

A MULTIDISCIPLINARY APPROACH TO MULTISTOP/MULTIPURPOSE SHOPPING BEHAVIOR AND RETAIL LOCATION PLANNING

JAMES REARDON, *University of Northern Colorado*
NATHAN KLING, *University of Northern Colorado*
SAULE AMIREBAYEVA, *University of Northern Colorado*
DENNY MCCORKLE, *Southwest Missouri State University*

Most models of spatial organization tend to describe consumer trips as having only one stop for a single purpose. While the geography and transportation literatures recognize the importance of multistop, multipurpose consumer trips, the marketing literature has mostly neglected this important issue in location planning. This paper adapts several multidisciplinary theories to develop an integrated model of multistop/multipurpose consumer shopping behavior. Strategies and implications for both academic research and retail managerial decisions are developed from the model.

INTRODUCTION

Classic location theories begin with the assumption that consumers make only single-purpose trips to the nearest store offering one particular good in question (McLafferty and Ghosh 1987). However, in reality consumer behavior is much more complex. First, consumers often travel to a variety of locations to purchase goods as well as services. Second, consumers may bypass the nearest outlet offering a particular good or service in favor of an outlet at a more distant location offering the same or a similar good or service. The reasons for this behavior could include such factors as everyday low prices or sale prices, the acceptance of credit/debit cards, store or chain image, quality of goods or services, likeability of store personnel, store promotions, etc. Third, consumers often combine shopping trips with other activities including socializing, recreation, and employment (Williams 1988). Fourth, many consumers combine shopping trips for two or more goods and/or services into one trip and visit one or more outlets during a trip (McLafferty and Ghosh

1987). Finally, during the course of both planned single-purpose trips and planned multipurpose trips, consumers are confronted with unplanned intervening opportunities and may make additional stop(s) before returning home (Schrader and Lauer 1995). The purpose of this paper is to develop a universal model of consumer shopping behavior that describes multistop and multipurpose shopping.

LITERATURE REVIEW

Hanson (1980) defines a "trip" as a home-to-home circuit and a "stop" as an interruption in travel caused by the individual's pursuit of an activity. "A multistop trip is any trip on which the traveler makes more than one stop, and a multipurpose trip is any multistop trip on which the trip maker pursues more than one purpose" (Hanson 1980, p. 245). Even though a multistop trip may have one or more purposes, a multistop trip does not necessarily have to possess more than one purpose. For instance, a consumer may make several stops during a trip to comparison shop for a home appliance. Although the consumer makes several stops, he/she has only one shopping purpose. However, shopping is often but one purpose in a multistop, multipurpose trip since shopping is frequently combined on the same

trip with many other purposes (e.g., picking up dry cleaning, stopping for food, mailing letters).

Consumer Decision Processes

Consumers combine several purposes into a single trip in order to reduce total effort and overall travel costs associated with acquiring a set of goods or services, or to comparison shop before making a purchase (Hanson 1979). Multipurpose travel is considered to be a rational behavior pattern that reduces the time and cost of travel (Ghosh and McLafferty 1984). Rational behavior means a consistent and calculated decision process in which the individual follows his or her own objectives, whatever they may be (Ben-Akiva and Lerman 1985). McLafferty and Ghosh (1987) suggest that consumers are rational and that when faced with an array of shopping tasks, they choose the shopping itinerary that minimizes total shopping costs -- the sum of travel costs, cost of goods, and inventory costs.

"Intraurban travel is a derived demand generated in response to the depleted inventories of goods, the requirement of some service, or the necessity to participate in some activity at a location other than the residence" (Williams 1988, p. 536). If some activities are discretionary in nature, there is a potential for accomplishing the activity in a multideestination trip. While single purpose trips are often for non-discretionary activities such as employment, these trips are often multistop/multipurpose as consumers stop on the way home for basic needs (i.e., milk, bread, gas) (Williams 1988).

Individuals make travel decisions under a variety of constraints, especially time and mode availability (Hanson 1980). Ghosh and McLafferty (1984) provide a model deriving the propensity for multipurpose travel from an assumption of cost-minimizing consumer behavior. They argue that in deciding where to shop, consumers trade off transportation costs with the cost of inventory and storage. The optimal propensity for multipurpose shopping and trip frequencies vary with the consumer's location in relation to shopping

opportunities (Ghosh and McLafferty 1984). In other words, a consumer who lives in an urban area near many retail outlets is more likely to make more frequent trips with a single purpose than a consumer who lives in the country at a great distance from retail outlets. The consumer who lives in the country will make fewer trips and these trips are more likely to be multistop, multipurpose trips. Garling and Garling (1988) suggest that there is a difference between a sequence of single choices and conjoint choices. With a sequence of single choices, distance may be minimized "locally" in each separate choice, but in conjoint choices, total distance may be minimized (Garling and Garling 1988).

Consumer Resource Utilization

Ingene (1984a) recognizes that time is an integral input into the shopping process. Based on Bucklin's (1966) earlier work, he suggests that consumers who are under time pressure will shop at fewer stores. Ingene further relies on the assumption of an economically rational person to suggest that the utility derived from voluntary time devoted to shopping must be greater than the value of the output. This can be directly tied to Becker's (1962, 1965) theory of time allocation. Becker suggests that consumers will allocate household time in accordance with the maximization principles of the theory of the firm in economics. Thus, a consumer's time is a useful resource that is used to generate output in the form of utility to the household. Just as with the theory of the firm, this maximization is subject to a cost function that is necessarily minimized.

Becker's (1965) time allocation theory is a problem of the efficient utility production that can be considered as a cost minimization problem under the theory of the firm. A household obtains utility from the underlying commodities that are produced using market goods and time as inputs (Michael and Becker 1973). That is, the household produces an output from market goods, labor, and capital inputs. The utility function is maximized subject to the production function constraints and a constraint on the household's available time, as well as the

income constraint. The time and money income constraints can be collapsed into a single resource constraint on the household's "full income" (Becker 1965). The importance of this concept of full income is that it embodies both the time and money income constraints, and its magnitude is independent of the fraction of time the household chooses to allocate to specific household activities such as income-earning and specific household production (HP) activities (Michael and Becker 1973). Thus, Becker was able to collapse constraints of time and money into a single, meaningful variable. Further, he implies that this constraint is relevant to all consumer activities, including shopping time.

Bell, Ho, and Tang (1998) develop an econometric store choice model at the individual household level. Whereas the standard retail selection models presume that store location and travel distance are the main influences on shoppers, retail pricing models assume that shoppers are influenced predominantly by price and promotion discounts. The Bell, Ho, and Tang model evaluates the relative impact of both. They argue that total shopping cost consists of fixed and variable costs. By their definition, fixed costs include: travel distance, the shopper's underlying preference for the store, and their loyalty to it over time. Variable costs are defined as a weighted sum of the numbers of items on the shopping list multiplied by their expected prices at the store. Their model argues that preference will be given to stores with higher fixed cost if a shopper shops for a large basket of goods, as the higher fixed cost is divided across more purchase items. These authors use basket size thresholds to assess the relative competitiveness of retailers. They argue that competitiveness declines to the store that simultaneously has high fixed and high variable costs.

Dellaert et al. (1998) assess how consumers combine multiple shopping purposes and destinations in their shopping trips. In their experimental study they model the influence of multistop and multipurpose shopping behavior. They develop their model by combining aspects of Kitamura's (1984) notion of perspective utility in modeling consumer choices of shopping trip chains and Arentze, Borgers, and

Timmermans' (1993) model which recursively describes consumer store choices for different categories of products. They found that in order to reduce their overall travel time, consumers combine purchases of multiple types of products. They further found that consumers "attach a less than rational (in the strict microeconomic sense) value to lower order purchase opportunities, in the sense that they weighted higher order purchase opportunities much more heavily in their choices than the possibility and travel costs to combine those purchases with lower order purchase opportunities." Consumers were less likely to be concerned about reducing travel costs through the mechanism of combining purchases when making clothing purchases in contrast to purchasing items found in drugstores. Thus, they demonstrated that shopping trip behavior may be less optimal than anticipated from a strictly travel cost minimizing point of view and that the availability of product orders at each retail location might influence tendencies for multistop shopping. Their conjoint approach provides understanding of the trade offs that consumers make between travel costs and selecting their preferred store. Manchanda, Ansari, and Gupta (1999) provide additional research on multicategory shopping by developing a model of multicategory choice when shopping that integrates complementarity, coincidence, and heterogeneity as important considerations.

Takeuchi and Bucklin (1977) suggest that increases in consumer wealth leads to greater wants and needs. Indirectly, this suggests that the accumulation of capital items will increase the need for capital maintenance and repairs. Additionally, wealth will increase car ownership and therefore increase the service sector of the retail structure devoted to servicing this type of customer. Also, wealth is a prime determinant of retail potential and market potential (Hasty and Reardon 1997).

Spatial Retailing and Retail Structure

One of the few streams of literature that implicitly subsumes multistop/multipurpose trips is spatial retailing. Bucklin (1978) and Ingene and Lusch (1981) developed the first models of retail structure.

These, and other models (Takeuchi and Bucklin 1977; Ingene 1984a, 1984b; Ingene and Brown 1987; Miller and Reardon 1995; Miller, Reardon, and McCorkle 1999), suggest that consumer actions have an effect on the structure of retailing. Due to the concentration on the antecedents of retail structure, these models rarely discuss the simultaneous effects of retail structure on consumer shopping behavior. However, these effects are implicit in the models.

Ingene and Lusch (1981) suggest that automobile ownership has a strong impact on retail structure. They expand previous models of market potential (e.g., Converse 1949; Huff 1964; Nakanishi and Cooper 1974) to propose that consumer mobility, in the form of automobile ownership, plays a significant role in the determination of market areas and the structure of retailing. They state that this effect is primarily based on the ability of households to access retailers. They and Ingene (1984a, 1984b) and Ingene and Brown (1987) also suggest that consumer access to shopping centers has an effect on retail structure in the form of congestion. Thus, environmental impediments to the ability to access retailers is a determinant of structure.

Ingene (1984a) also suggests that spatial dispersion and spatial clustering of retailers is a function of consumer shopping patterns. He proposes that the structure of transportation infrastructure has the effect of focusing consumer demand in certain areas. This in turn has the effect of encouraging planned or unplanned shopping districts, as defined by spatial clustering of retail outlets in the same geographic area. This clustering then enables consumers to engage in multipurpose shopping on a single trip (Cohen and Lewis 1967). Interestingly, spatial clustering also causes congestion, which forces customers to spend more time on any given shopping trip. Ingene and Lusch (1981) and Ingene (1984a, 1984b) provide a strong review of the relevant literature detailing the antecedents of retail structure and are not repeated here.

Hirschman (1978) suggests that intertype competition actually has a symbiotic effect on the sales of retailers. In other words, different types of retailers selling the same class of goods encourage customers

to find their ideal bundle of goods and thus spend more money due to an increase in satisfaction (Ingene 1983; Ingene and Brown 1987). This, in conjunction with spatial clustering of retailers, encourages consumers to shop at multiple stores in an area.

MODEL DEVELOPMENT

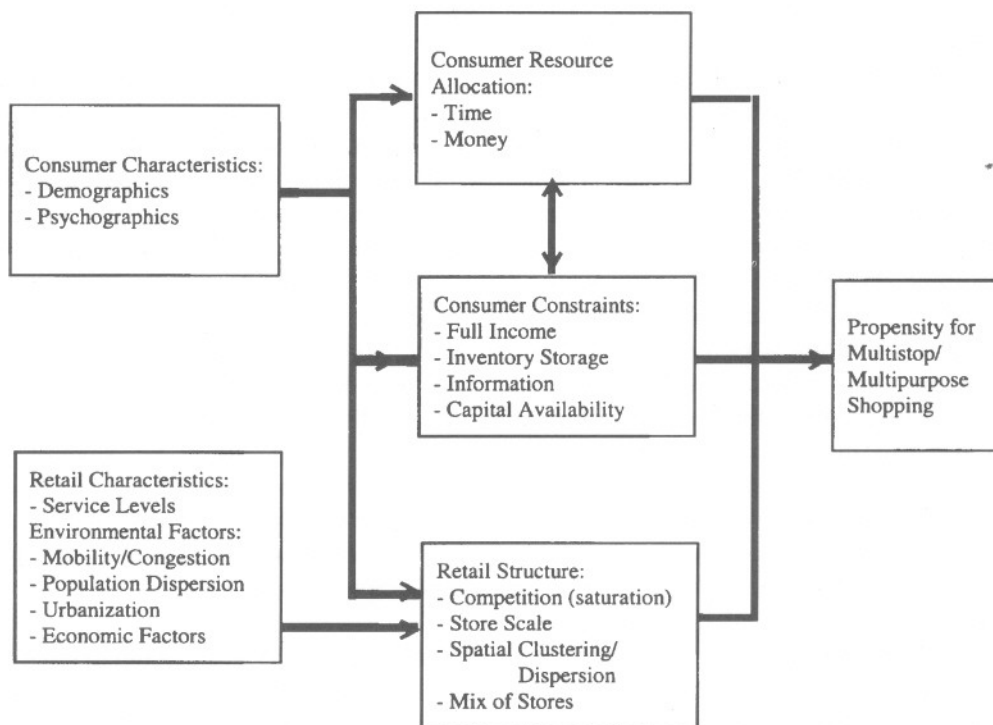
It is apparent from the literature that there are multiple factors that affect consumers' propensity for multistop/multipurpose shopping trips. A unified model of multistop/multipurpose shopping propensity is presented in Figure 1. As seen in the figure, antecedents to the propensity for multistop/multipurpose trips are combined into three broad categories: consumer resource allocation, consumer constraints, and the retail structure. The rationale for each of these antecedents is examined below.

Consumer Resource Allocation

The allocation of consumer resources determines where and how people shop to obtain a bundle of goods. Consumers allocate time to minimize the costs associated with travel and shopping (Hanson 1980) at a given level of utility (Becker 1965). The costs associated with shopping include transportation costs in the form of both time and money, the time spent finding information and choosing purchases, and the money spent on the purchases themselves. There is an obvious trade off between these categories. An increase in resource expenditure in one area will often decrease expenditures in others. For example, time spent comparison shopping between stores may reduce the final costs of the product bundle, but is likely to increase travel costs. Likewise, travel expenditures can be reduced by making purchases at convenience stores, however this is likely to increase the cost spent on the goods themselves.

The choice of allocation of time and money to the shopping experience is a function of consumer characteristics. How consumers allocate time and money across activities has not yet received the attention it deserves in the literature. Mostly, this

Figure 1
Propensity for Multistop/Multipurpose Shopping Behavior



allocation process is attributed to individual tastes and preference functions (Henderson and Quandt 1980). However, the literature concerning family lifecycle, psychographic analysis, income disparity, and other areas, provide sufficient basis to believe that resource allocation is a function of household characteristics, as well as tastes and preferences. Thus, we propose that the allocation of time is partially a function of demographic and psychographic factors. For example, people who are classified as experiencers in the VALS2 system are more likely to allocate resources away from shopping and more towards leisure activities. Further, as suggested by Strober and Weinberg (1980) and Becker (1965), higher income people are more likely to spend time working and less time in household-related experiences. This is due to a higher opportunity cost of time that is expended in

discretionary activities. Bucklin (1966) and Ingene (1984a) further suggest that time-poor consumers will minimize their shopping by visiting fewer stores. On the other hand, a household made up of healthy retirees may spend more time shopping because they are time-rich. Employed consumers will have a greater propensity for multipurpose trips due to combining the daily commute with other stops such as shopping.

Consumer Constraints

Rational consumers allocate resources according to constraints to maximize utility. Thus, consumer constraints have both a direct and an indirect effect on the propensity for multistop/multipurpose shopping. Indirectly, they affect how much a consumer can spend on shopping, both in time and

money. As discussed earlier, Becker (1965) refers to this combination of time and money constraint as the full income constraint. Consumers have a maximum level of this combination for allocating to all activities. While a minimum amount of shopping is necessary, any discretionary time and/or money spent beyond this will involve a trade off with other activities. By definition, full income is the combined effect of unearned income (e.g., inheritance), earned income (e.g., wages), and discretionary time availability. Thus, demographic variables such as occupation, age, gender, and others, will affect the income portion of the full income constraint. While time availability is equal for all individuals (i.e., 24 hours a day), household size and composition along with non-discretionary uses will have a strong impact on household time availability. We propose that an increase in household size also increases the propensity for multipurpose trips. For example, a household with two or three children is involved in a much wider array of activities than a household with only a single person. The children need transportation to their activities (i.e., soccer practice, ballet lessons, scouts, etc.) and these trips are often combined with brief shopping trips. Due to time constraints, the adults in these households need to make the most out of every trip from home.

McLafferty and Ghosh (1987) indicate that inventory storage cost and space play a unique role in shopping behavior. In essence, storage costs act in the same manner as income constraints to affect shopping behavior. Consumers are limited in the amount of product they can afford to store in their household, and even more limited with perishables. Likewise, there exists a space constraint on inventory storage. Due to space constraints, most consumers cannot store a year's supply of every product that they use. Moreover, most consumers make purchase decisions based on cupboard and refrigeration space and vacancy. For example, there is a significant difference in the shopping behavior between families that have large chest freezers and those that rely on the smaller freezers in their refrigerators. Those with larger long-term storage space have the option of making more purchases in a single trip. Consumers without this space are forced to

continually shop for necessities, such as frozen vegetables and meat. The obvious results of this example are that consumers who invest in storage space and inventory are much more likely to go on single multipurpose, multistop shopping trips with less frequency than those without such space.

Information availability and search can also have an effect on shopping patterns. Consumers devote time and effort to the acquisition of information to complete their shopping (Bettman 1979). It may include price, product availability, brand, or store information. This may also include information gathering on the needs and wants within the household. Such information is vital when consumers are acting in a rational manner to minimize costs while maximizing utility (Punj and Staelin 1983). Consumers without prior information knowledge may shop at several stores for information (Goldman 1976, 1977; Calson and Gieseke 1983). As shown by Cox (1967), consumers seek information based on psychographic and demographic similarities.

Capital availability is expected to have a dual effect on a consumer's propensity to engage in multistop/multipurpose shopping behaviors. First, the effect concerns the need for capital maintenance. Consumers with large capital items require maintenance, repairs, and cleaning (i.e., gasoline, repair parts, and cleaning solutions) to ensure that the items perform their function. This is true for most major capital items (e.g., automobiles, lawn mowers, garden tractors) and to a lesser extent, appliances (refrigerators, ovens). The second effect is primarily a function of capital used to increase mobility. The ownership of an automobile is expected to have a strong effect on a consumer's propensity to engage in multistop/multipurpose trips by increasing the effective ability to transport goods and increase in mobility at the consumer's discretion.

Retail Structure

Bucklin (1972, p. 66) describes the retail structure as "the manner in which firms engage in the trade of a commodity." Bucklin (1978), Ingene and Lusch

(1981), Ingene (1984a, 1984b) and Ingene and Brown (1987) describe in detail how consumer activities affect the retail structure. They also imply a reciprocal relationship between the two sets of variables (i.e., retail structure and consumer characteristics). Holman and Wilson (1982, p. 58) state "consumers respond to retail environments in relation to their time needs and how these environments satisfy those needs." Specifically, we propose that the propensity for multistop/multipurpose shopping behavior is directly affected by the level of competition, scale or size of stores, spatial clustering/dispersion, and mix of stores in a geographic trade area.

As competition in a trade area increases, consumers are more likely to find what is needed or wanted. They also have greater options to gather information by comparative shopping. Thus, we propose that competition is likely to have a positive effect on multistop/multipurpose shopping behavior. The same effect holds true for increases in spatial clustering of stores. As more stores enter a specific trade area, they create shopping districts that allow consumers easy access to multiple offerings and greater ease in obtaining comparative information.

As store scale increases, (i.e., the average size of stores increases), consumers have more options for one stop shopping. Larger stores offer a greater selection of goods and services to the consumer. By shopping in a larger store, a consumer can decrease time spent shopping and increase their productivity (Ingene 1984a). Likewise, as the mix of stores in a trade area becomes more diverse, a consumer increases their options for obtaining goods in a relatively small geographic area. Thus, consumers can save time and effort by making multipurpose stops in a single shopping district. Conversely, as the mix of stores become more homogeneous in a trade area, consumers must look outside the area for multipurpose purchases.

SUMMARY AND CONCLUSIONS

Previous marketing research has often ignored the effects of multistop, multipurpose shopping behavior on retail location planning. This paper presents an

integrated model where this behavior is predicted by three important antecedents: (1) consumer resource allocation of time and money; (2) consumer constraints including full income, inventory costs, information costs, and capital availability; and (3) retail structure (i.e., competition; size, mix and spatial dispersion of stores).

First, in this time-crunched society, the model reflects the importance of locating stores for accessibility. When targeting a shopper for single-purpose shopping trips, a convenient location near their home, place of work, high-traffic areas, or near non-shopping destinations (e.g., their child's school, after work health or recreational club) is needed. Such retail location planning allows these single-purpose shoppers to save time by combining these shopping needs with other non-shopping trips. When appropriate, the offering of call ahead, drive-thru, and home delivery services may also enhance the marketing mix. In such instances, shoppers are less likely to shop and compare prices, and more likely to trade off lower prices for greater convenience and time savings.

Second, when targeting a shopper for multipurpose shopping trips, location near complementary groupings of stores (e.g., shopping malls or centers, downtown areas) can save shoppers both time and money by reducing or minimizing their requirement for multistop shopping. As to retail location planning, a single or minimally dispersed shopping location allows the multipurpose shopper to save time with minimal stops and, if desired, save money through ease of obtaining information with comparison shopping. This scenario also stresses the importance for complementary stores to develop co-marketing and co-promotion opportunities to attract time-crunched multipurpose shoppers.

Research is needed to determine the role that multi-channel marketing strategies (virtual retail location planning) can play in fulfilling the needs of single and multipurpose shoppers. For example, both single-purpose and multipurpose shoppers can save time (and sometimes money) by shopping through additional channels such as direct order catalogs or the Internet/Web. Specific research is needed to

determine the Internet/Web's effect on information search and comparison shopping for reducing or replacing multistop shopping behavior. A retailer with limited floor space could better fulfill single-purpose or multipurpose needs by offering additional product selection (complementary and non-complementary) by catalog, in-store Web-based kiosk, or Web site, rather than lose those sales to competitors.

Additional research is also needed to determine the extent that multistop, multipurpose trips are planned and how many are the result of intervening opportunities (Williams 1988). An intervening opportunity is an opportunity to make an unplanned purchase during a trip that was otherwise planned. Although some consumers make a habit of buying gasoline on some regular interval (i.e., every Saturday), other consumers wait until the gas gauge is on empty. Buying gasoline may be an intervening opportunity for many consumers. Thus, a planned single-stop trip may turn into a multistop trip when gasoline is purchased. Also, as marketers, a better understanding of the frequency of multistop, multipurpose trips, as well as, a better understanding as to which types of stops are combined most often is needed.

REFERENCES

- Arentze, Theo A., Aloys W.J. Borgers, and Harry J.P. Timmermans (1993), "A Model of Multipurpose Shopping Trip Behavior," *Papers in Regional Science*, 72 (1), 239-256.
- Becker, Gary S. (1962), "Irrational Behavior and Economic Theory," *Journal of Political Economy*, 70 (February), 1-13.
- Becker, Gary S. (1965), "A Theory of the Allocation of Time," *The Economic Journal*, 75 (September), 493-517.
- Bell, David R., Teck-Hua Ho, and Christopher S. Tang (1998), "Determining Where to Shop: Fixed and Variable Cost of Shopping," *Journal Marketing Research*, (August), 352-269.
- Ben-Akiva, Moshe and Steven R. Lerman (1985), *Discrete Choice Analysis, Theory and Application to Travel Demand*, Cambridge, MA: The MIT Press.
- Bettman, J. (1979), *An Information Processing Theory of Consumer Choice*, Reading, MA: Addison-Wesley Publishing.
- Bucklin, Louis P. (1966), "Testing Propensities to Shop," *Journal of Marketing*, 30 (January), 50-55.
- Bucklin, Louis P. (1972), *Competition and Evolution in the Distributive Trades*, Englewood Cliffs, N.J.: Prentice-Hall, Inc.
- Bucklin, Louis P. (1978), *Productivity in Marketing*, Chicago: American Marketing Association.
- Carlson, J. and R. Gieseke (1983), "Price Search in a Product Market," *Journal of Consumer Research*, 9 (March), 357-365.
- Cohen, J. and G. Lewis (1967), "Forms and Function in the Geography in Retailing," *Economic Geography*, 43, (January), 1-42.
- Converse, Paul D. (1949), "New Laws of Retail Gravitation," *Journal of Marketing*, 13 (October), 370-384.
- Cox, Reavis (1967), *Risk-Taking and Information Handling in Consumer Behavior*, Cambridge, MA: Harvard University Press.
- Dellaert, Benedict G. C., Theo A. Arentze, Michael Bierlaire, Allowys W.J. Borders, and Harry J.P. Timmermans (1998), "Investigating Consumers Tendencies to Combine Multiple Shopping Purposes and Destinations," *Journal of Marketing Research*, 35 (May), 177-188.
- Garling, T. and E. Garling (1988), "Distance Minimization in Downtown Pedestrian Shopping," *Environment and Planning A*, 20 (April), 547-554.
- Ghosh, Avijit and Sara McLafferty (1984), "A Model of Consumer Propensity for Multipurpose Shopping," *Geographical Analysis*, 16 (July), 244-249.
- Goldman, A. (1976), "Do Lower Income Consumers Have a More Restricted Shopping Scope?" *Journal of Marketing*, 40 (January), 46-54.
- Goldman, A. (1977), "Consumer Knowledge of Food Prices as an Indicator of Shopping Effectiveness," *Journal of Marketing*, 41 (October), 67-75.
- Hanson, Susan (1979), "Urban Travel Linkages: A Review," in *Behavioral Travel Modeling*, D.A. Hensher and P. Stopher, editors, London: Croom Helm, Ltd.

- (1980), "Spatial Diversification and Multipurpose Travel: Implications for Choice Theory," *Geographical Analysis*, 12 (July), 245-257.
- Hasty, Ronald and James Reardon (1997), *Retail Management*, New York: McGraw-Hill Publishing.
- Henderson, James M. and Richard E. Quandt (1980), *Microeconomic Theory: A Mathematical Approach*, New York: McGraw-Hill Publishing.
- Hirschman, Elizabeth (1978), "A Descriptive Theory of Retail Market Structure," *Journal of Retailing*, 54 (Winter), 29-48.
- Holman, Rebecca H. and Dale R. Wilson (1982), "Temporal Equilibrium as a Basis for Retail Shopping Behavior," *Journal of Retailing*, 58 (Spring), 58-81.
- Huff, David L. (1964), "Defining and Estimating a Trading Area," *Journal of Marketing*, 28 (July), 34-38.
- Ingene, Charles (1983), "Intertype Competition: Restaurants Versus Grocery Stores," *Journal of Retailing*, 59 (Fall), 49-75.
- (1984a), "Productivity and Functional Shifting in Spatial Retailing: Private and Social Perspectives," *Journal of Retailing*, 60 (Fall), 14-35.
- (1984b), "Structural Determinants of Market Potential," *Journal of Retailing*, 60 (Spring), 37-64.
- Ingene, Charles and Robert Lusch (1981), "A Model of Retail Structure," *Research in Marketing*, 5, 101-164 editor Jagdish Sheth.
- Ingene, Charles and James Brown (1987), "The Structure of Gasoline Retailing," *Journal of Retailing*, 64 (Winter), 365-392.
- Kitamura, Rijuchi (1984), "Incorporate Trip Chaining to Analysis of Destination Choice," *Transportation Research B*, 18 B (1) 67-81.
- Manchanda, Puneet, Asim Ansari, and Sumil Gupta (1999), "The 'Shopping Basket': A Model for Multicategory Purchase Incidence Decisions," *Marketing Science*, 18 (2), 95-114.
- McLafferty, Sara and Avijit Ghosh (1987), "Optimal Location and Allocation With Multipurpose Shopping," in *Spatial Analysis and Location-Allocation Models*, Avijit Ghosh and Gerard Rushton, editors, New York: Van Nostrand Reinhold Company.
- Michael, Robert T. and Gary S. Becker (1973), "On the New Theory of Consumer Behavior," *Swedish Journal of Economics*, 75, 378-96.
- Miller, Chip and James Reardon (1995), "The Structure of Markets, Competition, and Retailing: Effects of Intratype Competition," *Journal of Marketing Management*, 5 (2), 35-46.
- Miller, Chip, James Reardon, and Denny McCorkle (1999), "The Effects of Competition on Retail Structure: An Examination of Intratype, Intertype, and Intercategory Competition," *Journal of Marketing*, 63 (October), 107-120.
- Nakanishi, M. and L. Cooper (1974), "Parameter Estimation for a Multiplicative Competitive Interaction Model -- Least Squares Approach," *Journal of Marketing Research*, 11 (August), 14-19.
- Punj, G. and R. Staelin (1983), "A Model of Consumer Information Search for New Automobiles," *Journal of Consumer Research*, 9 (March), 366-380.
- Schrader, Julie Toner and John Lauer (1995), "An Exploratory Study of Multistop Trips, Multipurpose Trips and Retail Location Planning," *Proceedings of the Midwest Marketing Association*, 73-76.
- Strober, Myra H. and Charles B. Weinberg (1980), "Strategies Used by Working and Nonworking Wives to Reduce Time Pressures," *Journal of Consumer Research* 6 (4), 338-48.
- Takeuchi, Hirotaka and Louis Bucklin (1977), "Productivity in Retailing: Retail Structure and Public Policy," *Journal of Retailing*, 53 (Spring), 35-46, 94.
- Williams, P.A. (1988), "A Recursive Model of Intraurban Trip-Making," *Environment and Planning A*, 20, 535-546.