

Evaluating the Role of Ethnicity on Gardening Purchases and Satisfaction

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Abstract. In Sept. 2004, an Internet study was conducted to evaluate and determine differences in gardening participation, purchases, and levels of satisfaction and regret by ethnic background. Consumers were asked to identify their participation in seven gardening activities and about the purchase of 12 gardening product categories. The sample was stratified by income and age. The number of differences in garden-related activity participation and purchases decreased as income level increased across ethnic groups. At every income level, persons of Caucasian descent had a higher satisfaction average score and factor score and higher regret mean score and factor score. This indicated that Caucasians did experience greater satisfaction and less regret than persons of other ethnic backgrounds, regardless of income. For marketers, this shows a heterogeneous market at lower-income levels and a more homogeneous market at upper-income levels. Ethnicity could be used as a basis for market segmentation, and differences are indeed present.

Consumer participation in gardening and purchases of garden-related products are often described demographically. Researchers correlate income, age, gender, and home value with the likelihood of consumer participation and or purchases. Organizations, such as the National Gardening Association (NGA), track consumer demographic information and purchasing statistics including annual retail sales and the rate of growth in participation for selected gardening activities. The NGA's 2004 study showed lawn and garden retail sales totaled \$38 billion in 2003, with 84 million households participating in lawn and garden activities (Butterfield, 2004). Despite Americans spending \$38 billion on lawn and garden purchases, sales have leveled off since 2003. In 2003, Americans spent on average \$457 on lawn and garden materials, down from \$466 in 2002. The most popular gardening activities included landscaping (\$317), lawn care (\$186), water gardening (\$115), and tree care (\$112). However, when the compound annual growth rate of money spent on lawn and garden activities from 1998 to 2003 was examined, activities for which spending actually decreased included lawn care (–0.4%), flower gardening (–5.7%), indoor houseplants (–3.3%),

vegetable gardening (–7.7%), shrub care (–12.7%), insect control (–3.6%), tree care (–5.0%), landscaping (–1.2%), container gardening (–9.1%), raising transplants (–5.0%), and water gardening (–12.0%). Some of this decrease may be attributed to the use of maintenance services, such as mowing and fertilizing services for lawn care, or to increased knowledge in controlling and containing insects. However, the decrease in dollars spent on 11 of the 16 categories listed could signal a greater challenge in the lack of fascination of gardening by some American consumers. Given changes in the demographic characteristics of the American population, are there some differences by age, income, and ethnicity that show a shift in consumers who are interested in gardening? Could previous regretful or dissatisfying gardening experiences cause consumers to spend their money elsewhere?

Demographic changes. Peter Drucker, management guru, commented that changes in demographics are one of the easiest population trends on which to capitalize, yet few business managers do. "Managers have known for a long time that demographics matter, but they have always believed that population statistics change slowly. In this century, however, they don't. Indeed, the innovation opportunities made possible by changes in the numbers of people—and in their age distribution, education, occupations, and geographic location—are among the most rewarding and least risky of entrepreneurial pursuits" (Drucker, 2002).

Demographic information such as population statistics and ethnicity can be accessed from the United States' Census. Information

from the 2000 census reported there were 281 million U.S. residents. Of the 281 million U.S. residents, 75% were classified as Caucasian, 12.3% were classified as African-American, 12.5% were classified as Hispanic or Latino, and 3.5% were classified as Asian (Table DP-1, Census 2000; U.S. Census Bureau, 2000). Although the majority of Americans fall into the Caucasian category (75%), there is still room to create loyalty and competitive advantages by focusing on underserved or niche markets. In this case, the minority population accounts for 25% of the United States' population.

The Hispanic consumer group is larger than the entire population of Canada and grew at the fastest rate of any ethnic group in the United States (U.S. Census Bureau, 2004).

Americans are also aging as an aggregate population. In 2000, 12.4% of the population was 65 years of age or older with projections of 13% by 2010. In 2000, 28.5% of the U.S. population was under 20 years of age. In 2010, the percentage is expected to decline to 26.9% (U.S. Census Bureau, 2004). Census numbers and projections estimate the most dramatic changes will occur in the middle age groups. In 2000, 22.1% of the population was between the ages of 45 and 64 years. By 2010, that percentage will increase to 26.2%.

One popular notion is that persons from higher-income households participate to a greater extent in gardening activities than do persons from lower-income households, with those households making \$50,000 or more being acknowledged as those more likely to participate in lawn and garden purchases (Butterfield, 2004). The median U.S. income in 2002 was \$42,409 with differences observed in median income level by ethnicity (U.S. Census Bureau, 2004). Median income was highest for Asian and Pacific Islanders (\$52,285) and lowest for African-Americans (\$29,177). Caucasians had a higher median income (\$44,964) than did Hispanics (\$33,103). A similar pattern was observed in home values. Median home value in 2000 was \$119,600 (U.S. Census Bureau, 2005). For Asians, it was \$199,300, but for African-Americans it was \$80,600. Caucasians owned homes with a median value of \$122,800 while Hispanics owned homes with a median value of \$105,600.

Demographic information for gardening activities has generally focused on gender, income, and home value, excluding race and ethnicity. However, census information clearly shows differences in demographics. The objective of this paper is to examine whether differences exist in a few mainstream gardening activities according to several demographic variables, including ethnicity, age, and income. Because repeat purchasing is a function of a satisfied experience, satisfaction, delight, regret, and dissatisfaction are also examined across variables to determine whether differences exist to justify separate marketing strategies for ethnic segments or whether a homogeneous strategy would reach all customers equally effectively.

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Satisfaction is a measure of consumer's expectations and performance of a particular product. It is generally attributed to the consumer's fulfillment response (Oliver, 1997). Consumers make judgments about a product or service feature, or the product or service itself, evaluating the performance received against their prior expectations. This standard comparison results in three outcomes: performance largely exceeding expectations (delight), performance meeting and exceeding expectations at a certain threshold level (satisfaction), or performance failing to meet expectations (dissatisfaction). Consumers who are satisfied or delighted tend to purchase products again. However, those that are dissatisfied or regretful tend to switch to other activities or out of gardening altogether (Dennis et al., 2004). Regret is differentiated from dissatisfaction as a cognitive emotion, brought on by consumers blaming themselves about their failed outcome, that accelerates switching to another product or industry when gardening experiences are not favorable for the consumer (Dennis, 2004). Hicks et al. (2005) showed that delight, the positive cognitive emotion, was a better predictor of repeat purchases than satisfaction measures. Retailers need to minimize the level of customer regret and maximize the level of delight to improve the likelihood of customers returning to make subsequent purchases.

Materials and Methods

In Sept. 2004, a survey was conducted by Knowledge Networks (Calif.) to determine the gardening participation, purchases, and attitudes of a representative sample of Americans. They drew a sample representative of the U.S. population on average, but oversampled for three ethnic groups: African-Americans, Hispanics, and Asians. Responses totaled 1610, of which 1591 complete responses were used in analyses.

We asked participants questions about their participation in seven gardening activities within the last year: mowing the lawn; gardening with annuals or perennials (flower gardening); gardening with trees or shrubs; gardening with fruits, vegetables, or herbs; water gardening; control of pests, insects, or weeds; or another gardening activity. They were asked in separate questions if (a) they personally participated in the activity and (b) whether another adult in the household participated in the activity. In other questions, they were asked about household purchases of 12 products: annuals and perennials; trees and shrubs; vegetables, fruit trees or plants, or herbs; water garden plants; composting devices or implements; motorized tools; non-motorized tools; seeds; pest control supplies; fertilizer; garden sculpture or art, garden furniture; and other gardening purchases. They were also asked questions about their level of satisfaction, regret, and delight with their purchases. The instrument was pretested using 50 subjects and approved before testing

or implementation by the university committee on research involving human subjects.

All analyses were conducted by SPSS. Evaluation of reliability and validity of multiple measure constructs was performed using confirmatory factor analysis (CFA) and Cronbach's α . All constructs were measured with 7-point Likert scales. All reliability values exceeded Nunnally's (1978) lower threshold of 0.70 for such scales.

CFA was conducted to assess the reliability and validity for satisfaction, regret, and race used in each model and to also create factor scores to reduce and analyze the data. Satisfaction and regret were measured using four items, each with alpha values of 0.980 and 0.986, respectively. Factor scores derived from the CFA were then used to conduct *t* tests. Factor scores are used as a form of data reduction by compiling overlapping information contained in the correlations among variables and extracting core information into a few factors (Churchill and Iacobucci, 2002). These scores were then used in subsequent analyses to test differences in the scores between variables.

Results and Discussion

Sixty-four percent of the sample owned a home, while 31% reported renting a home and 5% did not pay for housing. A greater percentage of Caucasians owned their home (75.1%) compared with African-Americans (40.5%), Hispanics (53.3%), and persons of Asian descent (59.5%) ($\chi^2 = 132.015$, $P = 0.000$). Participation in gardening activities was higher for homeowners (data not shown), so renters and those not paying for housing were excluded from the analyses. Thus, 1024 responses were kept for additional analyses.

Income varied by ethnic background. A greater percentage of persons of Asian descent had a household income greater than \$75,000 in 2003 (26.6%) compared with Caucasians (14.8%), African-Americans (7.8%), and Hispanics (10.0%) ($\chi^2 = 100.471$, $P = 0.000$). With differences in income, we stratified the remaining sample creating four income groups: (a) household income less than \$25,000, (b) \$25,000 to \$49,999, (c) \$50,000 to \$74,999, and (d) greater than \$75,000. Gardening activity participation and purchases were compared among these four income groups.

Among those homeowners with a 2003 household income less than or equal to \$25,000, two differences in gardening-related activities and four differences in garden-related purchases (Table 1). A greater percentage of Asians participated in gardening with fruits, vegetables, and herbs compared with African-Americans. A greater percentage of Hispanic persons participated in outdoor water gardening compared with Caucasians, African-Americans, and Asians. No persons of Asian descent purchased trees or shrubs, but substantially more persons of Hispanic descent did, compared with Caucasians and African-Americans.

The greatest differences in household purchases occurred in the less than \$25,000 income group. A similar percentage of homeowners from different ethnic backgrounds with household income less than or equal to \$25,000 cared for their own lawn (69.5%, $P = 0.624$), gardened with annuals and perennials (43.2%, $P = 0.915$), gardened with trees and shrubs (43.2%, $P = 0.520$), gardened with fruits, vegetables, and herbs (38.4%, $P = 0.846$), controlled pests (50.5%, $P = 0.681$), gardened indoors with flowering or foliage plants (42.6%, $P = 0.441$), or had an outdoor water garden (31.6%, $P = 0.661$). A similar percentage of those individuals purchased annuals or perennials (50.5%, $P = 0.125$), composting devices (13.2%, $P = 0.125$), herbs and vegetables (27.9%, $P = 0.081$), bulbs (23.2%, $P = 0.081$), fertilizer (40.5%, $P = 0.168$), non-motorized tools (20.5%, $P = 0.135$), and garden furniture (8.9%, $P = 0.091$).

Among those homeowners with a household income between \$25,000 and \$49,999, we found only one difference: a greater percentage of Caucasians purchased annuals, compared with African-Americans (Table 1). Other activities and purchases were similar among ethnic groups. We again saw only one difference among homeowners with a household income between \$50,000 and \$74,999 (Table 1). Very few African-Americans had another person in the household participate in water-gardening activities, but ten times more Hispanics had another person in the household participate in water-gardening.

Two differences emerged in comparisons between ethnic groups among homeowners with a household income greater than \$75,000 (Table 1). Compared with the other ethnic groups, fewer African-Americans had another person in the household engage in pest control and purchased pest control supplies.

Satisfaction and regret scores were compared between homeowners of different ethnic backgrounds, stratified by income (Table 2). A one-sample *t* test was conducted based on satisfaction and regret factor scores and the ethnicity variable. Satisfaction and regret factor scores were analyzed using a *t* test after filtering for race (Caucasian, African-Americans, Hispanics, and Asians). The *t* test showed Caucasian ($t = 5.268$, $P = 0.000$) and African-Americans ($t = -6.060$, $P = 0.000$) had a significant difference in their dissatisfaction scores. Hispanics and Asians were dissatisfied but not significantly from their Caucasian counterparts. In fact, Caucasian consumers were satisfied as shown with their positive mean score of 0.179. African-Americans, Hispanics, and Asians were on average dissatisfied with their most expensive purchases. When looking at regret scores, all ethnic groups were significantly different in the level of regret experienced showing there is a difference in the levels of regret based on ethnicity as a segmentation variable. At every income level, persons of Caucasian descent had a higher satisfaction average score and factor score, and higher regret mean score and factor score.

Table 1. Percentage of homeowner survey respondents from four ethnic backgrounds, stratified by 2003 household income, who participated in garden-related activities and made purchases of garden-related products.

Income <\$25,000	Ethnic group				Significance (<i>P</i> level)
	Caucasian (n = 122)	African-Amer. (n = 28)	Hispanic (n = 25)	Asian (n = 15)	
Activities					
Garden with fruits, vegetables (other person in household)	27.0%	3.6%	32.0%	33.3%	0.039
Outdoor water gardening (other person in household)	16.4%	14.3%	48.0%	26.7%	0.004
Purchases					
Trees and shrubs	13.9%	10.7%	36.0%	0.0%	0.004
Seeds	31.1%	14.3%	52.0%	13.3%	0.015
Motorized tools	12.3%	14.3%	4.0%	0.0%	0.034
Pest control	41.0%	32.1%	28.0%	33.3%	0.044
Income \$25,000 to \$49,999 (n = 209)		(n = 38)	(n = 56)	(n = 28)	
Purchases					
Annuals and perennials	8.4%	36.8%	42.9%	42.9%	0.034
Income \$50,000 to \$74,999 (n = 150)		(n = 22)	(n = 34)	(n = 28)	
Outdoor water gardening (other person in household)	23.3%	4.5%	41.2%	32.1%	0.014
Income >\$75,000 (n = 151)		(n = 16)	(n = 29)	(n = 61)	
Activities					
Pest control (other person in household)	55.6%	18.8%	48.3%	52.5%	0.045
Purchases					
Purchased pest control	58.9%	37.5%	44.8%	47.5%	0.020

Table 2. Satisfaction and regret scores by income and ethnicity.

	Satisfaction		Regret	
	Mean score	Factor score	Mean score	Factor score
Income <\$25,000				
Caucasian	0.140*	1.961	0.148*	2.077
African-American	-0.572*	-7.16	-0.575*	-7.10
Hispanic	-0.289*	-2.78	-0.293*	-2.77
Asian	-0.217 ^{NS}	-1.52	-2.65 ^{NS}	-1.87
Income \$25,000 to \$49,999				
Caucasian	0.179*	3.01	0.203*	3.44
African-American	-0.299*	-2.72	-0.279*	-2.49
Hispanic	-0.02 ^{NS}	-0.229	-0.02 ^{NS}	-0.204
Asian	-0.152 ^{NS}	-1.29	-0.156 ^{NS}	-1.32
Income \$50,000 to \$74,999				
Caucasian	0.214*	3.05	0.204*	2.95
African-American	-0.093*	-0.504	-0.139 ^{NS}	-0.771
Hispanic	-0.204 ^{NS}	-1.40	-0.182 ^{NS}	-1.22
Asian	-0.146 ^{NS}	-0.96	-0.228 ^{NS}	-1.59
Income ≥\$75,000				
Caucasian	0.175*	2.46	0.194*	2.72
African-American	-0.004 ^{NS}	-0.19	-0.030 ^{NS}	-0.144
Hispanic	0.139 ^{NS}	0.857	0.056 ^{NS}	0.349
Asian	0.044 ^{NS}	0.372	0.027 ^{NS}	0.233

^{NS}Nonsignificant at the $P \leq 0.05$ level.

*Significant at the $P \leq 0.05$ level.

This indicated that they did experience greater satisfaction and less regret than persons of other ethnic backgrounds, regardless of income. At the lower income levels, homeowners of African-American descent showed less satisfaction and more regret, compared with Caucasian homeowners. At the highest income level, differences nearly disappeared among persons of different ethnic backgrounds.

Comparisons between age groups. A one-way ANOVA with income and age showed there was a significant difference in income by age ($F = 2.72$, $df = 18$, $P = 0.000$). We again stratified the sample into four income groups and divided the sample into four age groups: 18–29 years; 30–44 years; 45–59 years; and greater than 60 years. Comparisons in activity participation and purchases between age groups by income were made

(Table 3). We saw five differences in activity participation at income less than or equal to \$25,000 and three differences in purchases. The youngest homeowners (ages 18–29) had a higher percentage of people who cared for the lawn and landscaped the yard by another person in the household. The percentage increased somewhat for homeowners aged 30–44 years, decreased for homeowners aged 45–59 years, and then declined again for the oldest age group. A similar trend was seen for herb and vegetable gardening, both by the respondent and another person in the household, and for pest control.

No differences were found in the percentage of homeowners gardening with annuals and perennials (data not shown; 63.2%, $P = 0.499$), landscaping with trees and shrubs (43.0%, $P = 0.476$), pest control

(50.3%, $P = 0.580$), or water gardening (31.6%, $P = 0.376$).

Three differences were seen in the percentage of homeowners with 2003 household income less than or equal to \$25,000 who made purchases of herbs and vegetables, fertilizer, and garden furniture (Table 1). A higher percentage of households with older persons (age 60 and older) bought herbs and vegetables and fertilizer compared with younger households. None of the homeowners in this income category ages 18–29 and 30–44 made a purchase of garden furniture.

Fewer differences in gardening activity participation were seen among the four age groups for the income group \$25,000 to \$49,999. A smaller percentage of homeowners ages 18–29 used pest control and gardened with indoor flowering or foliage plants. The greatest level of participation was in the oldest household group (age ≥60 years). However, four differences in garden-related purchases were observed. In each of those differences, the greatest percentage of purchases was made in the age group ≥60 years. Homeowners ages 18–29 had the lowest percentage of purchases for fertilizer and pest controls. They had the second-lowest percentage of purchases for annuals and perennials.

At the income level \$50,000 to \$74,999, fewer differences were observed in both the percentage of persons participating in garden-related activities and purchases. Nearly twice the percentage of homeowners ages ≥60 years gardened with annuals and perennials, compared with the youngest age group. Nearly twice the percentage of homeowners ≥60 years purchased herbs and vegetables. However, more homeowners ages 18–29 purchased pest controls compared with homeowners ages 30–44 years old.

At the highest income category (≥\$75,000), only three differences were

Table 3. Percentage of homeowner survey respondents from four age groups, stratified by 2003 household income, who participated in garden-related activities and made purchases of garden-related products.

Income <\$25,000	Age group (yr)				Significance (<i>P</i> level)
	18–29 (n = 23)	30–44 (n = 35)	45–59 (n = 59)	≥60 (n = 76)	
Activities					
Lawn care (other person in household)	69.6%	34.3%	49.2%	35.5%	0.016
Landscape (other person in household)	56.5%	11.4%	27.1%	31.6%	0.003
Herb gardening	17.4%	37.1%	28.8%	52.6%	0.004
Herb gardening (other person in household)	43.5%	11.4%	27.1%	22.4%	0.043
Pest control (other person in household)	56.5%	20.0%	28.8%	30.3%	0.028
Purchases					
Herbs and vegetables	30.0%	31.8%	29.3%	54.4%	0.050
Fertilizer	50.0%	54.5%	41.5%	75.4%	0.007
Garden furniture	00.0%	00.0%	26.8%	13.1%	0.008
Income \$25,000 to \$49,999	(n = 25)	(n = 73)	(n = 76)	(n = 74)	
Activities					
Pest control	30.8%	55.9%	54.5%	55.9%	0.038
Indoor flower gardening	23.1%	35.3%	48.5%	54.8%	0.002
Purchases					
Annuals and perennials	64.0%	60.3%	65.8%	83.8%	0.012
Fertilizer	32.0%	69.9%	53.9%	64.9%	0.005
Compost device	36.0%	12.3%	14.5%	32.4%	0.003
Pest control	48.0%	74.0%	56.6%	73.0%	0.017
Income \$50,000 to \$74,999	(n = 28)	(n = 104)	(n = 101)	(n = 67)	
Activities					
Garden with annuals or perennials	31.2%	60.6%	64.4%	67.2%	0.010
Purchases					
Herbs and vegetables	15.8%	32.0%	32.2%	37.7%	0.014
Pest control	78.9%	56.0%	72.4%	76.0%	0.005
Income >\$75,000	(n = 16)	(n = 66)	(n = 85)	(n = 29)	
Activities					
Pest control	43.8%	56.1%	38.8%	65.5%	0.045
Purchases					
Annuals and perennials	12.5%	63.3%	79.4%	69.2%	0.001
Non-motorized tools	00.0%	38.8%	52.9%	23.1%	0.004

observed. A higher percentage of homeowners ages ≥60 used pest controls, compared with the younger age groups. Four times more persons ages ≥60 years purchased annuals and perennials, compared with homeowners ages 18–29. More homeowners ages 45–59 purchased non-motorized tools compared with all other age groups. None of the homeowners in this income category ages 18–29 purchased non-motorized tools.

Satisfaction and regret scores for the four age groups were compared, again stratified by income level (Table 4). Generally, younger homeowners had lower satisfaction and regret scores, regardless of income level. Older homeowners had higher satisfaction and regret scores.

Conclusion

The number of differences in garden-related activity participation and purchases decreased as income level increased, both across ethnic and age groups. For marketers, this shows a heterogeneous market at lower-income levels compared with upper-income levels. Generally, persons of African-American descent participated in garden-related activities to a lesser extent than persons of other ethnic backgrounds. They also showed a lower level of satisfaction and more regret than their counterparts in all income categories. Especially at lower-income levels, there are gardening differences by ethnic heritage. Ethnicity could be used as a basis for market segmentation, and

Table 4. Satisfaction and regret scores by income and age.

	Satisfaction		Regret	
	Mean	Factor score	Regret mean	Factor score
Income <\$25K				
18 to 29 years	-0.340*	-3.84	-0.390*	-4.57
30 to 44 years	-0.361*	-3.73	-0.363*	-3.72
45 to 59 years	-0.109 ^{NS}	-1.14	-0.099 ^{NS}	-1.02
≥60 years	0.117 ^{NS}	1.32	0.145 ^{NS}	1.61
Income \$25K to \$49K				
18 to 29 years	-0.267*	-2.85	-0.264*	-2.83
30 to 44 years	-0.068 ^{NS}	-0.97	-0.071 ^{NS}	-0.95
45 to 59 years	0.079 ^{NS}	0.918	0.119 ^{NS}	1.37
≥60 years	0.428*	4.74	0.454*	5.23
Income \$50K to \$74K				
18 to 29 years	-0.449*	-3.57	-0.447*	-3.52
30 to 44 years	0.013 ^{NS}	0.145	0.006 ^{NS}	0.061
45 to 59 years	0.181 ^{NS}	1.83	0.115 ^{NS}	1.19
≥60 years	0.464*	3.63	0.493*	3.97
Income ≥\$75K				
18 to 29 years	-0.320*	-2.38	-0.374*	-2.84
30 to 44 years	0.094 ^{NS}	0.993	0.070 ^{NS}	0.752
45 to 59 years	0.184*	2.03	0.185*	2.03
≥60 years	0.483*	3.89	0.559*	4.46

^{NS}Nonsignificant at the *P* ≤ 0.05 level.

*Significant at the *P* ≤ 0.05 level.

differences are indeed present. This could be a result of different ethnic groups having common characteristics and perceptions about gardening. For example, it could be the case that a great deal of African-Americans and Hispanics are most comfortable with vegetable gardening as a way to produce vegetable crops than flower gardening. This may indicate a need for greater advice and communication about flower gardening practices or a better use of positioning vegetable

gardening. If Caucasian consumers are the most targeted consumer and the variability of knowledge and education varies for these mainstream customers, imagine the same frustration with the variability of other ethnic consumers. More could be done to improve the level of satisfaction and reduce regret among non-Caucasian customers.

More differences were observed among homeowners in lower-income groups compared with higher-income groups across all

age groups. Generally, older homeowners participated in more garden-related activities and made more garden-related purchases, with some exceptions, across all income levels. For an aging American population, this finding may be encouraging for some and disconcerting for others. The first Baby Boomer reached age 60 in 2006, an age at which some may contemplate retirement. These results show homeowners ≥ 60 years of age garden and make garden-related purchases to a great extent. The level of satisfaction is highest among homeowners in this age group. Thus, there is an indication that as Baby Boomers retire, their gardening passions may change but continue. However, younger homeowners are not as likely to be involved in garden-related activities and make garden-related purchases as their older counterparts. The level of satisfaction is lower and the level of regret higher among younger homeowners. Recruiting the next generation of American gardeners may be a challenge. Understanding reasons for the lack of participation and purchases becomes critical as the population ages. Are purchases not being made because other hobbies and interests capture the discretionary dollars?

For garden-related retailers, these findings indicate the importance of understanding the demographic composition of the market area served, particularly the income

level. Retailers serving lower-income groups may be more effective in reaching customers by segmenting the market by age and ethnicity. Retailers serving upper-income groups may be equally effective with less emphasis on market segmentation. Demographic information is available on-line, both free and for purchase by several companies. Demographic characteristics are easily obtained for most markets. Results here show that they can be a useful group of consumer variables to monitor.

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