / Vanpool Commuters (16%).** Carpool or vanpool commuters were more likely than SOV commuters to come from households with two or more persons (90% versus 74%) and to have more than one member employed outside the household (67% versus 54%). Most carpool / vanpool commuters knew each other outside their shared mode. More than half (52%) commuted with members of the same household and 44 percent traveled with coworkers. In fact, many of those commuters who traveled with members of their family did not consider themselves to be carpooling.
- **Bus Commuters (20%).** Most bus commuters traveled on a local bus (74%), with 37 percent using an express bus, and 4 percent on a subscription bus. About 25 percent of bus commuters did not have a valid driver's license, 19 percent did not have a car available to their household, and 39 percent had only one car. One-third of bus commuters had household incomes over \$35,000 per year and 40 percent attended college.
- **Multiple Modes (3%).** Among commuters who typically used more than one mode, half used SOVs, half used carpools, and 71 percent rode the bus. These commuters might drive to a park-and-ride lot before boarding a bus or drop off a family member at work or school before driving to work. Multiple mode commuters were more likely than SOV or bus-only commuters to have a spouse employed outside the home (85%) and their rates of auto ownership were between those reported by SOV and bus users.

Source: 1986 – 1989 *Transportation Market Segmentation Study. King County Summary. Telephone Surveys and Data Summaries.* Prepared for Metro, January 1990.

Advantages of Product Usage Segmentation

Segmenting markets based on product usage provides five major benefits:

- Like demographic segmentation, this is a relatively simple methodology to use. Risks and costs can be relatively low.
- It is a useful dimension for understanding transit markets based on past ridership behavior.
- It can be used to identify strategies to retain frequent riders who are generally transit-dependent and often stop riding when other modes become available.
- It can be used to identify strategies to increase consumption among light and medium users in highly competitive markets.
- By providing additional benefits or focusing on neglected market segments, it is possible to convert nonriders to riders.
- Unlike psychographic and benefit segmentation, segmenting based on product usage is generally easy to implement and requires less complex analysis. It is also less expensive depending on the incidence of riders in the general population.

Limitations of Product Usage Segmentation

There are, however, some shortcomings associated with product usage segmentation that the marketer and planner should be aware of.

- **Product usage segments are often difficult to explain through traditional demographics only.** In many markets, additional bases may need to be employed. Therefore, it is frequently used in conjunction with psychographic or benefit segmentation.
- **There are inherent problems associated with targeting the heavy user – or frequent rider – segment.** These include the fact that all frequent riders are not riders for the same reasons. Since these riders may have different needs, further segmentation within the frequent rider category is usually advisable. Moreover, frequent riders are not necessarily loyal riders. They often have little allegiance to transit and will switch as soon as alternative modes become available or if service is changed.
- **There are some definitional problems in product usage analysis.** For instance, how do you distinguish a frequent, infrequent, and very infrequent rider? These and other questions must be answered by the marketing analyst. As noted earlier, all too often these definitions are determined on an *a priori* basis. Care must be taken to insure that preconceived notions or inherent organizational biases do not lead one into conducting research that provides little, if any, new information. A more effective strategy for product usage research is to use a *post hoc* approach. That is, research is conducted and product usage segments are then defined on the basis of the data gathered. This, however, frequently requires additional data as noted above.

Product-Related Attitudes

Definition

Customers and noncustomers' attitudes toward a specific product or service category is another frequently used type of basis variable. This is especially useful for developing advertising and promotion programs, because it enables advertising agencies to understand what people think and feel about their needs in a specific product or service category. A great many attitude segmentation studies have been conducted over recent years by consumer products and services companies and advertising agencies. Transit agencies have also sought to segment the market based on riders' and nonriders' attitudes toward using public transportation.

Segmentation on product-related attitudes must always be done on a post hoc basis. The first step in the process is to identify the attitude dimensions or factors that should be included in the analysis. These attitudes must then be reduced to specific statements that respondents can rate on a suitable scale. Several questions often arise during this process.

- **Where do the attitude statements come from?** As a general rule, it is always best to review previous research and/or conduct additional research to develop a complete list of statements. Focus groups or individual depth interviews with qualified respondents who are users and/or nonusers of the product or service category are frequently the methodology of choice. Ideas and observations from these groups can provide a rich source of insights from which specific attitude statements can be developed. They also reveal the language and semantics people tend to use when talking about the product or service category.
- In practice, however, it is often the case that an agency may have conducted focus groups in the past for a variety of purposes and based on these unrelated studies they already have a good understanding of people's feelings. In such cases, attitude statements are simply "assembled" into a list. This list is then distributed to interested parties to add to or subtract from at will. Results might not be quite as good as those resulting from a careful review of focus group transcripts, but many companies do not believe that the additional time and expense is worthwhile.
- **How many attitude statements are necessary?** A major problem is that one really does not know how many. In practice, the number usually will range from 20 to 100. The problem is that without previous research, it is impossible to know if the full and relevant range of attitudes has been identified for inclusion.
- **What type of scale should be used?** There are many different types of scales. Some researchers prefer 7-point verbal scales while others prefer 10- or 11-point numerical scales (1 equals strongly disagree, 10 equals strongly agree). A Likert-type verbal scale is frequently the scale of choice. This decision is probably less critical than others that must be faced. Care should be taken to insure that the length of the scale is adequate to capture the full range of the variance in the responses from the study participants. Also, testing should be done to insure that the anchor points in the scale as well as instructions to the respondents are clear and understandable. Finally, it is important to use a scale that fits the characteristics of an interval scale. This enables the use of the more powerful and widely available "parametric" statistical techniques for analysis.

Once the attitude segments have been developed, it is important to conduct a thorough pretest. In many cases, these pretests can be extensive. An adequate number of pretest interviews should be completed so that analysis can be conducted to determine the reliability of the individual attitude statements in measuring the overall dimensions or factors they are emulating.

An Application of Product-Related Attitude Segmentation



In addition to segmenting on product usage as described in the previous section, King County Metro defined six groups based on cluster analysis of attitude and benefit statements about using public transportation. While group classifications were based on attitudes, there were strong correlations within groups on demographic and behavioral characteristics. Three groups had attitudes similar to existing bus riders; the nonriders in these groups were considered potential Metro customers.

Respondents were read 18 statements about transportation. They were asked whether they agreed (strongly or somewhat), disagreed (strongly or somewhat), or were neutral about each. Statements included the following:

- *Offered a choice between convenient transportation and taking a car, I would always drive a car even in rush hour traffic.*
- *Commuting gives me some time to myself.*
- *I'm not very comfortable being around people I don't know.*
- *I don't mind carrying packages on the bus after shopping.*
- *I don't like feeling inexperienced when learning something new.*
- *I need quick reliable service after 6:00 p.m.*
- *The best thing about taking the bus downtown is not looking for a parking space.*
- *I often need to make several stops such as shopping and errands while on the way to or from work or school.*

Based on their answers to these and similar questions, respondents were classified into six segments.

- **Group 1 (27%).** Members of this group had moderately favorable attitudes toward HOV use. They tended to be upscale, well-educated, and worked in middle- or upper-management positions. About half of the households had two wage earners. Commuters had a 63 percent SOV share.
- **Group 2 (14%).** This group supported transit, but 71 percent of the commuters drove alone. Individuals tended to be lower level white collar and skilled blue-collar workers and 41 percent lived in two income households.
- **Group 3 (10%).** Metro considered this group to be representative of "average" Seattle residents. Group members preferred to commute by car, but they are willing to use HOV modes if convenient. They expressed some concern about other bus passengers, did not like to carry packages on the bus, and did not want to transfer. About 39 percent had a college degree.

- **Group 4 (15%).** Group 4 was a well-educated, middle-class group with the highest level of bus ridership in the city. The enjoyed reading on the bus and did not want to worry about parking.
- **Group 5 (20%).** Members of this group tended to be blue-collar residents with modest household incomes who preferred the bus to driving. Many respondents were homemakers or retired.
- **Group 6 (13%).** This group comprises blue-collar households whose members preferred driving to transit. Individuals were uncomfortable with other bus passengers, but did not mind making transfers. Their mode choice depended in part on the price of gasoline.

Three of the groups were considered receptive to HOV services. Groups 1, 4, and 5 had high proportions of bus riders or people with attitudes similar to those held by bus riders. Specifically, the respondents in Groups 4 and 5 – both riders and nonriders – were very supportive of bus ridership and enthusiastic about new services. Group 4 had the highest level of bus ridership in King County; more than half rode the bus five times or more in the month before the survey. Group 5 also had high transit ridership. About 47 percent used HOV services in the month before the survey. While Group 1 was generally supportive of public transportation, many considered it inconvenient to use themselves. About 80 percent of commuters in this group used private vehicles and 63 percent drove alone. Based on these attitudes and behavior, Metro determined that the following groups had the greatest market potential.

- Group 1 – Current riders only.
- Group 4 – Riders and nonriders.
- Group 5 – Riders and nonriders.

Survey respondents also were asked to rate their interest in new services. When asked to select a single option, respondents in all groups most often requested a new bus route. Bus riders in Groups 4 and 5 were more likely than their Group 1 counterparts to be satisfied with the status quo. Only 28 percent of riders in Group 1 did not want any changes, compared with 36 percent in Group 4 and 40 percent in Group 5.

The use of market segmentation data has helped Metro focus on tailoring services to target areas.

Source: 1986 – 1989 *Transportation Market Segmentation Study. King County Summary. Telephone Surveys and Data Summaries.* Prepared for Metro, January 1990.

Advantages of Product-Related Attitude Segmentation

Segmenting markets based on product usage provides two major benefits:

- It provides insights and understanding into how people think about feel about a specific product.
- It is useful for the development of advertising or promotional programs.

Limitations of Product-Related Attitude Segmentation

There are, however, some shortcomings associated with product usage segmentation the marketer and planner should be aware of.

- **Attitude segments are often difficult to explain through traditional demographics only.** In many markets, additional bases may need to be employed. Therefore, it is frequently used in conjunction with psychographic or benefit segmentation.
- **The development of attitude statements on which to base the segmentation can be time-consuming and costly.** Unless previous attitude research – often done as focus groups – has been conducted by the agency, its researchers simply do not know the basic attitude dimensions or factors underlying the category or the relative importance of each. Even if prior research has been done, there is no assurance that all relevant attitudes were included.
- **There is often no clear relationship between attitude segments and behavior.** That is, many attitude segmentation studies result in the development of groups of riders or nonriders who have a similar set of attitudes. However, they do not differ in terms of behavior or likely behavior. Nor do they respond differently to changes in the marketing mix. As such, while the attitude "segments" sound good and look interesting, they have little value for decision-making. Most attitude segmentation research has been highly empirical and is likely to remain so.

Psychographics

Definition

One of the more powerful segmentation approaches – psychographics – has come a long way since Emanuel Demby, a marketing research practitioner, first coined the term nearly twenty years ago. There is some confusion about the origin and true meaning of the term "psychographics." Originally, the word was intended as an umbrella to cover all measures of the mind, as distinguished from behavioral and demographic measures. Consequently, it includes such universes of content as lifestyles, personality measures, beliefs, and perceptions. The following three-level definition of psychographics was originally developed by Demby and clearly illustrates the linkage between these many variables.

- Generally, psychographics may be viewed as the practical application of behavioral and social sciences to marketing research.
- More specifically, psychographics is a quantitative research procedure that is indicated when demographic, socioeconomic, and user / nonuser analyses are not sufficient to explain and predict consumer behavior.
- Most specifically, psychographics seeks to describe human characteristics of consumers that may have bearing on their response to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes.⁹

Demby further identifies three classes of psychographic variables:

- **Product attributes** – as proposed by the marketer and/or as perceived by the consumer.
- **Lifestyle** – evidenced by behavioral variables illustrating the use of time, services, and products by the consumer.
- **Psychological** – often expressed as self-concept, but also involving interests and opinions.

Even today, there is great controversy among marketing practitioners and academics as to what constitutes "psychographics" – and whether or not it is synonymous with the better-known "lifestyle" research. The consensus appears to be that there is a distinction between the two concepts. Looking carefully at the definition of each concept provides further insight into this distinction.

Essentially, **lifestyle research** is a sociological concept that deals with the way in which an individual allocates time, energy, and money to one activity over another.

Lifestyle is a social science concept connoting the totality of behaviors that comprise the characteristic approach to life of a particular individual or group. . . Lifestyle, in one important sense, can be looked upon as an allocation problem: given fixed resources of time, how do different groups apportion available time across various activities. . . Such analysis, in turn, can provide useful bases for predictions of future uses of time, and by inference, future consumption patterns.¹⁰

⁹ Demby, Emanuel. "Psychographics and From When it Came," in *Lifestyle and Psychographics*, William D. Wells (ed.). Chicago: American Marketing Association 1975.

¹⁰ Andreasen, Alan R. "Leisure, Mobility, and Lifestyle Patterns," (Chicago: *American Marketing Association Conference Proceedings*, Winter 1967), pp. 55-62.

Since, as this definition implies, lifestyle reflects behavior, it has proven to be an extremely reliable source of information. Lifestyle analysis has proven useful in segmenting and targeting consumers for new and existing products. Lifestyle variables can be divided into three classifications of activities, interests, and opinions. Activities include work, hobbies, social events, entertainment, shopping, and sports. Interests include family, home, fashion, food, media, and achievements. Opinions run the gamut from social issues, politics, and business, to products, the future, and culture. Lifestyle variables permit consumers to be analyzed in terms of how they spend their time, what areas of interest they envision as most important, and their opinions of themselves and their environment. These variables are correlated with such basic demographics as income, social class, and education.

Psychological variables play an important role in profiling the individual consumer, as they tend to "humanize" the data. Psychological variables – essentially what kind of an individual a person is or sees himself / herself to be – are the other side of the psychographic coin. Together, these two classes of variables are useful in defining the current marketplace and forecasting the future marketplace. Lifestyle variables describe how people go about their daily routines; psychological variables attempt to explain why they do so. For the marketer or planner, such segmentation data can answer a number of key questions, such as:

- **To whom should a product or service be targeted?** (e.g., Should a proposed new express transit service be positioned toward the "working mother with two children in preschool who believes that 'time is money,' and that 'a penny saved is a penny earned'" or toward the "male professional who has arrived at the pinnacle of his career and who values the time spent in his luxury automobile and believes that 'concerns about the environment are generally overrated'," or toward the "upwardly mobile male professional who strongly supports environmental causes and believes that everyone must make sacrifices for the environment"?)
- **How should the product or service be positioned?** (e.g., Should the focus be on product-specific attributes such as "speed of travel" or should self-concept needs be the focus with a message such as "you are doing your part for the environment"?)
- **How should the target market be characterized in promotional materials?** (e.g., As a "45 to 54 year old male wearing a suit and carrying a briefcase" or as a "25 to 34 year old male wearing khakis and a tie"?)

It is clear that there is a close link between lifestyle and psychological variables. One amplifies the other; one gives texture to the other. Although some researchers and marketers seem to stress one over the other, good counsel would recommend that psychographics requires both. The purpose of psychographic research is to develop the relationship between the three classes of variables so that one can say,

"Consumers in Segment A have the highest propensity to use a product or service because its attributes 'fit' the lifestyle that results from self-concept, interests, and opinions."

Or . . .

"Consumers in Segment B might have a higher propensity to use a product or service if certain attributes could be modified so that they are more relevant to lifestyle and psychological attitudes."

Or . . .

"Consumers in Segment C have a low propensity to use a product or service because its attributes do not relate either to lifestyle or self-concept."

Conducting Psychographic Research

There is no one best practice or approach in conducting a psychographic segmentation study. There are, however, some guidelines to follow.

- **Seek detail.** Psychographics are complex. The more relevant the data collected, the better the resulting information will be. A review of existing literature – notably academic publications in the fields of marketing, consumer behavior, and psychology – can suggest possible psychographic dimensions and tested scales to measure these dimensions. Focus groups or other exploratory research can be an effective means of identifying possible psychographic dimensions or variables to include and to pretest the psychographic survey instrument.
- **Personal or telephone interviews are the generally preferred methods for data collection.** Because of the amount of data that needs to be collected, mail questionnaires are generally inappropriate. This approach results in a low return rate, with many unusable or incomplete questionnaires. Moreover, there is limited ability to use different versions of the questionnaire, increasing the amount of response order bias in the survey instrument. The choice between personal or telephone interviews depends largely on the sampling design selected.
- **The heart of the survey instrument are the scales.** To develop viable individual and segment profiles based on lifestyles, a large number – anywhere from two dozen to several hundred – scales measuring an individual's activities, interests, and opinions must be developed. Again, a review of existing literature provides a great source of already tested scales. Two books – Bruno and Hensel's Market Scales Handbook and Bearden's The Handbook of Marketing Scales – are excellent reference tools. In addition to developing the attitude statements, consideration must be given to the scale used. Many psychographic studies use a Likert five-point agree / disagree scale to determine the extent to which respondents agree or disagree with each statement. The magnitude of the response is a critical measure of personality traits and lifestyles. Some researchers argue for longer scales. The length of the scale should be as long as is required to capture the variance in the data. Careful pretesting is required to make this decision.
- **Factor analysis should be considered as part of the analysis plan.** Given the sizable number of statements that are typically used, factor analysis is frequently the tool used to reduce the lifestyle and psychological variables down to a more manageable number for further analysis. As part of the process of creating an overall dimension, factor analysis also has the effect of reducing the variance in the data compared with that of using a single measure. The resulting factors or dimensions are the critical factors used for defining and describing market segments.
- **Consider alternative analytical approaches.** There are many potentially valuable techniques for developing market segments. These are described in more detail in Chapter 3. Do not become reliant on only one technique. Consider what is most appropriate to the situation at hand.
- **Avoid preconceived notions about the research findings.** In addition to establishing research objectives, developing research hypotheses before conducting the research is a valuable tool to insuring an open mind. These research hypotheses can be described in terms of a model.
- **Do not forget the value of secondary data.** While a psychographic study places heavy reliance on primary research, this does not mean that secondary data should be ignored. Secondary data from past research conducted by your agency, research from other agencies, and published or syndicated data can prove useful in both the design of the research and the interpretation of the results.

- **Add in other physical and behavioral dimensions to better define market segments.** Psychographic variables should not be the only measures on which segments are described. To maximize the validity of segment profiles, additional bases should be used. Demographics and product usage – ridership – are two useful bases to include. Other bases might be indicated depending on the objectives of the research.
- **Name the segments.** Once a reasonably accurate segment portrait has been established, you can develop tag descriptors for each designated segment. These descriptors should capture some key characteristics of the segments. The explosion in the field of graphics software also makes it possible to easily attach pictures or other devices that further exemplify the segments. This makes it easy to refer to the segments. Moreover, it is a useful tool to encourage excitement about and buy-in to the results. Note that some researchers do not name the segments, believing that the names are often overly simplistic, may not accurately portray the real richness of the segments, and may potentially mislead users who do not read the full segment descriptors.

If you are considering using psychographic research, ask yourself the following questions:

EXHIBIT 5 USING PSYCHOGRAPHIC AND/OR LIFESTYLE RESEARCH	
✓	Is custom or syndicated lifestyle / psychographic research required?
✓	Is there in-house capacity to assist in the project?
✓	What are your research objectives?
✓	Have you spoken with at least two research firms or consultants with expertise in psychographics?
✓	Do they have experience in your market or a closely related market?
✓	What are the professional and academic qualifications of the researcher(s)?
✓	Have they provided detailed proposals?
✓	From a methodological perspective, exactly what is entailed in your study?
✓	Will the research be used to identify new market segments, describe existing segments, or predict differences in customer behavior?
✓	Do you have other syndicated research service data or your own primary research data available to validate the psychographic research?
✓	What supporting dimensions – in addition to the psychographics – will be used in the study?
✓	Will this psychographic segmentation approach respond to changes in the marketplace?
✓	How closely will the researcher work with your company in project design, implementation, and strategy development?
✓	How will you use the data? Who in your organization will find the information valuable?
✓	How much does the study cost? Is the cost of the study commensurate with the value it will provide?

Applications of Psychographic Segmentation

Significant socioeconomic changes in the United States have had a profound impact on how marketers reach women – the fastest growing segment on the Internet. A psychographic and lifestyle segmentation study of the female online populations provides insight into how the Internet should fit into brand media plans when targeting women.



Women will comprise 48 percent of all online users by the year 2000 and 48 percent of the national workforce by 2005. Women now own one-third of American businesses. Nearly half of working wives now provide 50 percent or more of their family's income. Using a sophisticated factor analysis procedure, NetSmart, a research firm in New York that specializes in surveys that provide Web site strategies and tactics, discovered that there are no cohesive subgroups of women online. Instead, they found overlapping groups of women with overlapping, multi-faceted responsibilities and interests.

Ms. Biz. A career woman and investor, she goes online for convenience and success. Typically employed full-time, the Internet is a routine part of the way she works, plays, interacts and shops. Instead of the phone, Ms. Biz will log online with e-mail, her preferred means of communications.	Self Perceptions: Career is "extremely important" The majority juggle family and career Perceived Benefits of Internet: Internet saves them time Value the convenience Lets them bank and shop after hours Role of Internet as <i>Business Tool</i>: Use the Internet to: Send or respond to e-mail Do business research online Communicate with other employees Work from home
Dr. Mom. Over half of the women online are moms. Like all mothers they wear many hats. They are the self-appointed online censors.	Self Perceptions: Put children before everything else Family expects them to have all the answers Consider themselves to be Dr. Mom Perceived Benefits of Internet: Helps them help their children New recipes Makes them a smarter mom Helps with homework Role of Internet as <i>Health Tool</i>: Use packaged goods and pharmaceutical Web sites for: Nutritional and weight information Information on illnesses and injuries Dosages and side effects of drugs

<p>Midnight Shopper. Women no longer have time to shop during retail hours – they now shop online. Unlike stores and catalogs, the Internet allows them to place orders 24 hours a day. They go online to bargain hunt, shop, and browse for unique merchandise. They are opinion leaders who are eager to be the first to discover new products and immediately share these discoveries via the Internet grapevine.</p>	<p>Self-Perceptions / Perceived Benefits: More convenient Available 24 hours Entertaining and fun Allows them to be first to try new products. Role of Internet <i>Convenience and Fun</i>: Use the Internet as: Electronic Home Shopping Network</p>
<p>Household CEO. Typically single women and working mothers, these women are often the final decision-makers for major purchases, household finances, and vacations. Many pay all the monthly bills – they are prime prospects for the convenience of online banking.</p>	<p>Self Perceptions / Perceived Benefits: Do-it-yourself "Consumer Reports" Saves them time Makes them a smarter shopper More convenient than stores Can ask dumb questions without feeling stupid Makes technical information easy to understand Lets them handle business when banks and stores are closed. Role of Internet as <i>Household Tool</i>: Use the Internet for: After hours shopping, travel planning, etc. Ultimately may use for online investments and banking when security concerns are alleviated</p>
<p>Time Out for Me. Along with career and families, women have personal needs and interests, from finance to fitness to fashion. They go online to stay on top of current events, get stock tips, and find out the latest fashion trends.</p>	<p>Self-Perceptions: They love to cook and experiment Excitement and adventure are important to them They love to shop but don't have time. Perceived Benefits: Entertaining and fun Keeps them up to date with current events Lets them shop when stores are closed Makes them a smarter investor Role of Internet <i>Relaxation and Self-Gratification</i>: Use the Internet to: Engage in personal pursuits</p>

Successful Web sites will be the ones that recognize and develop content to satisfy the needs of women's multifaceted lives – from career woman to mother to self. The Internet offers a unique opportunity for advertisers to create ongoing, one-to-one relationships with women that generate long-term customer loyalty.

Source: Gina Garrubbo and Bernadette Tracy, "What Makes Women Click?," *Online Media Strategies, Supplement to Advertising Age*, Spring 1998, pp. 12a to 14a.

The State of California has been the leader in developing Transportation Demand Management programs. A comprehensive package of TDM activities currently encompassed in the Caltrans annual TDM work plan includes statewide and regional marketing activities, rideshare operations, Transportation Management Association (TMA) development and assistance, telecommunications demonstrations, advanced traveler information systems, child and family transportation issues, and other TDM research. The TDM program is closely linked to broader Caltrans transportation system management responsibilities, including both operations and planning functions over the short- and long-term.

In 1991, Caltrans developed a Strategic Statewide Marketing Plan. In the development of this final plan, extensive market research, including the use of psychographic segmentation methods, was conducted. This plan serves as the cornerstone to Caltrans' overall TDM activities and guides the Districts and their partners in their activities.



The California Department of Transportation (Caltrans) initiated its first transportation system management programs in the early 1970s. Significant expansion began in 1988, making the first step in a multi-year transition from a limited demand management effort, commonly known as "ridesharing," to becoming today's full-scale transportation demand management (TDM) effort. As part of this effort, Caltrans worked to develop a Strategic Statewide Marketing Plan. In the development of this final plan, extensive research was conducted. One phase of this research included a psychographic segmentation study. The objectives of this research were to:

- Develop a clear and valid understanding of the broad California marketplace.
- Profile distinct commuter audience segments.
- Identify "optimal" target audience segments that offer the greatest potential for TDM marketing.
- Provide input for the development of TDM marketing strategies and messages intended to reach the desired target segments.

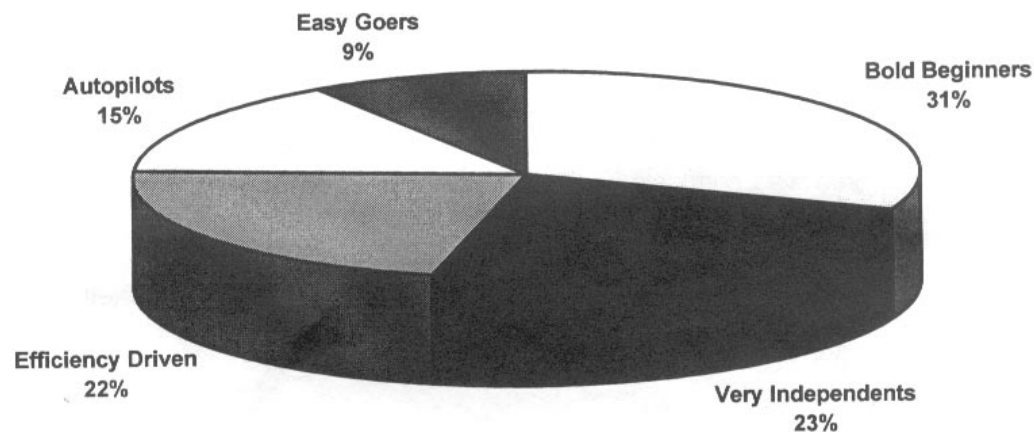
The methodology consisted of 2,100 telephone interviews among adult commuters. Four hundred interviews were conducted in each of five broad geographic areas: Los Angeles, San Diego, San Francisco, Sacramento, and 'other' California. Areas of inquiry included:

- Demographics.
- Commute characteristics / volume.
- General lifestyle attitudes and opinions.
- Mode attributes and desired benefits.

In defining the optimal target market, Caltrans identified five criteria. The optimal target market should:

- Account for a substantial amount of SOV behavior.
- Be potentially receptive to TDM marketing efforts and exhibit a willingness to try alternatives.
- Represent a substantial portion of the overall commuter population.
- Share common characteristics with each other.
- Be efficient to communicate with / reach.

Five commuter audience segments were identified:



These segments have the following characteristics:

EXHIBIT 6 SEGMENTS DEVELOPED FOR CALTRANS' TDM MARKETING PLAN	
The Bold Beginners	Very frustrated with commute. Would like to find an easier way to get to work / reduce stress. Willing to try something new. Would like someone else to take responsibility for commute. Most likely to have carpooled, taken the bus, or biked.
The Very Independents	Pragmatic and self-reliant. Set high personal standards. Need to maintain control and schedule flexibility. Do not want to rely upon others. Hate wasting time / want to get there quickly. Unlikely to use alternative modes / most likely to drive alone.

The Efficiency Driven	Want an orderly, structured, and predictable life. Looking for ways to reduce stress. Frustrated with the work commute. Most concerned about having control / not relying on others. Hate wasting time. Most open to information about alternative modes.
The Autopilots	Not frustrated with commute. It is part of their daily routine. "Get the job done" mentality. More Caucasians and older. Most likely to drive alone. Least likely to use alternative modes.
The Easy Goers	Passive personality / easy going. Less need to be in control. Not overly accomplishment-oriented. Not concerned with mode image. Find commute difficult, but manageable. Most likely to use alternative modes in future. Least likely to drive alone. Younger males, skilled labor and service workers.

Based on this research and the segmentation criteria defined above, the most promising target was identified as "The Bold Beginners." It was seen as the largest segment and the most open to using new modes. A secondary target, "The Easy Goers," was also identified. While small, this segment was determined to be reachable. They exhibit an inclination to alternative modes and it was believed they could be captured with a special effort. Finally, a tertiary segment, "The Efficiency Driven," was selected. Again, this is a large group and proves open to information.

Source: *Statewide Strategic Marketing Plan for Transportation Demand Management*, State of California Department of Transportation, Office of Traffic Improvement, January 1994.

Benefits

Psychographic research represents a major step forward in marketing research as it is oriented toward understanding the total human being as he / she goes through the purchase decision-making process, enabling the marketer or planner to develop meaningful strategies to solve marketing problems. Segmentation based on psychographics has proven to be most useful in:

- **Identifying target markets.** Although typically used more in advanced analyses than initial segmentation efforts, segmentation can be very useful in identifying and explaining markets. Consumer differences extend beyond demographic and psychographic research problems into an individual's state of mind, enabling the marketer or planner to piece together a total picture of the market.
- **Better explaining consumer behavior.** Markets are made up of a variety of people. By analyzing consumer behavior, the marketer or planner can better understand why the consumer acts as he or she does in the marketplace. Psychographic research can assist in meeting this objective. Buyer behavior – including such factors as mode choice, commitment to transit ridership, personal motivations, attitudes, perceptions, and preferences – can all be explored via this approach to segmentation. The value of this information cannot be underestimated.

- **Improving an agency's strategic marketing efforts.** The additional information available through psychographic analysis can be employed in planning successful marketing strategies for transit agencies. Psychographics is most useful in situations where use of the product or service is discretionary, as is the case of the "choice" rider. Strategic information gathered through a psychographic analysis can permeate all marketing areas of the company, including positioning new products / services or repositioning existing products / services, improving products or services to better meet segment needs, recognizing the importance of price factors in a given market, developing promotional strategies – notably selecting appropriate media vehicles, advertising messages, and sales appeals.
- **Minimizing the risks for new products / ventures.** The cost of introducing a new product or service can be substantial. Furthermore, the vast majority of such efforts fail – new product success rates are estimated at less than 10 percent. Often the key ingredient to a new product or service's success is locating the subtle product or concept variations that potential customers desire – their needs and wants. By incorporating psychographic research into your agency's product testing and development program, success rates can be increased.

Limitations

Although segmentation on values and lifestyles offers a richness and depth of information that is particularly useful for marketers, there are limitations that one must be aware of.

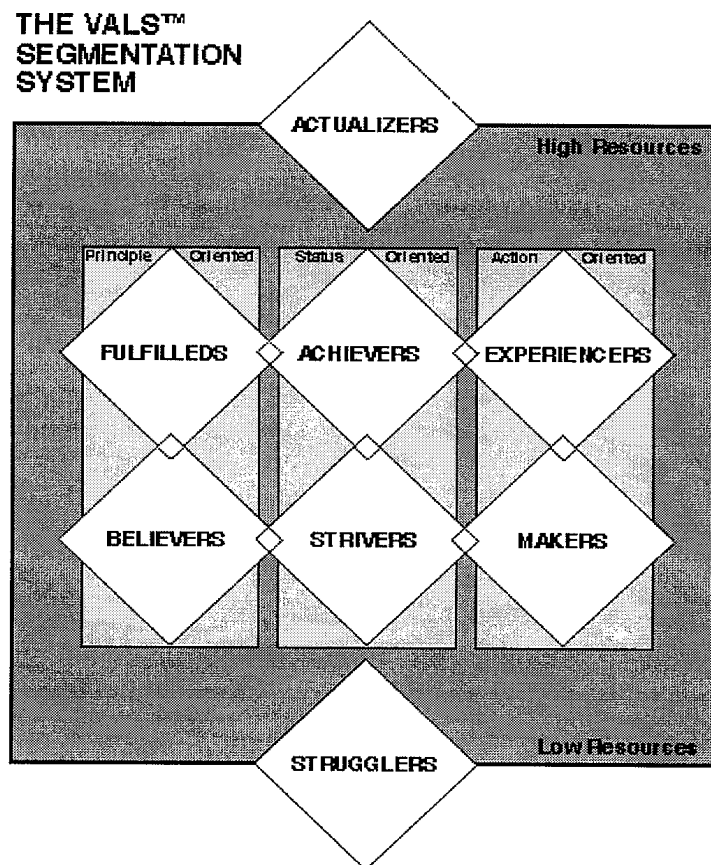
- **Problems in Data Collection and Analysis:** Psychographic research requires a much more complex approach to both data collection and analysis than does segmentation based on demographics or geodemographics. This is because psychographic segmentation mostly relies on primary market research findings. Moreover, this research is usually more complex than that required for standard market research studies in which a priori segments have been defined. Data collection is often a problem due to the large number of questions asked via a survey instrument. Interviews exceeding 30 to 40 minutes are not uncommon in these types of studies. Compounding this problem is the analysis of a voluminous amount of data, often requiring the use of more advanced multivariate statistical techniques in seeking important marketing relationships.
- **Cost:** A well-designed psychographic study is generally more expensive than other types of marketing research. Expect to invest a minimum of \$40,000 to \$50,000 for this type of research. Costs ranging near or above \$100,000 are not uncommon.
- **No Guarantees:** Finally, even with the best-designed research, carried out using the most stringent procedures, and expertly analyzed by experienced researchers there are no guarantees that a usable segmentation schema will result. Segments may result that are not meaningful, are not large enough, are not readily distinguishable from each other, or are not responsive to different strategies. The results of the research may prove inconclusive. That is, while segments are identified, they cannot be replicated in this or other studies. This raises concern regarding the reliability of the segmentation schema. While these are not typical situations, it is not unheard of and any agency undertaking a study of this type must be aware of these potential pitfalls.

Another Option: Syndicated Lifestyle Research

The marketer or transit planner in need of psychographic data does not have to opt for a custom segmentation study. Syndicated research services are available that may be incorporated into other research the agency is conducting. Probably the best-known provider of such a service is SRI Consulting (SRIC) with their Values and Lifestyles (VALS™) psychographic consumer segmentation system. VALS is designed for understanding and marketing to consumers. It is built on the concept of self-orientation, and a new definition of resources.

- **Self-Orientation:** Consumers pursue and acquire products, services, and experiences that provide satisfaction and give shape, substance, and character to their identities. They are motivated by one of three powerful self-orientations: principle, status, and action. Principle-oriented consumers are guided in their choices by abstract, idealized criteria rather than by feelings, events, or desire for approval and opinions of others. Status-oriented consumers look for products and services that demonstrate the consumers' success to their peers. Action-oriented consumers are guided by a desire for social or physical activity, variety, and risk-taking.
- **Resources** include the full range of psychological, physical, demographic and material means and capacities consumers have to draw upon. Resources include education, income, self-confidence, health, eagerness to buy, intelligence, and energy level. It is a continuum from minimal to abundant. Resources generally increase from adolescence through middle age but decrease with extreme age, depression, financial reverses, and physical or psychological impairment.

Using these two dimensions – self-orientation and resources – VALS defines eight segments of adult consumers who have different attitudes and exhibit distinctive behavior and decision-making patterns. The segments are balanced in size so that each truly represents a viable marketing target. Neighboring types have similar characteristics and can be combined in varying ways to suit particular marketing purposes.



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Following are descriptions of the eight VALS segments.

EXHIBIT 7 VALS SEGMENTS
Actualizers exhibit self-confidence and optimism. They share wide intellectual interests, engage in varied leisure activities, are well-informed, and lead active social lives. They are change leaders and are highly receptive to new products and technologies.
Fulfilleds are usually mature and reflective. Their leisure and consumption activities center on the home. They gravitate strongly toward education and information, often reading widely and watching educational programming.
Believers are strongly traditional and respect rules and authority. They prefer a settled, predictable lifestyle, socializing within the family and established groups. Fundamentally conservative, they are slow to change and technology averse.
Achievers opt for a moderate, goal-oriented lifestyle. They center their lives on career and family. They prefer premium products. They avoid situations that introduce a high degree of change and stimulation.
Strivers are often dissatisfied and unsure in their day-to-day lives. They have little discretionary income and tend toward narrow interests and social isolation. However, they are image conscious within their immediate peer group.
Experiencers appreciate the unconventional. They are active and extroverted, and they like stimulation by the new, offbeat, and risky. Their lifestyle focuses on fashion, exercise, socializing, and sports.
Makers value practicality and self-sufficiency. They prefer hands-on, constructive activities and spend leisure time with family and close friends, rarely joining organizations. Preferring value to luxuries, they buy basic products.
Strugglers' lives are narrowly focused by their lack of educational and financial resources. Strugglers feel powerless and are risk averse. Conservative and traditional, they are concerned about their security. Brand loyal, they use coupons and watch for sales.
Source: SRI International http://future.sri.com:80/vals/diamonds.html

SRIC's national database provides information about the products, services, and media preferences of each VALS type. The VALS questionnaire can also be used to identify the VALS type of particular groups of people.

SRIC also offers GeoVALS™. GeoVALS is a geographical overlay for the VALS system. It provides individual segmentations for each of the 35,000 5-digit zip codes in the United States. Such an arrangement is a useful alternative to traditional geodemographic techniques, which assume that all people in a neighborhood think and behave alike.

The exhibit below shows the distribution of VALS types in a notable zip code versus that of the national average:

EXHIBIT 8 GEOVALS™ – BEVERLY HILLS, CA 90210		
Type	Locality Density	National Average
Actualizers	36.5%	9.8%
Fulfilleds	21.9%	11.0%
Believers	5.5%	16.5%
Achievers	21.5%	15.6%
Strivers	2.4%	13.8%
Experiencers	7.3%	11.8%
Makers	2.8%	10.8%
Strugglers	2.1%	10.7%
Source: GeoVALS/Market Statistics		

SRI maintains proprietary and nonproprietary databases on consumer demographics, psychographics, and spending patterns that can help identify key target markets, design products that appeal to target markets, develop effective marketing strategies, and account for the effects of future uncertainties. An option is available to use the VALS typology as part of another research effort your agency is conducting. SRI provides you with a battery of 35 questions as well as six demographic questions that you include in your questionnaire. The data collected from this battery of questions is sent back to SRI International who analyzes it and returns the segmentation data to the agency. You can then examine the differences, if any, in responses to other questions on the survey across these segments. Consumer products and service companies throughout the United States have successfully applied VALS to improve product development, product positioning, advertising effectiveness, and corporate image.

VALS has been widely used for a variety of private sector products and services. For example, a telecommunications company used VALS to estimate the future demand for new products and services, a home builder used VALS to identify the values and preferences of potential home buyers and to test responses to prototype houses, and an automobile manufacturer used VALS to redesign its sport utility vehicle to meet the preferences of most likely buyers. However, VALS has not been widely used in the public sector. Its applicability to services and notably to public transportation is unknown. No transit system is known to have used VALS.

There are also other syndicated services available. These include:

- The *Yankelovich Monitor* is an annual survey of more than 50 social trends relevant to consumer marketing. The recognition of the impact of key trends in a given market can provide valuable information for an agency's strategic planning. Examples of some recent Monitor trends include personalization, physical self-enhancement, health orientation, meaningful work, new romanticism, return to nature, anti-bigness, concern about environment, responsiveness to fantasy, and emphasis on winning.¹¹ Yankelovich's generalized typology is more useful in understanding value systems operating in the country as a whole than specific markets. However, its usefulness cannot be underestimated. Watch for published articles discussing the results of the *Yankelovich Monitor*.
- The *List of Values* (LOV) developed at the University of Michigan is an alternative to VALS that is gaining favor. Advantages of LOV are that it is in the public domain and has been shown to relate closely to consumer behavior and predict trends.¹² Values measured include self-respect, security, warm relationships, sense of accomplishment, self-fulfillment, being well respected, sense of belonging, and fun / enjoyment / excitement.

Other syndicated lifestyle services include DYG's Environmental Scanning Program and leading advertising agency services such as DDB Needham's Life Style Study, Ogilvy and Mather's New Wave, and Backer Spielvogel Bates Worldwide's Global Scan.¹³

Some of these syndicated studies are conducted at local levels. For example, the Consumer Market Profile™ (CMP) produces detailed information on consumer purchasing patterns for a wide array of local products and services. Additionally, the CMP provides greatly expanded demographics and a complete segmentation of the market by its unique, local psychographic groups. Lastly, the CMP encompasses a detailed profile of the market's media habits, including television viewership by program radio listenership and readership of newspapers, direct mail, and advertising inserts.

A local television station typically sponsors the CMP. The markets served range considerably in terms of market size and geographic location. Representative markets currently being served include Albuquerque, Atlanta, Charlotte, Chicago, Colorado Springs, Houston, Jacksonville, Las Vegas, Louisville, Minneapolis-St. Paul, New York, Oklahoma City, Providence, Reno, Sacramento, Salt Lake City, San Diego, Seattle, and Washington, D.C. The results of the research are available to advertisers on the station. For little or no cost, advertisers on the sponsoring station can include specific questions of interest on the survey instrument. Currently, transit agencies have made little or no use of this information in any of the markets in which it is available.

¹¹ *Yankelovich Monitor: Technical Description Reference Book* (Westport, Conn: Yankelovich, Clancy, Shulman, 1985), and other company marketing materials.

¹² Lynn R. Kahle, Basil Poulas, and Ajay Sukhdial, "Changes in Social Values in the United States During the Past Decade," *Journal of Advertising Research*, February – March, 1988, pp. 35-41.

¹³ Rebecca Piirto, "Measuring Minds in the 1990s," *American Demographics*, December 1990, pp. 30 – 35.



The Chicago Chamber of Commerce in conjunction with WBBM TV (Chicago) has followed changes in the psychographic profile of the Chicago market for 10 years, beginning in 1987. Based on a random sample of 2,000 Chicago area residents, the market has been divided into seven psychographic groups, each with its own set of values, attitudes, and self-concepts that make it unique.

GROUP I <i>18% of adult population</i> <i>Average age: 43</i> <i>Average income: \$85,700</i> <i>44% male; 56% female</i>	<ul style="list-style-type: none"> ▪ Affluent and successful ▪ Happy and in control of their lives ▪ Busy, outgoing, and confident ▪ Among the most liberal in the market ▪ Risk takers and adventurous ▪ Will spend more to get high quality or to save time
GROUP II <i>18% of adult population</i> <i>Average age: 41</i> <i>Average income: \$83,100</i> <i>59% male; 41% female</i>	<ul style="list-style-type: none"> ▪ High achievers; very career oriented ▪ Support traditional view of family ▪ Very conservative, but not active politically ▪ Socially active ▪ Enjoy possessing status symbols ▪ Want high quality and are willing to pay for it
GROUP III <i>15% of adult population</i> <i>Average age: 40</i> <i>Average income: \$51,600</i> <i>46% male; 54% female</i>	<ul style="list-style-type: none"> ▪ Average Americans, but life falls short of expectations ▪ Income does not satisfy families' basic needs ▪ Home and family are important ▪ Put great stock in the motherhood role ▪ Look for lowest prices and watch for sales
GROUP IV <i>11% of adult population</i> <i>Average age: 40</i> <i>Average income: \$54,600</i> <i>49% male; 51% female</i>	<ul style="list-style-type: none"> ▪ Young, optimistic and on their way up ▪ Risk takers; change is no problem ▪ Very social ▪ Tend to be liberal minded ▪ Women's rights are an important issue ▪ Will buy quality merchandise that has lasting value; low price is not as important as the right item

GROUP V 10% of adult population Average age: 47 Average income: \$56,200 55% male; 45% female	<ul style="list-style-type: none"> ▪ Very traditional values ▪ Proud of their jobs and families ▪ Very conservative approach to family, religion, and politics ▪ Very patriotic ▪ They like the basics, no gourmet items or trendy styles ▪ Tend to be very loyal to stores and brands they trust; look for merchandise that's sturdy, dependable, and functional
GROUP VI 12% of adult population Average age: 57 Average income: \$25,200 43% male; 57% female	<ul style="list-style-type: none"> ▪ Oldest group, very nostalgic and traditional ▪ Needs and wants are few ▪ Enjoy the predictable routine ▪ Deeply religious ▪ Want moderate quality at reasonable prices, will pay attention to sales
GROUP VII 16% of adult population Average age: 40 Average income: \$21,900 37% male; 63% female	<ul style="list-style-type: none"> ▪ Life is a constant struggle ▪ Generally unhappy and pessimistic about the future ▪ Social, but tend to socialize at home ▪ Many are female; support women's rights issues ▪ Not particularly religious ▪ Always looks for lowest prices when shopping

Some shifts in the psychographic profile of Chicago have been noted over the past ten years. There has been an increase in the incidence of Group I profiles and a decrease in the incidence of Group VI profiles.

In addition to the psychographic data, data on product purchases (e.g., automobile) as well as extensive demographic information is gathered.

Source: Materials provided by Chicago Chamber of Commerce and Leigh Stowell & Company marketing materials

Some industries have developed psychographic segmentation models that are unique to their industry. While the transit industry has not developed such a model, one has been developed for the electric and gas industry. It has proven useful help electric utilities better understand and serve current and future customers and markets..

Faced with many competitive pressures in the marketplace and recognizing that traditional segmentation of utility customers – residential, commercial, and industrial – is insufficient to optimize marketing resources, the electric utility industry began to seriously examine alternative ways to segment the market. The Electric Power Research Institute (EPRI) began a major marketing research project designed to produce a more insightful understanding of the "electric consumer" on a national basis. Out of EPRI's project – "Customer Preferences and Behavior" – emerged six attitudinal segments of the residential market. The attitudes, values, and desires held in common by the customers in each of these segments help shape their energy-use patterns and their opinions about energy policies. Using the EPRI program methodology, the management of Snohomish County Public Utility District (WA) developed a framework that allowed it to understand, examine, and communicate with the various segments in their market.



In May 1989, the Snohomish County PUD (WA) undertook a market segmentation study using in part the EPRI model. Based on a comprehensive telephone survey of 1,000 PUD residential customers, six separate energy needs-based segments of the Snohomish PUD market were calibrated as follows:

NAME	DESCRIPTION	% Snohomish County Pop.	% of U.S. Population
Appearance Conscious	Concerned about image, high consumers, conservers	6%	18%
Hassle Avoiders	Want minimal effort in product search, high consumers, low conservers	8%	13%
Lifestyle Simplifiers	Show least concern about convenience, technology, low consumers, high conservers	22%	17%
Pleasure Seekers	Open to a wide variety of energy appeals, average consumers, low conservers	19%	22%
Resource Conservers	Have concerns about cost and environment, average consumers, average conservers	21%	17%
Value Seekers	Show interest in conservation and best use of money	23%	13%

The Snohomish PUD has proportionately more Value Seekers and fewer Appearance Conscious customers than have been identified at the national level.

Conservation participation differed significantly by segment. Lifestyle Simplifiers have the highest conservation participation rate (49%) followed by the Appearance Conscious (46%) and Value Seekers (45%). On the other hand, the lowest conservation rates were noted among the Hassle Avoiders (31%), Pleasure Seekers (40%), and Resource Conservers (40%). On the surface it would appear that the Appearance Conscious segment would represent the greatest marketing opportunity. However, this energy needs segment is underrepresented in Snohomish County and represents the smallest segment in the population.

From a marketing standpoint, therefore, the top segments Snohomish PUD chose to focus new programs and messages on were the Value Seekers, the Resource Conservers, and the Pleasure Seekers. Specifically, Resource Conservers and Value Seekers are the primary targets for conventional conservation programs – many have electric heat and don't have gas availability. Pleasure Seekers and Resource Conservers are the primary targets for expanded, fuel-switching, conservation programs – many have electric heat but also have gas availability.

Source: Energy Market Segmentation Study, prepared for Snohomish County Public Utility District #1, Electric Power Research Institute, and Bonneville Power Administration, October 31, 1989.

Benefit or Needs-Based Segmentation

Definition

Some of the most common questions asked by management are. . .

What specific product / service benefits or features are most important to our customers and potential customers?

What are the hot buttons?

The answers are critical for decisions involving product or service design and positioning efforts. Benefit segmentation has become a useful tool in answering these questions.

Benefits are the sum of product advantages or satisfactions that meet an individual's needs or wants. In essence, benefit segmentation answers the question, "What is the product – in this case transit – going to do for me." Benefits extend beyond product features and serve to satisfy physical, emotional, or psychological needs. The belief underlying this segmentation strategy is that the benefits that people seek in consuming a given product are the basic reasons for the existence of true market segments.¹⁴ Benefit segmentation probes users' buying motives and is linked directly to the marketing discipline of consumer behavior. A compilation of key benefits is analyzed in determining pertinent market segments.

Benefits are closely allied with other bases for segmentation – product usage and psychographics. An individual's life style, values, and habits, including past purchase behavior, generally have a great impact on subsequent benefits sought by that person.

Conducting Benefit or Needs-Based Segmentation Research

The approach to benefit or needs-based segmentation is similar in scope to that used in psychographic segmentation and the same guidelines described earlier (pages 51 to 52) prove useful. A typical benefit segmentation study includes the following steps:

- 1) Prepare a set of stimuli (e.g., product benefits, features, flavors, problems to be solved, etc.) based on data obtained from focus groups, earlier surveys, or similar means.
- 2) Ask respondents to pick up to k of the n items that are most preferred. The value of k is usually set between one-third and one-half of n .
- 3) Three variations of this approach are also in use:
 - a) In telephone surveys, the reference set of n items is not stated in advance but is constructed (after the study) from the respondents' open-end responses.
 - b) Instead of picking up to k out of n most desirable benefits, ask the respondent to choose up to k_1 benefits that are critical to brand choice and then up to k_2 of the remaining benefits that are highly desirable.
 - c) Ask respondents to rate all benefits using some kind of scaled questionnaire (e.g., most important to least important).

¹⁴ Haley, R.I., "Benefit Segmentation: A Decision-Oriented Research Tool," *Marketing Management*, 4 (Summer 1995), pp. 59 – 62.

- 4) Obtain various background data (e.g., demographics, current product-use occasions, psychographics, etc.) to examine additional relationships among segments constructed from the benefit-preference data.¹⁵

While this seems like a relatively simple procedure, there are several problems with such an approach.

- 1) Respondents sometimes do not know the importance of some features in making their choices.
- 2) They may know the importance of such factors but be unwilling to admit this, even to themselves. This is particularly true in transit where few people wish to admit that they are not concerned with the environment or that they value the privacy that their private automobile offers.
- 3) They rate too many features or attributes very high in importance. In one study for a transit agency, respondents rated two-thirds of the attributes as a "5" or "extremely important." The lowest mean score for any attribute was 3.95 on a 5-point scale. Without some kind of standardization procedures, results of this kind provide little specific direction for planning efforts.
- 4) Some benefits or features are "important" to people but have little effect on the actual mode choice decisions. These are benefits or features that simply must be present – for example, personal safety while riding or waiting for the bus, on-time performance, etc. Transit agencies must offer these features because they are "important." However, they will get no credit for them when competing for share of mode. Therefore, they do not offer a competitive advantage.
- 5) They often overstate the importance of "sensible" benefits (e.g., price, safety, and convenience).

Conjoint analysis represents a methodology that can be used to overcome some of these inherent problems. Conjoint analysis determines the relative importance of product or service attributes. This technique is preferred by many because (1) it provides attribute importance measures that do not rely on direct ratings from respondents, (2) it forces trade-offs among very important attributes to determine which ones are the most important when it is not possible to provide both, and (3) it does this for each individual separately. The results of a conjoint analysis provide utilities for each level of each attribute as well as an overall attribute importance weight. These latter scores can be used for segmentation analysis using cluster analysis or other multivariate procedures designed for market segmentation.

Finally, another useful approach to conducting benefit or needs-based segmentation is to reverse the process and to focus on *unmet needs* or *attribute deficiencies*. These can be measured by including a "comparison standard" in a survey and asking respondents to rate a company or brand performance on each attribute in relation to the comparison standard. One approach here is to ask respondents to rate the importance of the product / service attributes. A follow-up question examines how well the product or service in question meets their requirements. For example:

Please tell me how important each of the following items are in deciding how you will travel to and from work or school. As I read each one, please tell me whether it is extremely important, very important, somewhat important, not very important, or not important at all.

I can count on it to get me to where I am going on time.

It offers me the flexibility I need for my schedule.

It gets me to and from work / school without feeling stressed.

It gives me an opportunity to be alone to think.

It is good for the environment.

¹⁵ Green, Paul E., Abba M. Krieger, and Catherine M. Schaffer, "Quick and Simple Benefit Segmentation," *Journal of Advertising Research* (June / July, 1995), pp. 9 – 15.

Now for the same items, I would like you to tell me how well public transit meets your needs for getting to and from work or school. As I read each one, please tell me whether it completely meets your requirements, meets your requirements most of the time, sometimes meets your requirements, rarely meets your requirements, or does not meet your requirements at all.

I can count on it to get me to where I am going on time.

It offers me the flexibility I need for my schedule.

It gets me to and from work / school without feeling stressed.

It gives me an opportunity to be alone to think.

It is good for the environment.

A deficiency score is computed by subtracting what is important to them from how well transit meets their requirements. When these two ratings are subtracted across all attributes, the result is a column of deficiency scores for each respondent. These scores are then used to identify groups of respondents having similar patterns of deficiencies. These represent market segments that have the same unmet needs. Segmentation of this kind offer considerable opportunity for product / service improvement efforts, extensions of existing products or services, or the development of new products. Deficiency segments can be among the most directly actionable by an organization, because they show customers' and noncustomers' needs that are currently not being met. Many transit agencies currently conduct customer satisfaction research in which they collect both importance ratings and service evaluations. This data can be used for market segmentation purposes.

Applications of Benefit or Needs-Based Segmentation

Despite the usefulness of benefit or needs-based segmentation, few uses of this approach were found in the transit industry. While many agencies – for example the RTA in Chicago – have collected data on the importance of attributes in the mode choice decision, they have not used this data for market segmentation purposes. However, it is used extensively in other industries, both public and private.



Caltrans and Amtrak West have conducted extensive research to aid in the development of marketing strategies for the three California corridors – the San Diegans, the San Joaquins, and the Capitols. Research has shown that the market for Favorable Nonusers – defined as individuals who travel in the California corridors, have not ridden Amtrak in the last year and have at least a somewhat favorable impression of traveling on Amtrak – is large – over 37 percent of the total nonuser market. Obviously, capturing even a small portion of this nonuser market would have significant impact on corridor ridership.

To better understand this market, Caltrans and Amtrak West conducted a Survey of Nonusers. A random sample of over 1,600 favorable nonusers was completed by telephone. This comprehensive survey of nonusers examined consumer awareness of, attitudes towards, and the potential use of the three Amtrak California corridors among nonusers. This study also provides a better understanding of the characteristics of nonusers, potential barriers to ridership, possible changes in service, and other product improvements that would convert nonusers to users.

A primary purpose of this research was to identify market segments that represent the greatest potential for ridership. While most aspects are relatively important, it is likely that different segments of the target population are seeking different benefits. Analysis was

completed to uncover the underlying benefit segments. Five benefit segments were identified – three of which represent the greatest opportunity for ridership growth.

- The largest segment (26% of the target population) is seeking a **hassle-free experience**. This segment is clearly differentiated from other nonusers by the importance they place on being able to get other things done and being able to meet interesting people. Other characteristics of travel that are important to this segment are not having to worry about driving and traffic, fun for children, fast way to travel, ability to move around, and having food and beverage service available. On the other hand, this segment is relatively unconcerned with safety, value, on-time arrival, being able to depart when they want to, and having a car available at their destination.

Those seeking a **hassle-free experience** are more likely to be male (53%) than female (47%), 41 years of age (however, an above-average number are between the ages of 18 and 24), less educated, predominantly Caucasian (however, an above-average number are Hispanic), and moderately affluent.

Those seeking a **hassle-free experience** represent the strongest potential ridership. They have the most favorable overall attitude toward riding Amtrak and are the most likely to say they would ride. Sixteen percent of this large segment is very likely to consider riding Amtrak for leisure travel. An additional 26 percent say they would be somewhat likely. This segment is the largest segment – 26 percent of favorable nonusers. Attracting this segment could have a significant impact on ridership.

Overall, those seeking a **hassle-free experience** have the most positive attitudes toward train travel. However, in most cases, the travel characteristics they are the most positive about are not those that are most important to this segment. On the other hand, those seeking a hassle-free experience do not see Amtrak differently from other respondents in terms of some characteristics that are important benefits sought by this segment – I can get other things done while traveling, I can move around while traveling, there is food and beverage service available, you don't have to worry about driving / traffic, train travel provides a unique experience, and train travel is fun for children. These represent potential copy points when targeting this market segment.

- A second segment which offers potential for ridership are those looking for **comfort** and an **enjoyable experience**. They represent 18 percent of all favorable nonusers. Characteristics of travel that are most important to this segment include plenty of leg room, an enjoyable experience, travels along scenic routes, offers a smooth comfortable ride, leaves and arrives on time, and is a relaxing way to travel. This segment is willing to pay for their comfort and enjoyment, saying that cost and value are relatively unimportant attributes.

Those seeking **comfort and enjoyment** are more likely to be female (61%) than male (39%), the oldest segment (average age is 48 years; 36 percent are 55 and older), retired, married with no children living at home, well-educated, predominantly Caucasian, and affluent.

This segment has somewhat less positive attitudes toward travel by Amtrak. However, three out of ten say they would be somewhat likely to ride; 7 percent say they would be very likely to ride Amtrak.

With the exception of being able to get up and move around while traveling, those seeking a trip that is comfortable and an enjoyable experience do not see Amtrak as being any more unique on these attributes than do other nonusers. It is important to work to position Amtrak positively on those attributes that are most important to this

segment. Again these characteristics include plenty of leg room, an enjoyable experience, travels along scenic routes, offers a smooth comfortable ride, leaves and arrives on time, is a relaxing way to travel, can get up and move around when traveling, and you arrive at your destination fresh.

- The third segment which offers potential for ridership are those looking for a **trip experience** that is a **good value**. They represent 19 percent of all favorable nonusers. Characteristics of travel that are most important to this segment include it is fun for children, it is an inexpensive way to travel, it is a good value, it is a good way to travel with friends / family, it is a safe way to travel, there are package deals available, and it is an enjoyable or unique experience. Characteristics of travel related to comfort, flexibility, and speed of travel are unimportant to this segment.

Those seeking a **trip experience with value** are more likely to be female (61%) than male (39%), 41 years of age (nearly three out of four are between the ages of 25 and 54), employed full-time (their spouse is also likely to be employed), married with children living at home, have at least some college education, predominantly Caucasian, and moderately affluent.

Like those seeking comfort and enjoyment, this segment has somewhat less positive attitudes toward travel by Amtrak than do those seeking a hassle-free experience. However, one out of three say they would be somewhat likely to ride; 9 percent say they would be very likely to ride Amtrak. This segment is the most likely segment to say they have considered riding Amtrak.

Those seeking a trip experience that is a good value have positive attitudes toward Amtrak on those attributes that are related to the trip experience that are important benefits for this segment, including train travel is a unique experience, it is a good way to travel with friends / family, it is fun for children, and it travels along scenic routes. However, they do not see Amtrak as clearly differentiated on other important characteristics, notably those related to value. Linking the uniqueness of the experience with a value proposition represents an opportunity to attract this segment.

This study was only recently completed by Caltrans and Amtrak West. Its full implications and the uses to which the data will be put are still being examined. However, all agree that the study has provided unique insight into a market that before was too large to be clearly understood and marketed to.

Source: *Survey of Nonusers, Caltrans / Amtrak West, September 1997.*

Long noted for its innovative approaches to marketing and marketing research, Tri-Met (Portland, OR) has used a variety of methods to segment its market. In 1993, they decided to try a new approach.



Before 1993, Tri-Met had always used demographic, geographic, and ridership behavior as ways to segment the market. In 1993, the agency started to look at the way they saw current and potential riders in a different way. To complement this traditional approach to market segmentation, Tri-Met decided to look at *attitudes* towards transit and how they might influence mode choices. Because attitude segmentation was new to Tri-Met, staff was unsure how it could be used by a public transit agency. "It took about 18 months to design

and develop a research product that adequately demonstrated the applicability of this private sector tool to mass transit marketing," said Yvonne Lyon, Marketing Analysis Manager.

This process ultimately resulted in a telephone survey of 1,156 riders and nonriders to understand what motivates them to use or not use transit, the benefits they expect from transit, and the barriers that prevent them from riding. Six groups segmented by their attitudes about transportation were identified. Four groups of people were likely to increase their transit ridership and two were neither potential riders nor were they supportive of transit. Important variables found to influence transit use were county of residence, the number of vehicles per adult in the household, home ownership and income. Downtown employment, age, sex and marital status also had influence.

The survey results confirmed that nonriders were more likely to live in the suburbs and have no nearby service. This was one factor leading to Tri-Met's *Transit Choices for Livability* program – a program in which Tri-Met is restructuring suburban service. Similarly, research results suggested that the people in professional or technical occupations place higher value on *time control* over their lives while those in other fields value *service frequency* and *availability* more. Information such as this helped Tri-Met support more than 250 employers in their efforts to comply with Oregon's Employee Commute Option rule, mandating a 10 percent reduction of single-driver trips.

With success in applying the 1993 attitude / benefits segmentation, Tri-Met decided to do another study in 1997. Because of Westside MAX, the enormous growth in the suburbs, and Tri-Met's major restructuring of suburban services, the timing was right. To add sample cells for specific geographic and modal (e.g., MAX vs. bus riders) splits that were large enough for statistical reliability, Tri-Met more than doubled the number of respondents, from 1,156 to 2,600.

In the 1997 study, Tri-Met focused on characteristics that are strongly related to ridership. For example,

- Among *people with pro-transit attitudes*, (1) having fewer than one car per adult in the household and (2) not having to transfer were found to have the greatest positive influence on ridership.
- *Potential rider segments* tend to include Multnomah County residents, singles, urban dwellers, renters, people under 25, and commuters. (These groups may overlap.)
- Among *commuters*, those most likely to ride tend to work in downtown Portland (where they would otherwise have to pay for parking) as skilled craftsmen or in clerical or service occupations. They tend to have a high school education and live within a half-mile of a bus stop or rail station.

The following tables summarize the main characteristics and tendencies of six discrete Tri-Met market segments identified in the 1993 and 1997 studies. Groups One through Four are considered potential markets -- they represent three-quarters of Tri-Met's riders and overall population. Groups Five and Six are not considered potential riders, yet they represent about one-fourth (24%) of residents and are a part of the population Tri-Met serves.

FOUR POTENTIAL-RIDER GROUPS	
1997	1993
<p>1 "Society must change its attitude toward cars and I look for ways to do my part."</p> <p style="text-align: right;"><i>18% of total; 37% of riders</i></p> <p>Group 1 respondents are strongly pro-bus. They feel that we have to change our attitude about using cars and have changed their behavior to help the environment. Unconcerned with the transit's inconveniences, they have concerns about their personal safety. They are likely to be female, from Multnomah County, well educated and younger. They have the highest transit ridership – 49% rode 2+ times in the past month.</p>	<p>1 "I can't get enough of that bus."</p> <p style="text-align: right;"><i>23% of total; 40% of riders</i></p> <p>Group 1 respondents are strongly pro-bus. They feel that bus riding is convenient, relaxing and non-polluting. They also give Tri-Met higher than average performance ratings and see transit as a solution to the traffic problems caused by growth. This group is especially likely to be well educated, female, urban, and renting their homes. Most who have ready access to transit are already riding – 56% rode 2+ times in the prior month.</p>
<p>2 "We have to change our attitude toward cars but I still want something fast and convenient."</p> <p style="text-align: right;"><i>19% of total; 22% of riders</i></p> <p>Group 2 respondents recognize that people have to change attitudes about how they use cars and are willing to take public transportation, if convenient. Things that bother others about the bus do not bother them, though getting around quickly and not having to wait is important to them. Safety on the bus or at bus stops is a non-issue for these people. Group 2 is predominantly male, well educated, with few low- income members. They ride frequently – 27% rode 2+ times in the past month. However, few commute by transit.</p>	<p>2 "Transit is okay but driving fits my lifestyle better."</p> <p style="text-align: right;"><i>16% of total; 17% of riders</i></p> <p>While Group 2 respondents are frequent Tri-Met users --</p> <p>34% rode 2+ times in the past month -- they use Tri-Met only when it is very convenient. A lot of things that bother other people about the bus do not bother them, but neither are they attracted by transit incentives such as pass subsidies or avoiding traffic. Group 2 respondents have a positive attitude toward Tri-Met but use whatever transportation best fits their schedule. Group 2 is predominantly male, high income, well educated, white collar, employed and urban.</p>
<p>3 "The traffic is getting so bad I don't like to drive so I wish I had better alternatives."</p> <p style="text-align: right;"><i>18% of total; 20% of riders</i></p> <p>People in Group 3 are very concerned about the increase in traffic caused by growth and are bothered by congestion and parking problems. They don't mind transferring but don't feel safe taking the bus. Many attitudes are timid – they don't mind the bus but have reservations, speed is more important than cost but not a lot more. Group 3 has more females, is less educated and is less likely to be from Multnomah County. They ride frequently – 25% rode 2+ times per month.</p>	<p>3 "I'm not comfortable riding the bus, but it is the best option I have."</p> <p style="text-align: right;"><i>18% of total; 20% of riders</i></p> <p>People in Group 3 are uncomfortable driving in heavy traffic or looking for parking. Transit offers an alternative to driving and 36% rode 2+ times in the prior month. Group 3 members are especially concerned about personal safety and comfort, and many have complaints about transit. Group 3 is predominantly female, with lower incomes and less education than average. These respondents are also the most likely to be transit dependent.</p>
<p>4 "I know we'll have to change our attitudes about how we use cars but I'm not sure I'm ready yet."</p> <p style="text-align: right;"><i>17% of total; 8% of riders</i></p> <p>While this segment is pro-bus in many of its attitudes, most Group 4 respondents will ride the bus only if they have to because the traffic is not yet bad enough and public transportation is not yet convenient enough. Safety is the major drawback of the bus with the majority concerned about personal safety when riding or waiting for a bus. Group 4 respondents tend to be married females with children. Many live in Washington County with proportionally fewer in Clackamas. About one in ten (11%) rode 2+ times in the past month.</p>	<p>4 "I know riding Tri-Met is the right thing to do, but I just don't have the time."</p> <p style="text-align: right;"><i>20% of total; 12% of riders</i></p> <p>Group 4 is supportive of Tri-Met and sees social benefits to using transit. Speed, convenience and safety are also very important to them and transit is seldom seen as a better alternative than their car. They tend to like MAX better than the bus, and use transit for special events such as Rose Festival or Blazer games. Group members are typically suburban residents who have less access to transit and do not commute to downtown Portland. About two in ten (19%) rode 2+ times in the prior month.</p>

TWO LOW OR NO POTENTIAL-RIDER GROUPS	
1997	1993
<p>5 "I love my car and I don't see any reason to change." 12% of total, 7% of riders</p> <p>People in Group 5 are attached to their cars and disagree that society is going to have to change its attitude about cars. They are not bothered by traffic congestion or parking, nor concerned about the traffic impacts of growth. They don't mind unfamiliar situations but they don't like the inconveniences of the bus. Group 5 is predominantly male, with high incomes, living in Multnomah and Washington County. They have low transit ridership (12% rode 2+ times in the past month.)</p>	<p>5 "Riding is not going to save the world" 11% of total, 8% of riders</p> <p>People in Group 5 do not see the social benefits of using public transportation. Speed, convenience, safety and comfort on transit are not issues with Group 5. Instead, they just do not see transit as a solution to transportation problems and have a skeptical attitude toward Tri-Met. Group 5 respondents tend to be older, middle income, long term area residents. The transit riders in Group 5 (24% rode 2+ times in the prior month) tended to ride Tri-met for work or when they could not use their cars.</p>
<p>6 "I'd only take the bus if I had to." 16% of total; 6% of riders.</p> <p>Nearly everyone in Group 6 said that they would only take the bus if they had to. There are a million reasons why they do not like the bus -- they don't like the inconveniences; they are uncomfortable in new situations or being around people they do not know; and the bus makes them nervous about their personal safety. Group 6 respondents are more likely to be female, older and younger than average, have lower incomes, and tend to be the least educated of the groups. They have low ridership -- 8% rode 2+ times in the past month.</p>	<p>6 "Nothing is going to get me on that bus." 13% of total; 3% of riders.</p> <p>Group 6 respondents are strongly negative toward public transportation and most said they would only take the bus if they had to. Convenience and control of their own schedule is highly important. They perceive the bus as slow, unsafe and uncomfortable. They have a poor impression of Tri-Met, though most actually know little about the service available to them. Group 6 respondents tend to live in the suburbs and be blue collar and clerical workers. They have low ridership -- 7% rode 2+ times in the prior month.</p>

Two other changes were made in research design from 1993 to 1997. Geographic analysis focused on seven areas based on zip code. Modal analysis compared those riding only MAX with people who ride the bus only or ride both the bus and MAX. With the larger sample size and the addition of the geographic and modal elements, Tri-Met can study well-defined but smaller sample cells, such as senior citizens in specific areas, to see if there are significant differences and whether there should be a separate marketing effort directed toward seniors. For example, Tri-Met found that residents near the new Westside MAX tend to be suburban families with children, and the parents work outside of Portland. Their pre-MAX transit use is low and they do not (yet) see Tri-Met as a convenient alternative.

To integrate what was learned in the 1997 segmentation study, Tri-Met plans a staff workshop to discuss the results and their application to different departments. Before long, the results will be in marketing materials and "on the street".

By their openness to using private-sector techniques such as market segmentation in the introduction of rail and suburban services, Tri-Met's employees and directors show leadership and community spirit. They are making a measurable difference.

Sources: *Market Segmentation Study for Tri-County Metropolitan Transportation District of Oregon*, October, 1993.
Market Segmentation Study for Tri-County Metropolitan Transportation District of Oregon, October, 1997.

Benefits

Benefit segmentation is found to provide the marketer with a new perspective and added insight into market situations. When properly executed, this approach is widely acknowledged as one of the best ways to segment markets. Some of the advantages of benefit segmentation are:

- Benefit segments are based on reasons consumers buy. As such, relationships between motivations and purchasing patterns in specific situations are presented.
- It is an appropriate segmentation base in many types of situations. It has been found useful for consumer and industrial products and has been used by services. As the example shows, it has been adopted in the public sector as well.
- Unlike other market segmentation bases, benefit segments are based on causal factors rather than descriptive factors. Since benefits recognize why people buy, their purposes and product desires, a direct, or cause and effect, relationship exists between motivations and purchasing patterns.
- Benefit segmentation is a method with great flexibility.
- Benefit segments can be identified through a variety of techniques, including but not limited to focus groups, the Delphi approach (a group of expert opinions), in-depth interviewing, and quantitative research (mail surveys, telephone personal interviews). Analytical methods for forming benefit segments can span the gamut from basic tabulation of opinion to advanced multivariate analysis.
- Common or custom segmentation classifications can be used in the segment.
- Benefit segmentation can be used in conjunction with several other closely related segmentation bases / variables, including product / firm loyalty, psychographics, perceptions, preferences, purchase intention, and purchase situations / occasions.¹⁶

Limitations

In some respects, the limitations of benefit segmentation resemble those of psychographic research – namely, problems in data collection and analysis, and cost factors. Other limitations include:

- Benefits must be identifiable and not abstract.
- Market segments must be recognizable and accessible to an agency's marketing or service strategies.
- Costs can be exceedingly high in obtaining the services of trained specialists to conduct the analysis. However, benefit segmentation is generally a less expensive technique than psychographic segmentation.
- Finally, the effectiveness of benefit segmentation is limited by the reality of the situation. While individuals may seek certain rational benefits from a product in the marketplace, they sometimes do not respond as they indicate they will, and may deviate from their expected purchasing behavior.

¹⁶ Weinstein, Market Segmentation.

Summary

Two basic approaches to market segmentation are...

- Pre-determined (*a priori*) segmentation – selecting certain groups from a population based on known characteristics and declaring them "segments".
- Market-defined (*post hoc*) segmentation – identifies segments based on actual market investigations, notably analysis of answers to survey questions intended to predict marketplace responses.

Physical Attribute Segmentation provides important information about individuals within specific markets. Segmenting markets by these physical dimensions is a logical starting point because. . .

- The data is relatively easy to obtain.
- It is generally less expensive than other forms of segmentation research.
- It provides a quick snapshot of a market.
- Populations can be sampled and accurately projected to represent characteristics of the entire market.
- The information gathered can be of great value for decision-making.
- The data corresponds to other available data and information for decision-making.

The most common bases for Physical Attribute Segmentation are. . .

- Geographics,
- Demographics, and
- Geodemographics.

Data for Physical Attribute Segmentation is available through. . .

- Published sources (e.g., the Census).
- Syndicated services.
- Primary research conducted by the agency.

Product Usage Segmentation is particularly applicable to transit. It involves. . .

- Segmenting based on ridership – notably frequency of ridership.

Segmenting markets based on product usage provides five major benefits:

- It is a useful dimension for understanding transit markets based on past behavior.
- It can be used to identify strategies to retain frequent riders.

- It can be used to identify strategies to increase consumption among infrequent or occasional riders.
- By providing additional benefits or focusing in on neglected market segments, it is possible to convert nonriders to riders.
- Unlike psychographic and benefit segmentation, segmenting based on product usage is generally easy to implement and requires less complex analysis. It is also less expensive.

Shortcomings of Product Usage Segmentation include. . .

- Product usage segments are often difficult to explain through demographics only.
- There are inherent problems associated with targeting the frequent rider segment.
- There are some definitional problems in product usage analysis.

Psychographic Segmentation is. . .

- The practical application of behavioral and social sciences to marketing research.
- A quantitative research procedure that is indicated when demographic, socioeconomic, and user / nonuser analyses are not sufficient to explain and predict consumer behavior.
- Seeking to describe human characteristics of consumers that may have bearing on their response to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes.

Psychographic research represents a major step forward in marketing research as it is oriented toward understanding the total human being as he / she goes through the purchase decision-making process. Segmentation based on psychographics has proven to be most useful in. . .

- Identifying target markets.
- Better explaining consumer behavior.
- Improving an agency's strategic marketing efforts.
- Minimizing the risks for new products, services, or other ventures.

Problems with Psychographic Segmentation include. . .

- Problems in data collection and analysis.
- Cost.
- No guarantees that it will work.

Psychographic Segmentation **always** requires primary research.

Benefit Segmentation is based on the belief that the benefits that people seek in consuming a given product are the basic reasons for the existence of true market segments.

- Benefits are the sum of product advantages or satisfactions that meet an individual's needs or wants.
- They extend beyond product features and serve to satisfy physical, emotional, or psychological needs.

Benefit segmentation is found to provide the marketer with a new perspective and added insight into market situations. When properly executed, this approach is widely acknowledged as one of the best ways to segment markets.

Some of the advantages of benefit segmentation are:

- Benefit segments are based on reasons consumers buy.
- It is an appropriate segmentation base in many types of situations.
- Benefit segments are based on causal factors rather than descriptive factors.
- Benefit segmentation is a method with great flexibility.
- Benefit segmentation can be used in conjunction with several other closely related segmentation bases / variables.

Limitations of Benefit Segmentation include:

- Similar to those for Psychographic Segmentation (data collection and analysis, cost).
- Human behavior – people don't always respond the way they say they will.

Benefit Segmentation **always** requires primary research.