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The Consumer Choice of Market for Fresh Fruits: A Study of Attitudinal Factors and Market Attributes

Juliano M.R. Marques^a, Ariana P. Torres^b®, Bridget K. Behe^c, Petrus Langenhoven^d, and
Luiz Henrique de Barros Vilas Boas^e

^a*Visiting Researcher, Department of Horticulture and Landscape Architecture,
Purdue University,
625 Agriculture Mall Drive,
West Lafayette, IN 47907, USA*

^a*Graduate Student, Department of Administration and Economic,
Lavras University (UFLA),
Cx Postal 37 Campus Universitario 37200000, Lavras, MG, Brazil*

^b*Assistant Professor, Department of Horticulture and Landscape Architecture and of Agricultural Economics,
Purdue University,
625 Agriculture Mall Drive,
West Lafayette, IN 47907, USA*

^c*Professor, Department of Horticulture,
Michigan State University,
1066 Bogue Street, East Lansing, MI 48824, USA*

^d*Horticulture/Hydroponic Crop Specialist,
Department of Horticulture and Landscape Architecture,
Purdue University,
625 Agriculture Mall Drive,
West Lafayette, IN 47907, USA*

^e*Visiting Researcher, Department of Horticulture and Landscape Architecture,
Purdue University,
625 Agriculture Mall Drive,
West Lafayette, IN 47907, USA*

^e*Professor, Department of Administration and Economic,
Lavras University (UFLA),
Cx Postal 37 Campus Universitario 37200000, Lavras, MG, Brazil*

®Corresponding author:

Tel: (765) 494-8781
Email: torres2@purdue.edu

Abstract

This study proposes that market attributes and consumer attitudes drive the decision to choose the main marketplace to purchase fresh fruits, defined as the first step in the consumer purchasing behavior. From a survey of 1,658 Americans, we categorized respondents as those purchasing most fresh fruits at chain stores (66%), club/warehouse stores (5%), independent grocery stores (18%), and DTC markets (11%). Results from a multinomial logit regression showed fresh fruit prices was the main attribute of purchasing at chain stores, and a major barrier for independent stores. Atmosphere and access to local fruits was the main attribute for farmers markets.

Keywords: fresh fruit, marketing, product differentiation, attitudinal factors, market channel

Introduction

The growing consumption of produce, motivated by increasing demand for healthy and environmentally friendly foods, has impacted the U.S. supply chain of fresh fruits. Farmers, food retailers, and grocery stores have adopted various product differentiation strategies to appeal to fresh fruit consumers (Brunori et al., 2016). One example of these strategies is the use of food labels (Turnwald and Crum, 2019) that convey nutrition, origin, and production attributes (Torres, 2020), as well as procedures adding value to fresh fruits (Low et al., 2020).

Changes in lifestyle and consumption patterns make consumers increasingly diverse and less predictable (Freire and Rudkin, 2019). To address changes in consumer demand, several researchers have investigated the attributes influencing buying behavior and consumption of fresh fruits. Fresh fruit purchases can be driven by search (e.g., price), experience (e.g., sweetness), and credence attributes (e.g., local) (Torres, Langenhoven, and Behe, 2020). The boost in fresh fruit sales, the proliferation of food labels, and the increasing number of market channels drive the need to further investigate consumer decision making when buying fresh fruits (Lenk et al., 2018).

While most research has focused on product attributes' importance in the purchase of fresh fruits, more recently, researchers have linked marketplace selection as a first step in the consumer decision-making process. Gindi et al. (2018) proposed that fresh fruit purchases follow a hierarchical process in which the selection of a marketplace is the first decision to determine purchasing behavior. Thus, we expect that before a consumer chooses what and how much fruit to buy, they first decide where to make the purchase. In this study, we propose that different market attributes and consumer attitudes can drive the decision to choose the main marketplace to purchase fresh fruits.

This study takes a step back from the product attribute and labeling literature to understand how marketplace attributes and consumers' attitudinal factors influence the choice of market for fresh fruit purchases. Market attributes include the market availability, the availability of desirable fresh fruits, prices, market proximity, fresh fruits selection, friendliness of market, convenience, the supply of locally grown fruits, the supply of organic fruits, access of seasonal fruits, and variety of fresh fruits.

Attitudes play a key role in consumer choice (Roininen et al., 2001; Verneau et al., 2016). Torres, Langenhoven, and Behe (2020) reported on the consumer attitudes guiding fresh fruit consumption. They used four widely used attitudinal scales to understand consumer choices for fresh fruits: general health interest (GHI), craving for sweet foods (CSF), food pleasure (FP), and variety-seeking foods (VSF) scales. The GHI scale indicates consumer preferences for health-related attributes (Roininen et al., 2001). Consumers relate sweetness (CSF) as a desirable fresh fruit attribute (Saba et al., 2019). The food pleasure scale has been associated with a better nutritional status or a greater food intake (Davidenko et al., 2015). Finally, the search for variety in foods (VSF) has been correlated with an increase in fruit consumption (Van Trijp and Steenkamp, 1992; Nakagawa and Kotani, 2017).

The objective of this study is to investigate how market attributes and four attitudinal scales influence consumers' choice of the main marketplace for fresh fruits. Marketplaces included national chain stores, club stores or warehouses, independent or local grocery stores, and direct-to-consumer (DTC) markets. Chain stores included large traditional grocery stores, such as Walmart, Payless, and Meijer. Club stores included wholesale warehouses selling products in bulk quantities, such as Costco and Sam's Club. Independent grocery stores included independent, ethnic, and natural grocery stores. Lastly, DTC markets included farmers markets, roadside stands, on-farm, and community-supported agriculture (CSAs).

Data and Methodology

We used a web-based survey of fresh fruit purchasers to obtain data for this study. The survey was distributed by LightSpeed GMI (Bridgewater, NJ) in late summer and early fall 2018, and was to be representative of the U.S. population on age, gender, and pretax income (based on 2017 census estimates). The study sample was composed of 1,658 valid respondents. To better understand the choice of marketplace for fresh fruits, we categorized respondents into four groups: those purchasing most fruit at chain stores (66%; $N = 1,095$), club/warehouse stores (5%; $N = 85$), independent grocery stores (18%; $N = 304$), and DTC markets (11%; $N = 174$).

We asked respondents to identify the importance they placed on market attributes when purchasing fresh fruits. Market attributes were measured on a scale varying from 0 to 100 from "not at all important" to "extremely important." Attitudes were measured by attitudinal scales, including the GHI, FP, CSF, and VSF on a 5-point Likert scale varying from "strongly disagree" (1) to "strongly agree" (5). To uncover the most salient attitudinal factors influencing market choice, researchers conducted a principal component analyses (PCA) on the scales using the MEANS, FACTOR, and CORR procedures available in SAS (SAS Institute Inc., 2017).

The questionnaire asked for demographic characteristics, including gender, age, marital status, educational attainment, annual household income, geographic location, household size, number of children, and ethnicity. Researchers also asked questions regarding purchasing and consumption behavior, including the number of miles traveled to the marketplace, monthly expenditures on fresh fruits, and the person responsible for purchasing most fruits in the household. Respondents were geographically grouped according to categorization from the Bureau of Labor Statistics into Northeast, South, Midwest, and West regions.

Researchers computed multiple mean comparisons using analysis of variance (ANOVA) tests and Tukey's honestly significant difference method at the 10% significance level. Given the unordered and discrete nature of the marketplace categories and the attitudinal factors, a robust multinomial logit regression was performed to understand what factors influence the choice of marketplace among fresh fruit consumers. The multinomial logit model describes a consumer's choice when they are faced with a variety of markets; yet, the markets are likely to be highly differentiated by an individual's attitudinal scales and market attributes. Analyses were conducted using Stata (StataCorp, 2019).

Results and Discussion

Table 1 describes the explanatory variables and mean differences for all the variables, by marketplace type. The two most valued market attributes were fresh fruit selection (74% of importance) and the market price (70% of importance). Other markets' attributes were seasonal fruits availability (65% of importance), closeness to home (62% of importance), friendliness of atmosphere (58% of importance), availability of local fruits (55% of importance), only place offering the fresh fruits consumers want (49% of importance), and availability of organic fruits (44% of importance). Related to the consumers' attitudinal scale, those purchasing at club and independent stores rated higher on the FP scale in comparison to those purchasing fresh fruits at chain stores and DTC markets ($P < 0.1$).

Table 1. Descriptive Statistics of the Demographic, Purchase Characteristics, Market Attributes, and Attitudinal Scales Variables for the Four Market Channels of 1,658 U.S. Respondents Participating in an Online Survey about the Choice of Marketplace

Variable	Mean (SD)									
	Full Sample N = 1,658		Chain N = 1,095		Club N = 85		Independent N = 304		DTC N = 174	
Female	0,47 (0,50)	0,47 (0,50)	AB	0,35 (0,48)	B	0,54 (0,50)	A	0,38 (0,49)	B	
Single	0,38 (0,48)	0,37 (0,48)		0,37 (0,49)		0,36 (0,48)		0,45 (0,50)		
College	0,56 (0,50)	0,56 (0,50)		0,66 (0,48)		0,43 (0,50)		0,41 (0,49)		
Income	5,59 (2,33)	5,51 (2,32)	B	6,33 (2,39)	A	5,65 (2,23)	AB	5,69 (2,43)	AB	
Age	45,35 (16,78)	45,76 (16,74)		42,93 (16,36)		45,81 (17,26)		43,14 (16,20)		
Live in rural area	0,22 (0,42)	0,22 (0,42)	A	0,09 (0,29)	B	0,25 (0,43)	A	0,25 (0,44)	A	
Household size	4,28 (1,45)	4,27 (1,43)	AB	4,62 (1,68)	A	4,28 (1,47)	AB	4,14 (1,41)	B	
Number children in household	1,50 (0,92)	1,51 (0,92)	AB	1,71 (1,20)	A	1,41 (0,89)	B	1,49 (0,83)	AB	
Live in Midwest	0,23 (0,42)	0,23 (0,42)	B	0,18 (0,38)	BC	0,30 (0,46)	A	0,15 (0,36)	C	
Live in West	0,18 (0,38)	0,17 (0,38)	B	0,35 (0,48)	A	0,18 (0,39)	B	0,12 (0,33)	B	
Live in South	0,38 (0,49)	0,41 (0,49)	A	0,34 (0,48)	AB	0,26 (0,44)	B	0,44 (0,50)	A	
Live in Northeast	0,21 (0,41)	0,19 (0,39)	B	0,13 (0,34)	B	0,26 (0,44)	A	0,29 (0,46)	A	

Table 1. (continued)

Variable	Mean (SD)					
	Full Sample N = 1,658	Chain N = 1,095	Club N = 85	Independent N = 304	DTC N = 174	
Asian	0,04 (0,20)	0,03 (0,16)	C 0,15` (0,36)	A 0,06 (0,23)	B 0,06 (0,23)	BC
Black	0,08 (0,28)	0,08 (0,28)	0,07 (0,26)	0,08 (0,28)	0,09 (0,28)	
White	0,77 (0,42)	0,79 (0,41)	A 0,62 (0,49)	B 0,76 (0,43)	A 0,74 (0,44)	AB
Hispanic	0,04 (0,20)	0,04 (0,19)	B 0,09 (0,29)	A 0,03 (0,18)	B 0,03 (0,18)	B
Miles traveled	6,05 (9,69)	5,78 (9,28)	BC 8,20 (12,46)	A 5,32 (9,11)	C 7,99 (11,24)	AB
Responsible to purchase FF	0,83 (0,37)	0,84 (0,36)	A 0,73 (0,45)	B 0,80 (0,40)	AB 0,85 (0,36)	A
Monthly spend on FF	30,14 (54,37)	27,08 (36,03)	B 46,43 (73,74)	A 28,64 (37,59)	B 44,02 (120,82)	A
Only place offering desirable FF ^z	48,90 (30,76)	46,90 (30,81)	B 47,35 (33,03)	B 49,21 (29,53)	B 61,96 (28,28)	A
Market price ^z	70,53 (23,90)	72,01 (23,27)	A 69,14 (25,58)	AB 69,04 (23,94)	AB 64,32 (25,89)	B
Closeness to consumers home ^z	62,19 (27,74)	63,43 (27,26)	A 56,69 (29,26)	AB 62,77 (27,47)	A 55,95 (29,53)	B
Market availability ^z	35,48 (31,63)	35,01 (31,67)	32,40 (32,23)	36,44 (31,02)	38,32 (32,19)	
FF selection ^z	73,65 (23,75)	72,90 (23,91)	BC 67,75 (26,79)	C 74,60 (22,59)	AB 79,81 (21,90)	A
Friendliness of atmosphere ^z	58,31 (29,20)	56,16 (29,36)	B 58,06 (30,52)	B 59,16 (28,16)	B 70,72 (26,23)	A

Table 1. (continued)

Variable	Mean (SD)					
	Full Sample N = 1,658	Chain N = 1,095	Club N = 85	Independent N = 304	DTC N = 174	
Convenience ^z	71,31 (24,05)	72,03 (23,84)	68,52 (26,13)	70,19 (23,56)	70,04 (25,17)	
Locally-grown FF offer ^z	54,98 (30,42)	51,56 (29,96)	52,79 (32,95)	54,88 (29,21)	78,17 (23,39)	A
Organic FF offer ^z	43,60 (33,47)	40,38 (32,99)	51,34 (34,34)	42,93 (31,63)	61,48 (33,29)	A
Seasonal FF offer ^z	64,90 (27,88)	63,23 (28,38)	61,07 (29,75)	65,93 (26,52)	75,74 (23,25)	A
FF diversity ^z	56,13 (30,86)	55,22 (30,78)	58,66 (32,19)	56,51 (29,90)	60,04 (32,23)	
General health interest	0,00 (1,00)	0,01 (1,00)	0,07 (1,09)	-0,02 (1,01)	-0,01 (1,00)	
Cravings for sweet food	0,00 (1,00)	0,00 (0,99)	0,19 (1,05)	-0,04 (1,01)	0,01 (1,02)	
Food pleasure	0,01 (1,00)	0,00 (1,00)	0,28 (0,93)	0,02 (0,99)	-0,11 (1,02)	B
Variety seeking in food	0,00 (1,00)	0,01 (1,00)	-0,02 (1,12)	0,00 (1,00)	-0,06 (0,95)	

Note: ^zThe mean is the percentage of respondents with that attribute. Different letters across columns indicate significant differences of means at $P < 0.1$ using Tukey's significant different test. FF = fresh fruits

Table 2 displays the marginal effects of the multinomial logit regression. Shoppers rating high on CSF were more likely to choose club stores (1%, $P < 0.05$) and DTC markets (1%, $P < 0.1$) for fresh fruits. These results suggest the importance of highlighting fruit sweetness in fruit labels, as well as through their social media. Club stores and local markets can provide samples of fresh fruits for tasting because they allows consumers to verify experience attributes, which may motivate consumers to buy more fresh fruits. This is especially true as most purchase decision making is made at the place of purchase (Nair and Shams, 2020). Shoppers rating high in VSF were less likely to shop for fresh fruits at club stores (1%, $P < 0.05$). Consistent with Ailawadi, Ma, and Grewa (2018), we suggest that consumers seeking a variety of fresh fruits may be enticed to purchase more at club stores if they have access to big bundles containing different fruit types.

Table 2. Marginal Effects from the Multinomial Logit Regression of Variables Influencing or Not the Marketplace Choice

	Chain <i>N</i> = 1,095	Club <i>N</i> = 85	Independent <i>N</i> = 304	DTC <i>N</i> = 174
Female	-4,18 *	-0,50	6,20 ***	-1,52
Age	0,07	0,00	-0,06	-0,01
Single	-1,17	0,45	-1,58	2,30 *
College	1,09	0,09	-1,75	0,57
Income	0,00	0,00	** 0,00	0,00
Live in rural area	-2,60	-2,41	* 4,34	0,67
Household size	-0,67	0,44	1,14	-0,91 *
Number children in household	2,35	0,15	-3,14 *	0,64
Live in Midwest	3,38	1,69	-1,79	-3,28 **
Live in West	5,12	3,33	** -4,39	-4,06 **
Live in South	11,13 ***	1,73	-12,43 ***	-0,43
Asian	-17,90 ***	4,71 ***	8,74 *	4,45 **
Black	-2,36	-0,39	3,53	-0,78
Hispanic	-1,58	2,58 *	2,42	-3,41
Miles traveled	0,06	0,07	** -0,18	0,05
Responsible to purchase FF	6,55 **	-1,96 **	-4,93 *	0,33
Monthly spend on FF	-0,03	0,01 **	0,01	0,01
Only place offering desirable FF	-8,47 *	-0,31	1,45	7,33 ***
Market price	11,56 **	1,52	-8,22 *	-4,86 **
Closeness to consumers home	6,50	-2,77	4,55	-8,28 ***
Market availability	3,32	-2,82	2,51	-3,00 *
FF selection	5,17	-5,16 **	4,87	-4,89 *
Friendliness of atmosphere	-17,51 ***	2,61	7,69	7,21 **
Convenience	17,70 **	-0,87	-12,85 **	-3,97
Locally grown FF offer	-15,74 **	-1,17	-1,82	18,73 ***

Table 2. (continued)

	Chain <i>N</i> = 1,095	Club <i>N</i> = 85		Independent <i>N</i> = 304	DTC <i>N</i> = 174	
Organic FF offer	-5,25	4,65	**	-1,73	2,33	
Seasonal FF offer	-1,55	-3,30		5,23	-0,37	
FF diversity	5,00	2,94		-2,65	-5,29	**
General health interest	0,05	0,26		-0,13	-0,18	
Cravings for sweet food	-0,68	0,90	**	-1,14	0,92	*
Food pleasure	-1,27	0,68		1,26	-0,68	
Variety seeking in food	1,31	-0,82	**	-0,27	-0,22	
Prob > Chi ²						0.00
Pseudo R ²						0.13

Note: Marginal effects are expressed in per cent points. *** $P < 0.01$, ** $P < 0.05$, * $P < 0.1$

Market attributes driving fruit buyers to purchase at chain stores included convenience of market (18%, $P < 0.05$) and prices (12%, $P < 0.05$). In contrast, friendliness of atmosphere (18%, $P < 0.01$) and access to locally grown fruits (16%, $P < 0.05$) deterred shoppers from choosing chain stores. These findings suggest that improving customer service and the supply of local fruits may influence customers to purchase at chain stores. It seems that consumers purchasing fresh fruits at chain stores care more about prices and one-stop convenience.

The only market attribute driving customers to choose club stores was access to organic fruits (5%, $P < 0.05$), while fruit selection (5%, $P < 0.05$) was a major barrier to purchasing fruits at these stores. This finding has important implications for club stores and warehouses. For example, managers of club stores could boost sales by offering more organic fruits and improving offline and online organic produce advertising.

Shoppers at independent stores were less likely to be driven by prices (8%, $P < 0.1$) or market convenience (13%, $P < 0.05$). Cho and Volpe (2017) reported that buyers choosing independent stores tend to be driven by specific fresh fruit attributes, including freshness and access to ethnic fruits. Our results also suggest that those purchasing at independent grocery stores are willing to pay premium prices as long as they have access to specialty fresh fruits.

Market attributes driving fruit buyers to purchase at local markets were availability of locally grown fruits (19%, $P < 0.01$), the only place they can find fruits they want (7%, $P < 0.01$), and friendly atmosphere (7%, $P < 0.05$). These attributes were consistent with previous studies reporting the drivers to purchase local produce (Pinto and Torres, 2017; Low et al., 2020). In contrast, distance to the market (8%, $P < 0.01$), prices (5%, $P < 0.05$), diversity of fruits (5%, $P < 0.05$), and fresh fruit selection (5%, $P < 0.1$) were major barriers to purchasing fresh fruits at DTC markets. Our findings suggest local buyers do not consider price as a determinant factor when selecting the marketplace for fresh fruits. Local market consumers seem to place more value on knowing more about their food, where it comes from, and the health, nutrition, and safety characteristics when buying from local markets.

Conclusions

The marketplace choice for fresh fruit purchase is influenced by different marketplace attributes and consumers' attitudes. Focusing on four types of markets (e.g., chain stores, club stores, independent stores, and local markets) and four attitudinal scales, this study provides a better understanding of what guides consumers to purchase fresh fruits at a specific market, as well as the barriers when choosing a marketplace. Our findings have several implications. Creating a friendly atmosphere with creative displays and promoting consumer-sellers interaction seems to be driving consumers to choose the marketplace for fresh fruit purchases. Fresh fruit retailers can use our findings to develop marketing campaigns that emphasize sweetness, "localness," and diversity of fruits. Future research should focus on motivations influencing fresh fruit consumers through in-depth research interviews or new qualitative methods relying on cognitive sciences.

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