Social Aspects of Urban Forestry

PUBLIC RESPONSE TO THE URBAN FOREST IN INNER-CITY BUSINESS DISTRICTS

by Kathleen L. Wolf

Abstract. Revitalization programs are under way in many inner-city business districts. An urban forestry program can be an important element in creating an appealing consumer environment, yet it may not be considered a priority given that there are often many physical improvements needs. This research evaluated the role of trees in consumer/ environment interactions, focusing on the districtwide public goods provided by the community forest. A national survey evaluated public perceptions, patronage behavior intentions, and product willingness to pay in relationship to varied presence of trees in retail streetscapes. Results suggest that consumer behavior is positively correlated with streetscape greening on all of these cognitive and behavioral dimensions. Research outcomes also establish a basis for partnerships with business communities regarding urban forest planning and management.

Key Words. Urban/community forestry; public perceptions; retail business.

In many U.S. inner cities, local business districts are working toward revival and revitalization. Improvements needs are many—building upgrades, street and sidewalk improvements, sanitation, security—and place extreme demands on limited resources. Despite the environmental benefits provided by trees in cities, tree programs are often not a high priority for merchants in struggling business communities.

Urban trees provide few, if any, marketable products that generate direct returns on investment for businesses. Rather, indirect benefits are likely and are difficult to assess. A research project was conducted to evaluate the potential economic contributions of trees to retail settings in revitalizing business districts. Survey outcomes suggest that trees are important components of a welcoming, appealing consumer environment. Such information can aid urban forestry agencies and professionals in efforts to enlist business support for creating and stewarding a city's urban forest.

BACKGROUND AND LITERATURE

While many studies have documented the multiple benefits and satisfactions of urban vegetation (Dwyer et al. 1994), most have focused on parks and residential settings (Sommer et al. 1990; Schroeder 1992), overlooking the importance of the urban forest to private enterprise (Dwyer et al. 1992). Little is known about the perceived benefits and values of the urban forest in retail and commercial districts, a void addressed by this research.

Consumer/Environment Interaction

Psychological theory of person/environment dynamics constituted the core of this study, with focus on consumer/ environment interaction. Social scientists distinguish the physical-tangible domain of an environment from interpersonal and sociocultural domains (Stokols 1978; Wapner 1987). Some person/environment research is premised on stimulus-response assumptions; other investigations maintain an interactional perspective (Moore 1987).

Response to environments arises from a person's myriad assessments of a physical setting. Observers interpret rather literal characteristics of a place to make judgments of function (e.g., school versus hospital) or wayfinding. Observers also make connotative or inferential judgments about the quality or character of a place and the people who inhabit it (Nasar 1998). People cognitively overlay physical form with meanings or representations, integrating mediating information gained from observers' prior experiences, social learning, and attitudes.

Retailers rely on the tangible, physical setting of their business to attract consumers to their products and services. Surprisingly, there is little information about the role of outdoor environment in consumer behavior, despite extensive marketing and retail science studies on store interiors and products. While general person/environment interaction has been studied since the 1940s, the area of consumer/environment interaction has attracted relatively few research efforts (Everett et al. 1994).

Urban Trees and Public Goods

Knowledge about urban tree benefits and services has grown considerably in recent decades. Easily observed measures of value, such as those expressed through market pricing dynamics, do not exist for such public goods (Fausold and Lilieholm 1996; Prato 1998).

One vein of benefits research focuses on environmental improvements and enhancement such as surface water management and air quality (McPherson 1995). Dollar values have been derived from extrapolations of environmental benefits and the substitutability of forest-derived "nature's services" for goods and services having market-based values (Daily 1997).

In addition, the psychosocial benefits that accrue as people encounter trees and nature in cities are extensive. Scientific evidence confirms that experiences of nature are associated with enhanced worker productivity (Kaplan 1992), traffic stress reduction (Parsons et al. 1998), emotional stress mitigation (Ulrich 1986), and restoration of cognitive capacities needed for basic functioning and productivity (Kaplan and Kaplan 1989; Cimprich 1992).

Public goods estimations derived from environmental and psychosocial benefits may not be particularly salient to business audiences. In retail and commercial settings, the urban forest is often regarded along a spectrum from annoyance or nuisance to actual business detriment (Wolf 1998). Such attitudes incite behaviors that eliminate or preclude urban forest programs in many retail settings. American Forests (1999) recommends that urban retail and commercial districts have a 15% canopy cover; the national average is approximately 5%.

Tree Amenity Valuation

A variety of scientific methods have been employed to assess public preference and perceptual response regarding diverse landscapes (Ulrich 1986; Kaplan and Kaplan 1989). Economists have also developed contingent valuation methods (CVM), which O'Doherty (1996) regards as a "monetized technique for eliciting public preferences." Contingent valuation surveys have been used to assess public willingness to pay for use, conservation, or restoration of urban and rural resources. Nonetheless, empirical applications of CVM to elicit values for public goods associated with urban forestry are few (Tyrväinen and Väänänen 1998).

The problems of CVM survey design have been widely discussed and carefully documented (Mitchell and Carson 1989; Prato 1998). Bishop and Heberlein (1990) identify six design elements for maintaining the reliability of CVM surveys and results. First, know whose and which values will be estimated. Also, respondents must be provided with a clear and meaningful description of the good. A realistic and neutral payment method must be used to ask valuation questions. A suitable question format must be developed that gives reliable values. Additionally, the survey should collect information on other factors that affect values. Finally, the data must be analyzed using valid statistical procedures.

Research Program

A multiphase, national research program was conducted to evaluate several dimensions of consumers' experiences of inner-city business districts. Qualitative interviews, preference evaluations, and perceptual responses were elicited; perceptual results are reported here. Four research questions provided a framework for the research design:

1. What is the relationship between street landscape and consumers' perceptions of associated businesses?

2. Are there any differences in consumers' patronage behavior related to a shopping environment's visual amenities?
3. Does the presence of trees in retail environments influence what consumers would be willing to pay for products?
4. What demographic factors are associated with differences in district perceptions, patronage behavior, and pricing valuation?

Answers to these questions are directly related to the "bottom line" fiscal interests of business and commerce and provide insights as to how forest benefits may align with retail enterprise.

RESEARCH METHODS

Psychometric and econometric survey methods were employed to assess consumer response to streetscape conditions in revitalizing inner-city business districts. Three hypothetical scenarios of neighborhood business district streetscapes were presented using composites of photographic images and a plan view sketch. The three scenarios differed with respect to the quantity, location, and complexity of vegetation. Other scene content was controlled because secondary visual features (e.g., building age, utility lines) can be distractors and affect viewer response (Smardon 1988; Herzog and Shier 2000).

In the *No Trees* scenario (Figure 1) the district is devoid of vegetation, and scenes contain uninterrupted arrays of storefronts. The *Traditional Trees* scenario (Figure 2) depicts a similar street scene with equidistantly placed street trees of medium height. No conflicts of trees with structures or infrastructure are directly apparent. Finally, the *Mixed Vegetation* scenario (Figure 3) contains a vegetation complement of mixed species composition and diverse structure. Accent planters, shrubs, and trees are intermixed and informally placed within the pedestrian zone.

Each participant responded to two of the three scenarios. For each, participants were asked to provide ratings on a bank of perceptual descriptors. A second set of variables elicited patronage behavior response. Respondents also specified their willingness to pay (WTP) for items in a list of goods and services. Last were variables to determine participants' socioeconomic situation, shopping behavior patterns, and cultural background.

Following pretesting, the survey was distributed to residents of revitalizing neighborhood business districts in selected U.S. cities having populations greater than 100,000: Los Angeles, California; Washington, D.C.; Chicago, Illinois; Portland, Oregon; Pittsburgh, Pennsylvania; Austin, Texas; and Seattle, Washington. The sampling frame for survey mailing was determined by screening criteria at the city, then the business district level. Respondent sampling for ethnic and cultural diversity was pursued.
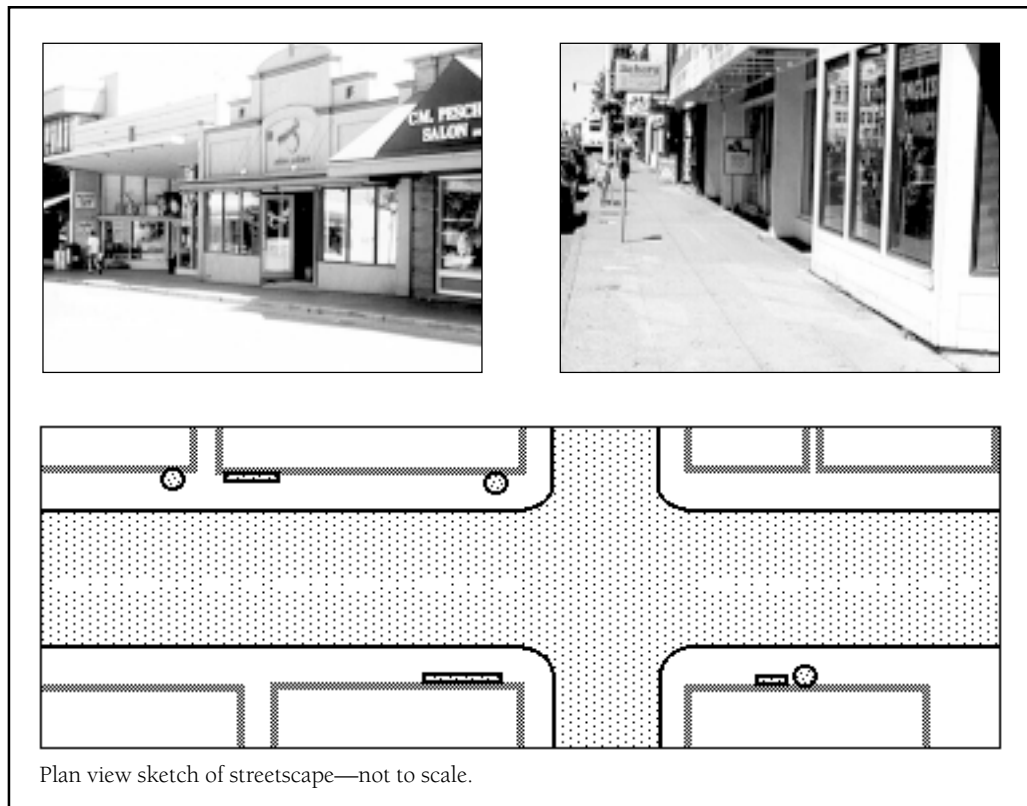
Plan view sketch of streetscape—not to scale.

Figure 1. Business district scenarios: No Trees scenario.
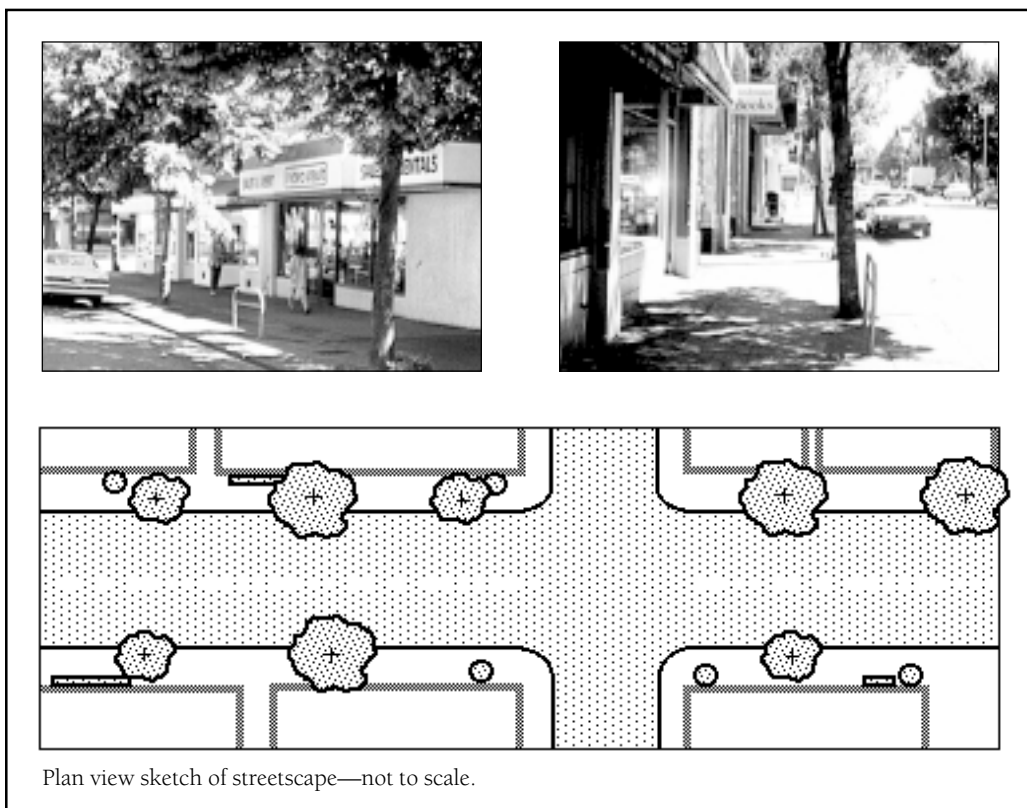
Plan view sketch of streetscape—not to scale.

Figure 2. Business district scenarios: Traditional Trees scenario.

Local partners in each of the cities were extremely helpful in identifying suitable locations for survey mailing and constructing mailing lists. Master address lists were assembled from organization membership lists, municipal records, and list broker purchases based on ZIP codes. A stratified random sample of addresses was generated.
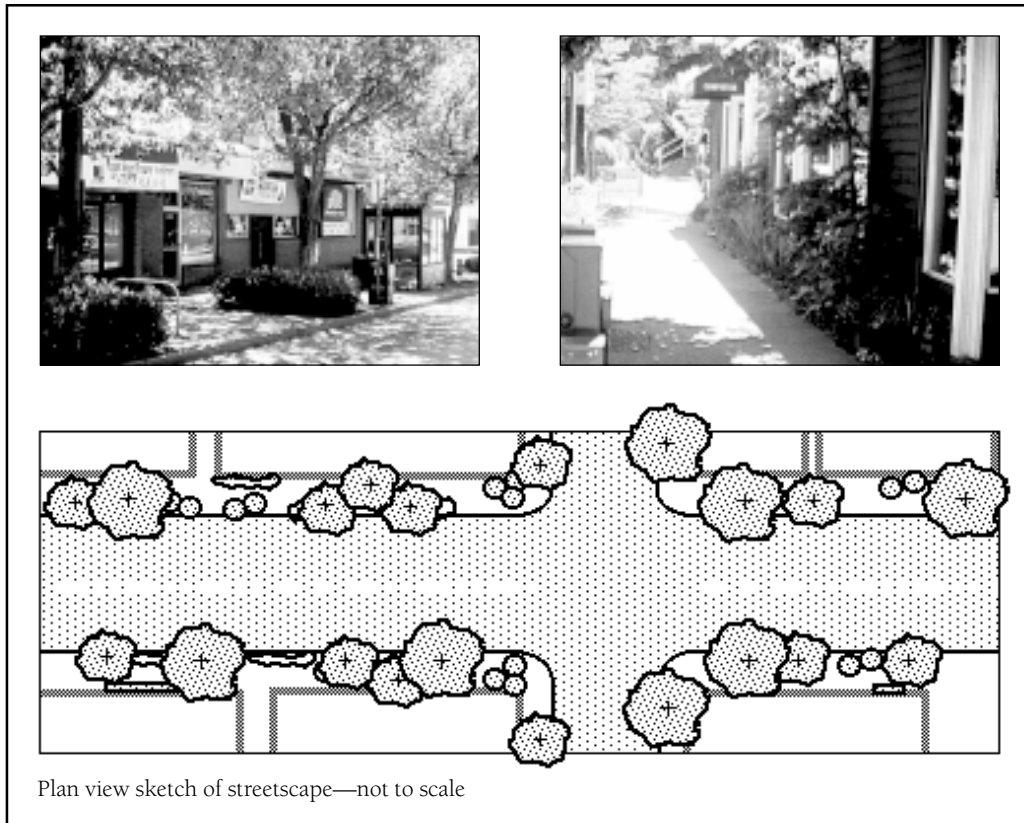
Twenty-five hundred surveys were sent to residences within specified districts in winter 1998. Survey mailings were followed by reminder cards, then a second questionnaire mailing. Two-hundred seventy reasonably complete questionnaires were returned, while 309 were nondeliverable or returned without response. The 12% response rate is lower than typical landscape assessment return rates of 25% to 50% (Kaplan and Kaplan 1989; Sullivan 1994), even considering that return rates for inner-city surveys are usually lower (Dillman 2000).

ANALYSIS AND RESULTS

Data analysis is presented in four sections. Analytic investigations for each variable set included descriptive statistics, data reduction procedures, and between-scenario comparisons.

Trees and Perceptions

A set of Likert scaled response items included issues of place mood and security, shopping compat-

Plan view sketch of streetscape—not to scale

Figure 3. Business district scenarios: Mixed Vegetation scenario.

It is expected that the contrast of trees or no trees in a consumer environment would influence consumers' judgments of Amenity and Comfort. The contribution of vegetation to other perceptual judgments of retail place merits closer attention. Representative images were carefully chosen to eliminate known confounds, including level of tendedness (Herzog and Gale 1996) and upkeep (Nasar 1987). Despite equivalence of streetscape tidiness, the presence of vegetation positively influenced appraisals of Maintenance and Upkeep.

As revealed by Merchant Interaction and Quality of Products categories, the presence of trees has significant positive influences on consumer inferences about a shopping environment. Marketing studies have evaluated the role of "atmospherics" on consumer intentions and behavior, finding that indoor environmental elements such as music, product layout, and lighting all contribute to store image (Zimmer and Golden 1988). In turn, store image influences consumers' perceptions (Dodds et al. 1991). Prior research on nature and city streets supports the finding that both evaluative appraisals (Nasar 1987) and affective response (Sheets and Manzer 1991) are boosted by the presence of trees.

The Merchant Interaction category confirms that shoppers infer social factors from physical attributes of a place. A person's cognitive interpretations and representations of place extend to include the quality of social interaction and response that he or she expects. This finding may be of particular importance to businesses that are service oriented. It may also have price behavior implications: Grewal and Baker (1994) found that store settings with interactive, friendly sales personnel produced higher price acceptability in consumers.

Patronage Behavior
Patronage behavior variables consisted of five categorical response questions. Participants were asked to specify

ibility, and merchant traits. Ratings for the 25 perceptual items ranged from 1 (indicating "strongly disagree") to 7 (specifying "strongly agree"), with 4 as a neutral point.

Using accepted decision rules (Kaplan and Kaplan 1989) to define and name underlying categories, data reduction entailed principal axis factor analysis with Varimax rotation. Four categories emerged—Amenity and Comfort, Merchant Interaction, Quality of Products, and Maintenance and Upkeep—accounting for 65% of the total variable variance. New variables were constructed by aggregating mean values across all category items for each respondent. Category means were compared between scenarios using one-way ANOVA and Bonferroni post hoc tests (Table 1).

Distinct patterns of ratings response characterize the relationships of the districts and the four perceptual categories. The *No Trees* scenario was consistently rated lowest on each of the perceptual scales. Respondents described the district as being "stark," "barren," and "bleak."

Meanwhile, the districts containing vegetation, *Traditional Trees* and *Mixed Vegetation*, had higher ratings, again across all perceptual categories. Respondents described the *Traditional Trees* district as "welcoming," "friendly," and being "neighborhoody" and observed that the *Mixed Vegetation* district appeared "relaxing," "inviting," and "well-kept."

Table 1. Scenario perceptions—categories and comparisons.

Factor categories and items	Factor loading	Response variance (%)	District scenario			ANOVA
			No trees	Trad. trees	Mixed veg.	
Amenity and Comfort		25.31	Mean	Mean	Mean	F = 269.47
Positive image	0.79		3.00	5.35	5.69	p < .000, 2 df
Attractive to tourists	0.78		1.28 SD	1.17 SD	1.05 SD	(2, 3 no sig. Δ∗)
Has a pleasant atmosphere	0.78					
Good place to explore	0.78					
Place to browse for future purchases	0.73					
Businesses are friendly and approachable	0.57					
Merchant Interaction		16.96	Mean	Mean	Mean	F = 25.23
Goods and services are fairly priced	0.75		4.24	4.82	4.90	p < .000, 2 df
Shopkeepers are informative	0.72		0.98 SD	0.90 SD	0.94 SD	(2, 3 no sig. Δ∗)
Good customer service	0.68					
Diverse businesses and services	0.45					
Quality of Products		14.43	Mean	Mean	Mean	F = 81.03
High-quality brands are available	0.85		3.59	4.69	5.00	p < .000, 2 df
Products are well-made and reliable	0.77		1.07 SD	1.03 SD	1.14 SD	(2, 3 no sig. Δ∗)
Merchants will do special orders	0.54					
Maintenance and Upkeep		8.46	Mean	Mean	Mean	F = 110.31
Clean and litter-free	0.66		4.27	5.65	5.94	p < .000, 2 df
Comfortable street spaces	0.41		1.39 SD	1.01 SD	0.87 SD	(2, 3 no sig. Δ∗)

*Bonferroni post hoc comparison of means, α = 0.017 (0.05/3).

travel time, travel distance, duration of visit, frequency of visits, and parking fee WTP. Based on response distributions, some variable categories were collapsed. Two-way contingency analysis tables evaluated the relationship of variables to district scenarios using X^2 tests and Cramer's V statistics (Table 2). Response on all patronage variables was found to be significantly related to district vegetation content.

Response to the two vegetated districts was again similar and differed in like ways from the *No Trees* condition. An inverse response pattern is evident. *No Trees* responses are concentrated at the low end of each of the variables' categorical arrays and diminish in frequency moving toward the high end of the arrays. Conversely, responses associated with *Traditional Trees* and *Mixed Vegetation* are less frequent at the lowest end of the arrays, increase in frequency, then slightly decline at the variables' higher value levels but remain at higher frequencies than the *No Trees* scenario.

Another response pattern is evident. Patronage response across all scenarios is greater at mid-array categories. Perhaps there are thresholds to visitation and travel behavior associated with the type of retail environment depicted.

Urban forest advocates are often challenged to demonstrate the fiscal returns associated with tree installation and maintenance expenses in retail settings. The patronage variables specify consumer behaviors that can potentially enlarge a customer base for districts having trees, potentially generating additional revenues. For instance, greater

travel distances were reported for the with-trees scenarios; an expanded trade area radius within dense urban populations suggests a larger customer pool. In addition, respondents reported greater WTP for parking in vegetated districts; claims of parking revenues lost due to spaces being displaced by trees may be offset by consumers' WTP higher fees in forested districts.

Products Pricing

The last set of response items assessed the nonmarket, nonutility values of trees in retail environments using CVM. Marketers cluster products and services into three general classes (Kinnear et al. 1995). Convenience goods are widely available and purchased with little deliberation. Shopping goods are purchased after planning and comparison and are selectively distributed. Finally, specialty goods have high brand recognition and consumer loyalty; thus, little comparison shopping is done before purchase.

Economists often use indices to investigate market patterns (e.g., the Consumer Price Index "basket of goods"). Respondents were asked to indicate the price they would be willing to pay for each of 15 items. Three index variables were constructed by aggregating stated values for all items within each product index class for each participant (Table 3). Prior to aggregation, outlier values were identified to avoid strategic behavior effects; approximately seven cases per district per product/service item were removed.

Within each district, shopping goods means are greater than convenience goods, with specialty goods commanding the highest stated values. These pricing trends are consistent with marketing literature (Kinnear et al. 1995) in that the goods classes typically contain products of ascending value, quality, and consequently, price.

Means comparisons between scenarios (one-way ANOVA and Bonferroni post hoc tests) disclosed significant differences. Respondents reported WTP less for equivalent goods in business districts without trees. Price differences between tree and no-tree conditions are considerable: Approximately 50% for convenience, 40% for shopping, and 35% for specialty goods. Analysis using weighted standard scores across all products generated a more conservative 11.95% difference between tree and no-tree

conditions. Statistically significant differences demonstrate an "amenity margin" that represents potential revenues for business districts and merchants.

Respondent Comparisons

Given that household samples were drawn from inner-city neighborhoods, an unexpected 45% of respondents had annual household incomes of US$50,000 or greater. Forty-one percent of responding households had two persons, perhaps representing dual-income situations. One-person households tallied at 33%. Regarding shopping frequency for nongrocery goods and services, 40% reported one to two times per week, and 45% indicated less-frequent trips. Age data favored younger people, with 42% in their 40s and 50s, and 42% in their 30s or younger.

Table 2. Scenarios × patronage analysis.

Patronage analysis	No trees (%)	Trad. tree (%)	Mixed veg. (%)
Time willing to travel to reach place?			
(Pearson X^2 = 117.55, p < .000, Cramer's V = .436)			
Less than 10 minutes	56	16	11
10 to 19 minutes	28	40	36
20 to 29 minutes	12	27	31
30 minutes or more	3	17	23
Total	99*	100	101*
	n = 178	n = 165	n = 169
Distance willing to travel?			
(Pearson X^2 = 84.72, p < .000, Cramer's V = .397)			
Less than 1 mile	37	10	8
1 to 5 miles	42	38	34
5 to 10 miles	18	33	36
More than 10 miles	3	19	22
Total	100	100	100
	n = 177	n = 166	n = 169
Time would spend during visit?			
(Pearson X^2 = 134.15, p < .000, Cramer's V = .507)			
up to 30 minutes	61	16	12
30 to 59 minutes	26	36	39
1 to 2 hours	11	32	32
more than 2 hours	2	17	17
Total	100	101*	100
	n = 178	n = 166	n = 169
Frequency of visits?			
(Pearson X^2 = 49.63, p < .000, Cramer's V = .311)			
Once a year or less	26	8	6
Several times a year to monthly	44	35	41
Two to three times per month	13	30	22
Once a week or more	16	27	31
Total	99*	100	100
	n = 160	n = 158	n = 162
Willing to pay to park?			
(Pearson X^2 = 43.98, p < .000, Cramer's V = .288)			
Free	44	29	28
Up to $0.25 per hour	31	21	18
$0.25 to $0.75 per hour	19	29	28
More than $0.75 per hour	6	21	27
Total	100	100	101*
	n = 176	n = 163	n = 167

*Column total percentages may be more than 100 due to rounding.
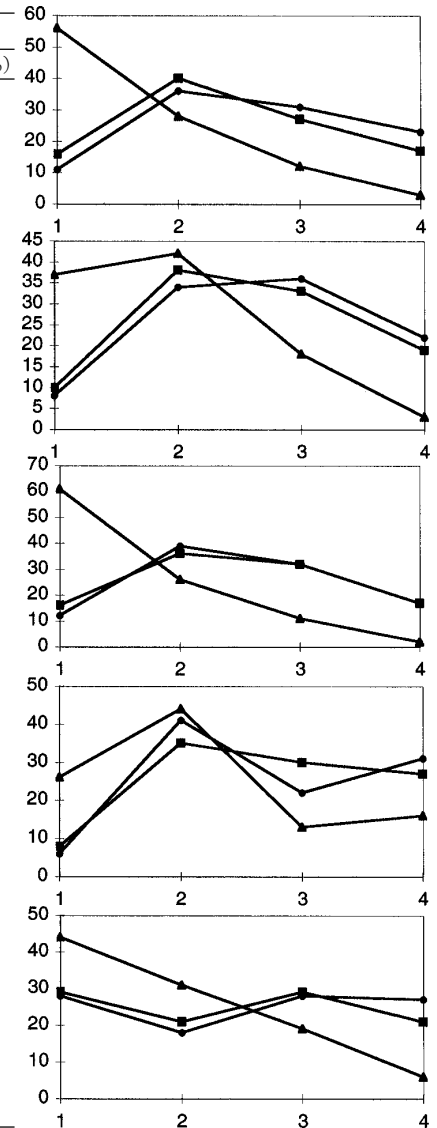
Research methods were designed to generate inferences about diverse urban populations; thus, a probability sample was attempted. Business districts having ethnic population concentrations (e.g., African American, Asian American, or Hispanic) were identified for mailings. Nonetheless, 83% of the respondents were White/Caucasian. Low representation of people of color may be due to the composition of mailing lists or ethnicity-associated nonresponse behavior.

Statistical comparisons of respondent characteristics to perception, patronage, and pricing variables were conducted. No relationships were identified between demographic categories and the perception factors, suggesting that people of diverse age, gender, shopping behavior, and income infer similar perceptual traits about consumer places.

Considering the five patronage variables, it was found that respondents who shop frequently indicated a lower patronage frequency in forested business districts (X^2 = 24.366, df = 9, p < .01); infrequent shoppers favored vegetated settings. Females reported lower frequencies of short-duration visits, while men claimed higher frequencies of short visits within forested shopping settings (X^2 = 16.126, df = 3, p < .001). During pretesting, men claimed to do more focused shopping and less browsing; the behavior may generalize to all shopping experiences.

Of particular interest were respondent characteristics and pricing response. Do respondents, in a hypothetical situation, take into account their ability to pay? Past research suggests that if indicated WTP amounts are nominal, budget constraint bias is minimal and is more evident when major and costly programs or products are valued (Mitchell and Carson 1989). In this study, mean prices for product categories seemed within reasonable ranges. Only convenience goods displayed significant differences in means between household income categories (one-way ANOVA F = 2.455, df = 4,124, p < .05). Specialty goods pricing, most likely to be influenced by income, varied due to number of persons in household (ANOVA F = 3.887, df = 2,121, p < .05), perhaps again reflecting income correspondence.

Finally, comparing cultural groups, Hispanic respondents reported the lowest valuation for specialty goods (ANOVA F = 3.321, df = 3,117, p < .05), an inconclusive result owing to the limited cultural diversity of respondents.

DISCUSSION

Public attitudes about any natural resource issue or topic can span a spectrum from opponents to advocates. Yet the business sector of any community may rely on a narrow range of interests and perceptions as a heuristic base for public dialog on trees in cities. Business peoples' attitudes matter, for the entrepreneurial community can be politically active and influence citywide programs.

Some business communities welcome trees as a consumer-oriented amenity. Yet in many instances, small business owners and managers overlook the contributions of trees to retail success. They focus on the annoyances of trees—reduced signage visibility, seasonal debris, and security issues. Business people can be biased by the situation of a particular tree or two in front of a shop, failing to recognize the districtwide benefits that can be attained by developing a quality urban forest.

This study is a first step in documenting benefits associated with having trees in retail streetscapes. Empirical research can be used to better understand how consumers and the urban forest interact, providing information on both the public value of trees and management practices to optimize returns on public investment. This study used multiple approaches of resource value assessment to understand public response to trees in inner-cities. Consumers value trees, and do so across multiple dimensions.

Streetscape Perceptions and Inferences

Business districts having trees were characterized as being higher in visual quality and comfort, as providing more positive interaction with merchants, as having higher-quality products, and generally appearing to be better maintained and kept up. Such evaluations are reinforced by respondents' claims that they would be willing to travel farther and longer, visit more often and for longer periods of time, and pay more for parking when visiting retail places that have trees.

The discipline of social psychology offers insights for understanding the

Table 3. Product pricing by scenarios.

Index and items	Scenario			
	No trees	Trad. trees	Mixed veg.	ANOVA
Convenience Goods	Mean	Mean	Mean	F = 49.91
Ice cream cone, dinner, flower bouquet,	8.98	13.44	13.78	p < .000, 2 df
lunch sandwich, appointment book	2.74 SD	5.20 SD	5.00 SD	(2, 3 no sig. Δ*)
Shopping Goods	Mean	Mean	Mean	F = 31.11
Sports shoes, watch, light jacket,	33.52	46.43	47.36	p < .000, 2 df
pots and pans, gallon of paint	11.49 SD	16.72 SD	18.54 SD	(2, 3 no sig. Δ*)
Specialty Goods	Mean	Mean	Mean	F = 23.64
Gift for spouse/partner, new glasses,	51.88	69.79	73.24	p < .000, 2 df
art print, motel room	18.30 SD	30.41 SD	30.79 SD	(2, 3 no sig. Δ*)

*Bonferroni post hoc comparison of means, α = 0.017 (0.05/3).

cognitive processes of place-based consumer response. Social psychology is defined by Brehm et al. (1999) as "the scientific study of how individuals think, feel, and behave in regard to other people and how individuals' thoughts, feelings, and behaviors are affected by other people."

Social perceivers assemble various bits of information and, mediated by perceiver dispositions, form impressions of others. Leyens and Fiske (1994, p. 40) note that "people continuously build impression theories and use them in their commerce with other people." Observed traits are the indirect cues used to interpret feelings, personality, character, and likely behaviors. Diverse information about a person is integrated to form a coherent impression and guide decisions about how to interact with a person (Wyer and Lambert 1994). Consequent information and experience will be used by the observer to confirm or modify the impression. Rapid cognitive assessment of others provides a basis for inference and evaluation of new acquaintances.

Built settings apparently evoke similar evaluative responses. Respondents' open-ended scenario descriptors go beyond physical traits and include inferences about social and psychological interactions. Social psychological concepts of "social attribution" and "impression formation" readily translate to consumer/environment interactions.

Public Goods and Local Economics

Many benefits of natural and environmental resources cannot be valued in the marketplace because of incomplete or nonexistent markets. Contingent valuation was used in this study to estimate indirect values of public goods generated by trees in retail settings, values that may offset direct costs (e.g., installation and maintenance) districtwide.

Theoretically, given fixed household income, expressions of WTP represent forgone expenditures on other goods and services in expectation of satisfaction achieved from a public good. The additional 12% or more expressed WTP for goods associated with a vegetated streetscape represents an experiential satisfaction utility that is chosen over that available from other purchases.

Cost–benefit analysis premised on consumer expressed values should be a future research focus. Contingent valuation studies of wildland or open space natural resources typically aggregate WTP statements across a selected population, region, or households to assess nonmarket benefit values (Bateman et al. 1996; Tyrväinen and Väänänen 1998). Comparing direct costs of installation and management of a streetscape to the summed indirect benefits valuation reveals net public goods values and can inform decisions about allocating urban forest resources (Prato 1998).

Several results have important implications for budgeting urban forest programs. For instance, no significant differences were found between the ratings for the *Traditional Trees* and *Mixed Vegetation* districts across all perceptual categories and price indices. This finding suggests that

consumer behavior is most directly influenced by the dichotomy of presence or absence of trees, irrespective of the design detailing and accessory planting. Future research is needed to determine if this finding is consistent with actual behavior or is an artifact of the survey instrument.

CONCLUSIONS

Consumer purchasing represents about two-thirds of the economic activity of the United States. Independent merchants in inner-city neighborhood business districts, once key retail players, now face competitive pressure from regional malls, "big box" retailers, and e-tailers. How does the local merchant preserve or restore his or her slice of the economic pie?

Study results suggest that higher price valuations are mediated by psychological inferences of district character and product quality. Thus, creating and stewarding an urban forest canopy may enhance revenues for businesses in retail districts that offer diverse products at varied prices. Consumer purchases provide compensatory returns for districtwide costs of tree planting and maintenance, as well as revenue enhancement for individual businesses.

While many conditions contribute to perceptions by consumers of attractive, desirable shopping settings, this study suggests that the urban forest should be a central element of retail place. Many marketing studies have focused on the "micro" level of product packaging and placement, or indoor retail configuration. This study contributes information about the "macro" level of consumer perception; that is, the positive influences of the outdoor environment on consumer choice and behavior.

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Résumé. Les programmes de revitalisation sont peu mis en branle dans les zones d'affaires des centres-villes. Un programme de foresterie urbaine peut être un élément important pour créer un environnement de consommation attirant, bien qu'il peut ne pas être considéré comme une priorité étant donné qu'il y a beaucoup de besoins en améliorations physiques. Cette recherche évalue le rôle des arbres dans les interactions consommateurs/ environnement. Une enquête nationale a évalué les percep-tions du public, les intentions de comportement du patronat et le désir de paiement pour un produit, et ce en relation avec une variété d'aménagement avec des arbres le long des rues commerciales. Les résultats suggèrent que le comportement des consommateurs est positivement corrélé avec la présence d'aménagements verts le long des rues, et ce dans toutes ses dimensions cognitives et comportementales. Les résultats de ces recherches établissent également une base de partenariat avec les communautés d'affaire en regard de la planification forestière urbaine et de la gestion.

Zusammenfassung. In vielen innerstädtischen Geschäftsbezirken sind Revitalisierungsprogramme am Wirken. Ein urbanes Forstprogramm kann ein wichtiges Element bei der Gestaltung eines angenehmen Konsumentenumfelds sein, auch wenn oft nicht einer Priorität Raum gegeben wird, dass zunächst physikalische Verbesserungen notwendig sind. Diese Forschung bewertet die Rolle der Bäume in Konsumenten/Umwelt-Interaktionen und fokusiert dabei auf die bezirkweiten Vorteile, die durch öffentlichen Waldbestand geliefert werden. Eine nationale Untersuchung bewertete die Öffentlichkeitsakzeptanz, Intentionen für Patenschaftsverhalten und Zahlungs-willigkeit in Relation zu verschiedenen Baumstandorten in Geschäftsstraßenzügen. Die Ergebnisse verdeutlichen, dass das Konsumentenverhalten positiv korreliert ist mit Straßenbegrünungenm in allen kognitiven und Verhaltens-dimensionen. Die Ergebnisse etablieren auch eine Basis für Partnerschaften mit Geschäftsbezirken in Bezug auf Forstpflanzung und Management.

Resumen. Los programas de rehabilitación son poco conocidos en muchos distritos de negocios urbanos. Un programa dasonómico urbano puede ser un elemento importante para la creación de un ambiente favorable para el consumidor. Aunque no son considerados como una prioridad requieren un mejoramiento físico. Esta investigación evalúa el papel de los árboles en las interacciones ambiente / consumidor, poniendo énfasis en los beneficios públicos provistos por la comunidad forestal. Un sondeo nacional evaluó las percepciones del público, los patrones de comportamiento y la buena voluntad para pagar por los productos con relación a la presencia de los árboles en paisajes urbanos. Los resultados sugieren que el comportamiento del consumidor está positivamente relacionado con el enverdecimiento de las calles en todas esas dimensiones cognitivas y de comportamiento. La investigación también sugiere bases para patrocinios en comunidades de negocios con relación a la planeación y manejo del bosque urbano.