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Marketing opportunities and challenges for locally raised meats: An online consumer survey in South Carolina

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Abstract

South Carolina livestock producers are expanding their operations to include local meat sales, with a sizeable number of farmers entering the market for the first time. Little is known about South Carolina's local meat consumers and their buying preferences. This study aims to identify the demographic traits of local meat consumers, their preferred local meat product attributes, their desired purchasing locations, and a range of prices consumers are willing to pay for local meat. This study surveyed 1,048 South Carolina meat consumers. Of these survey respondents, 741 had consumed local meat products within the last 12 months and 307 had not. Results indicate that local meat consumers tend to be younger, reside in larger households, have higher household incomes, and have greater educational attainment. They also may be more likely to be long-term residents of South Carolina. These consumers are willing to pay a 1% to 24% premium for local meats to be eaten at home and US$1.00 to US$1.99 more per entrée for local meats at a restaurant. The most desirable attributes of local meat are hormone-free, all-natural, no antibiotics, and grass-fed. The most popular buying locations are the grocery store, directly from farms, farmers markets, butcher shops, and online ordering. Most consumers are unwilling to drive more than 20 miles (32 km) to purchase local meat. The study also uncovered barriers to consumers' willingness to purchase (or purchase more) local meats: product unavailability, high prices, food safety concerns, convenience, and ease of preparation.

Keywords

Consumer Preferences, Marketing, Willingness-to-Pay, Local Meats, Local Foods

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Introduction

The United States' per capita meat consumption has increased only slightly over the last 20 years, with meat consumption varying by species. Beef consumption has declined from 97 pounds (44 kg) per person in 1999 to 83 pounds (37.6 kg) in 2020; pork consumption has been relatively flat, from 68 pounds (30.8 kg) per person in 1999 to 67 pounds 30.4 kg) in 2020; and lamb and veal combined was only 1 pound (0.5 kg) per capita in 2020 (Kuck & Schnitkey, 2021). On the other hand, poultry consumption has been on a meteoric rise over the last 50 years, from 34 pounds (15.4 kg) per person in 1970 to 81 pounds (36.7 kg) per person in 2020 (Kuck & Schnitkey, 2021). Most of the increase in poultry is made up of chicken, as turkey consumption has been between 12 and 14 pounds (5.4 to 6.4 kg) per person for at least two decades (U.S. Department of Agriculture Economic Research Service [USDA ERS], 2021).

The COVID-19 pandemic and related food chain disruptions substantially affected meat consumption patterns in the U.S. The meat processing industry calculates that the demand for meat and poultry products in 2020 rose by 34.6% over 2019 (FMI, The Food Industry Association [FMI] & Foundation for Meat & Poultry Education & Research, 2020). Some reasons given for this increase were more people cooking at home (USDA ERS, 2021), grocery store meat scarcities (Guzman, 2020), and panic buying (Lusk & McCluskey, 2020).

South Carolina witnessed the same increase in demand, and consumers turned to local livestock producers for their provisions when the grocery stores were out of meat. Local meat demand in South Carolina increased by more than 21% between April and June 2020 (Richards & Vassalos, 2021), but soon became unserviceable. South Carolina meat processors were overwhelmed, and wait times for local livestock processing rose from two weeks to over a year (Richards & Vassalos, 2020). Many South Carolina livestock producers felt they missed a golden opportunity during that time, with almost 60% of South Carolina farmers responding that processing capacity was their most significant future challenge (Richards, 2020a).

The processing bottlenecks witnessed in South Carolina are common, and many states are looking to improve their local meat processing capacity. The USDA committed $500 million[1] for states to invest in their local meat processing infrastructure in 2021 and 2022 (USDA, 2021). And to date, at least 19 states have used Coronavirus Aid, Relief, and Economic Security (CARES) Act and American Rescue Plan Act (ARPA) dollars to bolster their local meat supply chains (Niche Meat Processor Assistance Network [NMPAN], 2022). South Carolina is the newest state to join the ranks, having just announced a $3 million investment in local meat processors that was awarded due in part to the research performed by Clemson University Cooperative Extension (South Carolina Department of Agriculture [SCDA], 2022; WLTX, 2022).

With these new capital investments in South Carolina, local meat processing capacity is expected to increase over the next few years, but the level of sustained consumer demand remains unclear (Tonsor et al., 2021). A South Carolina consumer survey asking about post-COVID-19 purchases found that 23.2% of consumers expected to buy more local meat, with 28% expecting to buy less (Richards & Vassalos, 2021). Due to these mixed results, a key recommendation from Richards and Vassalos (2021) was that South Carolina meat producers need to increase their marketing efforts to prepare for increased future processing capacity and meat production. Most likely, local meat producers in other states are facing similar issues and are looking for data provided by studies such as this one.

Literature Review

There is a wealth of literature about local food consumers and general meat consumption, but little research specifically about local meat consumers. However, the literature does help to bring into focus who is more likely to buy local meats, as the local meat consumer is both a local food consumer and a general meat consumer.

[1] All currency in this article is in U.S. dollars.

Local Food Consumers

The literature shows that consumers are motivated to buy local foods because they believe they are fresher and of higher quality, that the purchase helps local farmers, and that local foods are better for the environment. Psychological factors also play a role in the local food purchasing decision, which is generally associated with altruistic behavior, trust in local producers, and the desire to know how food is produced (Bavorova et al., 2016; Bianchi, 2017; Cranfield et al., 2012; Kemp et al., 2010; McKee, 2021; Onozaka et al., 2010; Skallerud & Wien, 2019; Umberger et al., 2009).

Regarding demographic characteristics, the local foods consumer tends to be younger, female, white, have higher educational attainment, and have higher-than-average household income (Adams & Adams, 2008; Bavorova et al., 2016; Bimbo et al., 2021; Brown, 2003; Butu et al., 2020; Carpio & Isengildina-Massa, 2008; Cicatiello, 2020; Eastwood et al., 1999, 1987; Govindasamy et al., 1998; Jekanowski et al., 2000; Kuches et al., 2000; Loureiro & Hine, 2002; Robinson & Smith, 2002).

Local food consumer household sizes tend to be larger, and it appears to be a significant and positive relationship if the household members are married and if they have children. Household budgets are also significant, as the greater the proportion of the household budget spent on food, the less likely household members are to consume local foods (Adams & Adams, 2008; Bavorova et al., 2016; Butu et al., 2020; Cicatiello, 2020; Cranfield et al., 2012; Eastwood et al. 1987; Robinson & Smith, 2002; Wolf, 1997; Wolf et al., 2005; Zepeda & Li, 2006).

The literature also suggests that consumers are willing to pay a premium for local products (Adams & Adams, 2008; Carpio & Isengildina-Massa, 2008; Giraud et al., 2005). This premium can vary depending on whether it is a high-value good or an animal product, like meat (Carpio & Isengildina-Massa, 2008; Giraud et al., 2005). Typically, the percent premium for a high-value or animal product is lower, but it is typically based upon a higher price point, resulting in a higher total dollar premium.

However, discrepancies in the literature exist. For example, some studies have identified local food buyers as being older, having lower education levels, and having lower household incomes (Adams & Adams, 2008; Bimbo et al., 2021; Carpio & Isengildina-Massa, 2008; Eastwood et al., 1987, 1999; Giraud et al., 2005; Govindasamy et al., 1998; Jekanowski et al., 2000; Kuches et al., 2000; Wolf, 1997; Zepeda & Li, 2006).

In addition to demographic and motivational characteristics, past research indicates that consumer lifestyle factors positively affect local food purchases. These lifestyle factors include growing up on a farm, working in agriculture, growing one's own food, enjoying cooking, and living in the western U.S. (Bavorova et al., 2016; Brown, 2003; Carpio & Isengildina-Massa, 2008; Cranfield et al., 2012; Kemp et al., 2010; Wolf et al., 2005; Zepeda & Li, 2006).

Local Meat Consumers and General Meat Consumption Trends

The literature shows that local meat consumers have traits similar to those of local food consumers: younger, female, white, higher educational attainment, and higher household income (Adu-Gyamfi et al., 2016; Curtis, 2014; Knight et al., 2006; Makweya & Oluwatayo, 2019; Sri Lestari et al., 2016; Stutzman, 2020; Tackie et al., 2017, 2018; Umberger et al., 2009; Verbeke et al., 2013; Xue et al., 2010).

In this literature, the effects of household size on local meat consumption are mixed, with Xue et al. (2010) and Makweya and Oluwatayo (2019) emphasizing purchasing differences between smaller and larger household sizes. Like with local foods, as food expenditures as a percentage of the household budget rise, the consumer is less likely to buy local meat.

Finally, meat consumption varies by race, household income, and gender (USDA ERS, 2017). Specifically, meat consumption tends to decrease with the demographic traits of being female, white, and having higher education and household income levels. Ironically, these are the demographics observed of those more likely to be local meat purchasers.

Consumer Willingness to Pay for Local Meats

There have been numerous studies on willingness

to pay for local beef, with premiums ranging from 10% to 58% (Agabriel et al., 2014; Curtis et al., 2012; Grannis et al., 2000; Loureiro & Umberger, 2003), with many values in between: 11% to 24% (Umberger et al., 2003), 20% to 24% (Thilmany et al., 2003), 49% to 54% (Dobbs et al., 2016), and 16.4% (Makweya & Oluwatayo, 2019). For the studies cited above, beef is usually divided into steak and hamburger, with steak having a lower percentage premium. Generally, past studies show that premiums for beef are higher than those for other local meats.

Willingness-to-pay studies for other local meats show that local pork premiums range from 0% (Byrd et al., 2018) to 22.5% (Picardy et al., 2020), with values within this range of 6.6% to 12.9% (Sanders et al., 2007), 11% to 15% (Curtis, 2014), and 10% (Curtis et al., 2012). The few local lamb and goat studies that exist report that consumers are willing to pay 11% to 15% more for local lamb (Curtis, 2014; Gracia, 2014; Gracia & de-Magistris, 2016), with studies on local goat meat reporting a willingness to pay a small premium, in cents per pound (Tackie et al., 2015, 2017, 2018).

Research Objectives and Significance

Outside of research from Carpio and Isengildina-Massa (2008), little is known about South Carolina's local meat consumers, where they buy and consume local meat, how much they are willing to pay, and what local meat attributes matter most to them. The research objectives for this study are to shed more light on these factors and determine which are most important for encouraging increased purchases of local meat for consumption at home and restaurants. Additional information is also sought about the size of the freezer meat market in South Carolina, as preliminary research has shown that this is an important marketing channel (Richards, 2020a).

The significance of this study is that it adds to the literature concerning the consumption of local foods and meats and is one of the few studies that disaggregates and examines the consumption of more than one type of local meat. More importantly, this study will give local meat producers additional information about their target customers and provide a basis for future marketing strategies.

Applied Research Methods

Data Collection and Summary Statistics

Data for this study were obtained from an online survey of South Carolina consumers conducted from October through November 2020. Qualtrics, an online survey platform, was used to administer the survey. The questionnaire consisted of screening questions, general questions about consumers' lifestyle characteristics and local meat preferences, and a sociodemographic section. The screening questions qualified respondents who ate meat, were over 18 years of age, were residents of South Carolina, and made household food-purchasing decisions. Respondents were further separated into local meat consumers and nonconsumers by asking if they had eaten local meat products within the last 12 months. Since consumers may have different definitions of what "local" includes, local meats were defined as meat products farm-raised in South Carolina (or within 200 miles of their residence). Nonlocal meats were defined as those meat products found at most food retailers that are not labeled as local.

The study collected 1,048 survey responses, with 741 respondents who had consumed local meat within the last 12 months and 307 who had not. Qualtrics recruited respondents from representative consumer panels in South Carolina. Additional screening excluded responses deemed too rapid based on the average time the survey takes to answer (thus removing "professional survey takers" from the sample).

Table 1 shows that the demographics of the survey sample differed slightly from the general demographics of South Carolina and the United States, likely due to the screening questions and the factors discussed in the following two paragraphs. Survey participants tended to be younger, more likely to be female, and have higher educational attainment. Respondent household income and household size were somewhat consistent with those found in South Carolina and the U.S., except that single households and those in the highest and lowest household income ranges were represented less frequently. Respondent race and ethnicity show that non-whites (Black/African American and other ethnicities) are represented at a higher

Table 1. Demographics of Sample versus U.S. and South Carolina Populations

	Sample	U.S.	S.C.
Age			
18 to 25 years of age	11.5%	1.5%	1.4%
26 to 34 years of age	17.7%	6.9%	5.7%
35 to 54 years of age	39.2%	29.6%	29.6%
55 to 64 years of age	17.2%	28.1%	27.4%
65 years and older	14.4%	33.9%	35.9%
Gender			
Male	34.1%	49.5%	51.5%
Female	65.9%	50.5%	48.5%
Highest Level of Education Completed			
High School or Less	23%	37.3%	43.5%
Some College or Associate Degree	35%	27.0%	30.1%
Bachelor's Degree	26%	9.8%	16.9%
Advanced Degree	16%	3.3%	9.5%
Household Income (self-reported)			
Less than $29,999	23.6%	21.1%	32.4%
$30,000 to $49,999	22.6%	16.0%	20.3%
$50,000 to $74,999	21.0%	16.5%	18.2%
$75,000 to $99,999	13.9%	12.3%	11.5%
$100,000 to $149,999	12.2%	15.5%	11.0%
$150,000 or greater	6.7%	18.5%	6.7%
Size of Household			
Only me	15.1%	28.2%	34.3%
Two people	35.7%	34.8%	34.4%
Three people	20.0%	15.1%	13.3%
Four people	18.2%	12.7%	10.2%
Five or more people	11.0%	9.3%	7.8%
Race			
White	74.2%	76.5%	68.5%
Black/African American	18.6%	13.4%	27.1%
Other	7.2%	10.1%	4.4%

Source: U.S. Census, 2020.

rate than the U.S. population, yet lower than the population demographics found in South Carolina.

The higher incidence of female respondents is most likely due to the screening question concerning the authority to make household food purchasing decisions. Also, the female respondent rate is typically higher in online surveys (Mulder & de Bruijne, 2019; Smith, 2008). A bias toward the younger and more highly educated also occurs in online surveys, as these respondents tend to have higher internet speeds and frequently access the internet (Bethlehem, 2010).

Results

Consumers versus Nonconsumers

Table 2 compares the demographic traits of local meat consumers to nonconsumers. Using Welch's t-test to compare the means of the two groups shows that local meat consumers may differ from nonconsumers concerning age, education, household income, and household size.

These differences suggest that the local meat consumer may be younger, have higher education and household income, and reside in households with more people. Gender, race, and length of time living in South Carolina were shown not to be significantly different, according to the t-test.

Local Meat Preferences and Desired Traits

Local meat consumers (n=741) were asked what types of meats they consume and what percent were sourced locally. Beef was the most popular meat consumed. However, more chicken, turkey, lamb, and goat were sourced locally (Figure 1).

Local meat consumers were asked what traits they valued the most when buying local meats. The responses show that the most popular traits (ranked) were no growth hormones/no hormones added, all natural, no antibiotics, humanely raised, and free range. Knowing the farmer who raised the animal, organic certification, and pasture-raised were the least important. Regarding the safety of local meats,

most consumers were either not concerned or had little concern about food safety (62.8%).

Factors Encouraging More Local Meat Consumption

Local meat consumers were asked where they consumed local meats. Most consumers ate local meats at home (83.8%), followed by restaurants (51.1%) and cookouts such as hog roasts (24%). If the respondent did not eat local meats at home, they were asked if they were willing to consider this option, and if they answered affirmatively, they were considered a potential consumer (P). Both current at-home consumers (C) and potential (P) at-home consumers were asked what factors would encourage them to purchase more local meats.

Comparing the two groups for home consumption shows that the factors encouraging current at-home consumers for the most part are the same as those that would encourage potential at-home consumers (Table 3). Lower prices for local meat products was the top encouraging factor, followed by a trusted local supplier and more local meat products availability. The highlighted differences between the two groups show that presampling products, finding a trusted local supplier, obtaining producer food safety assurances, seeing the products before purchasing, and receiving preparation advice were more important to those not currently consuming local meats.

Factors influencing current consumers to purchase more local meats at restaurants (Table 3) are also related to availability and price: lower prices on menus, more restaurants serving local meats, and increased menu offerings. Potential consumers had similar responses, yet seemed to

Table 2. Demographics of Local Meat Consumers (*n*=741) and Nonconsumers (*n*=307)

	Consume (Yes)	Consume (No)	t-test
Age			
Under 25	12.0%	10.1%	
25 to 34 years of age	19.3%	14.0%	
35 to 44 years of age	25.1%	20.2%	
45 to 54 years of age	14.7%	17.6%	***
55 to 64 years of age	16.3%	19.2%	
65 to 74 years of age	10.5%	14.7%	
75 years or older	2.0%	4.2%	
Gender			
Male	35.0%	31.9%	NS
Female	65.0%	68.1%	
Highest Level of Education Completed			
High School or Less	21.6%	26.7%	
Some College or Associate Degree	35.0%	36.8%	
Bachelor's Degree	26.7%	23.5%	**
Advanced Degree	16.7%	13.0%	
Household Income (self-reported; US$)			
Less than $29,999	20.6%	30.6%	
$30,000 to $49,999	23.1%	21.5%	
$50,000 to $74,999	21.1%	20.8%	***
$75,000 to $99,999	14.2%	13.4%	
$100,000 to $149,999	13.5%	9.1%	
$150,000 or greater	7.6%	4.6%	
Size of Household			
Only me	14.0%	17.6%	
Two people	35.5%	36.2%	
Three people	20.0%	20.2%	*
Four people	19.0%	16.3%	
Five or more people	11.5%	9.8%	
Race			
White	75.0%	72.3%	
Black/African American	17.8%	20.6%	NS
Other	7.2%	7.2%	
Length of Time Living in South Carolina			
0 to 4 years	10.1%	10.1%	
5 to 9 years	10.3%	11.1%	
10 to 14 years	8.0%	8.5%	NS
15 to 19 years	11.1%	12.4%	
20 to 24 years	9.6%	8.8%	
Over 25 years	50.1%	47.6%	

Significance codes: '***' 1% '**'5% '*'10%
'NS' Not Significant.

place more emphasis on local meat promotion and menu offerings than on price compared to current consumers.

Preferred Marketing Channels and the Role of Farmers Markets

Local meat consumers ranked where they would ideally prefer to purchase their meat products. The

Figure 1. Meat Consumption Frequency and Percent Sourced Locally

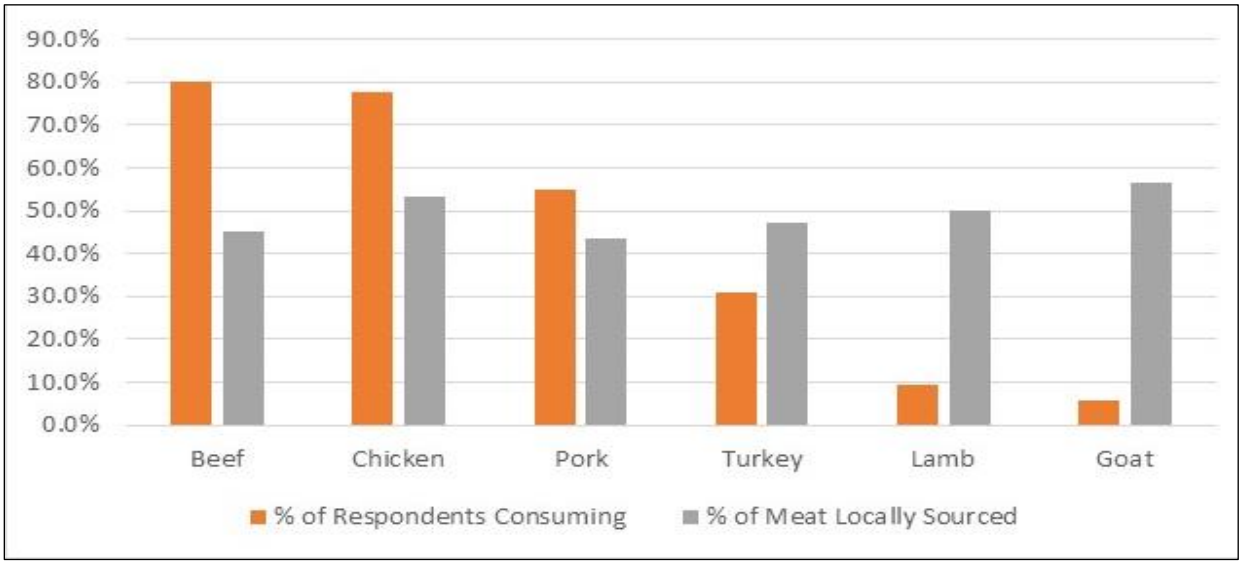


Table 3. Encouraging Local Meat Consumption at Home and Restaurants[a]

	Percent (C)	Percent (P)	Difference (C-P)
Factors Encouraging More Purchases at Home (C, *n*=621) and Those Willing to Try (P, *n*=114)			
Lower prices for local meat products	60.9%	57.9%	3.0%
A trusted local supplier of quality meat products	46.5%	52.6%	-6.1%
More availability of local meat products	31.7%	32.5%	-0.7%
Food safety assurances from the producer	25.8%	31.6%	-5.8%
Being able to purchase local meat that is not frozen	22.5%	25.4%	-2.9%
Better meat cuts and portion sizes	21.3%	24.6%	-3.3%
The ability to see the products before purchasing	20.0%	25.4%	-5.5%
Ideas or recipes on how to prepare local meats	14.7%	19.3%	-4.6%
Better packaging of local meat products	11.4%	12.3%	-0.8%
Being able to sample the meat before buying	10.6%	18.4%	-7.8%
More availability of precooked products	8.2%	8.8%	-0.6%
Factors Encouraging More Purchases at Restaurants (C, *n*=732) and Those Willing to Try (P, *n*=307)			
More restaurants serving local meats	45.4%	52.4%	-7.1%
Lower prices for local meat menu items	50.4%	42.7%	7.7%
Increased offerings of local meats on menus	42.3%	39.9%	2.4%
More promotion of local meats	26.9%	34.7%	-7.8%
Increased variety of local meat offerings on menus	31.1%	30.2%	0.9%

[a] (C)=Current consumer, (P)=Potential consumer

grocery store was the top response, followed by buying at the farm, farmers markets, butcher shop, and ordering online. When asked how far they would be willing to travel to purchase local meat, most (83.2%) were unwilling to drive more than 20 miles.

Most respondents (83%) had a farmers market in their area, and 77.2% replied that they shopped at their farmers market. Of those who shopped at farmers markets, 82% replied that they shopped at the market two times or fewer per month, with 54.3% shopping one time or fewer per month. Those who shopped at farmers markets (n=440) were asked to rank the attributes of their local market from best to worst. Product quality was ranked first, followed by convenience, selection, and price.

The Custom-Exempt or Freezer Meat Trade

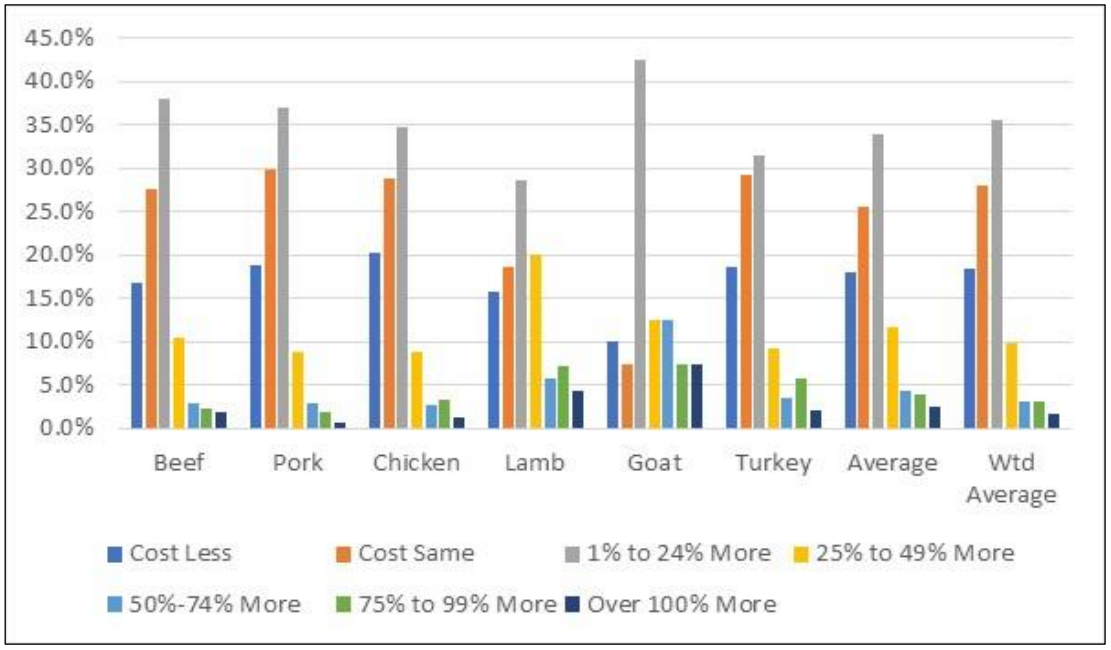
The importance of this marketing channel is that these local meats are usually sold in bulk and can be less expensive than buying local meats (or even nonlocal meats) as retail cuts (Nelson & Richards, 2021). The freezer meat trade typically refers to farmers having an animal butchered without an on-premises meat inspector under federal custom-exempt provisions. In South Carolina, it is estimated that 28.5% of livestock sold for meat is processed under this exemption (Richards 2020a). Local meat consumers who purchased for home use (n=621) were asked what percent of their meat purchases were unlabeled or labeled "not for sale." One-fourth (25%) of survey respondents reported purchasing some meat products in this manner, which is consistent with the previously cited study. It is also important to note that this marketing channel may be responsible for some of the willingness-to-pay responses that include "should cost less" or "should cost the same" as nonlocal meats.

Willingness to Pay for Local Meats

Respondents who indicated that they purchased local meats were asked how much they were willing to pay for local meat products to eat at home and in restaurants. The responses were categorized by a percent premium for at-home consumption and a dollar premium per restaurant entrée. The reason for this categorization is that the researchers thought a dollar premium per entrée might be more intuitive for the respondents, as restaurant entrée prices reflect more than just the meat portion.

The results show that the most common response for home consumption was a 1% to 24% price premium over nonlocal products (Figure 2)

Figure 2. Response Frequencies for Willingness to Pay for Local Meat to Eat at Home



and no premium for local meats eaten at a restaurant, except for goat, which had a most common response of a $2.00 to $2.99 premium (Figure 3). Potential consumers were asked the same questions. The most common response was, "it should cost the same" when buying local beef, pork, chicken, or turkey to eat at home or a restaurant.

Three regression analyses were performed on the survey data set: binary logit regression (logistic), multiple linear regression (MLR), and ordered logistic regression (OLR). Variable definitions are shown in Table 4, and complete regression results are in the Appendix.

Binomial Logit Regression: Local Meat Consumption

Respondents were asked if they consume or do not consume locally raised meats (yes/no response). Logistic regression was used to find the probability

Figure 3. Response Frequencies for Willingness to Pay for Local Meat at Restaurants Methodology

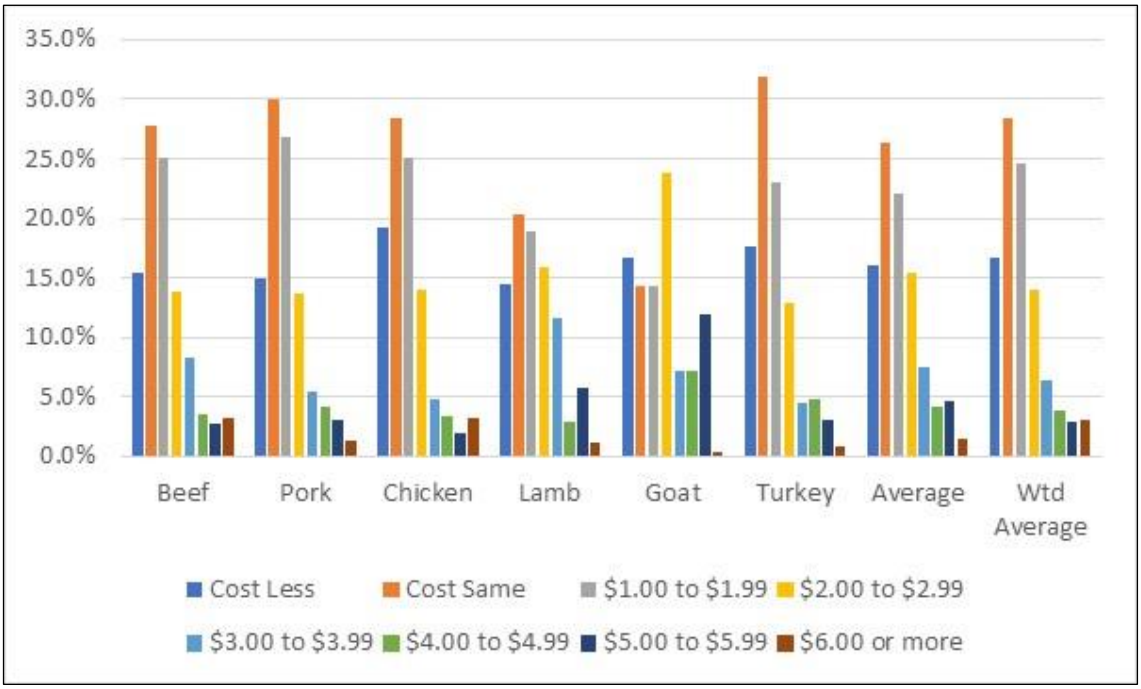


Table 4. Description of Variables in the Regression Models

Variable	Description	Response Categories, Base and Order Levels, and Intervals
Age	Age	(Base/0) Under 25, (1) 25 to 34, (2) 35 to 44, (3) 45 to 54, (4) 55 to 64, (5) 65 to 74, and (6) 75 years or older
Gender	Gender	(Base/0) Male and (1) Female
Ethnicity	Race or Ethnicity	(Base/0) Non-Caucasian, (1) White/Caucasian
Education	Educational Attainment	(Base/0) High school or less, (1) Some college, (2) Bachelor's degree, and (3) Advanced degree
HHIncome	Household Income	(Base/0) Less than $29,999, (1) $30,000 to $49,999, (2) $50,000 to $74,999, (3) $75,000 to $99,999, (4) $100,000 to $149,999, and (5) $150,000 and greater
HHSize	Household Size	(Base/0) Only me, (1) Two people, (2) Three people, (3) Four people, and (4) Five or more people
Tenure	Years Living in South Carolina	(Base/0) 0 to 4 years, (1) 5 to 9 years, (2) 10 to 14 years, (3) 15 to 19 years, (4) 20 to 24 years, and (5) over 25 years

that a survey respondent will consume local meats. In addition, marginal effects can be calculated to show the average change in probability as the response variable changes by one unit.

Ordered Logit Regression: Willingness to Pay

Local meat consumers were asked questions about their willingness to pay for local meats at home and at restaurants. The response variables mentioned are good examples of ranked responses, which are better analyzed using an ordered logit regression model (Green, 2018).

Multiple Linear Regression: Consumption Frequency

Consumption frequency questions (what percent of local meat is consumed versus nonlocal meat) are better examples of a linear response, where responses can range from 1% to 100% and are of a more continuous nature. For these questions, multiple linear regression was used to analyze the data.

Statistical Analysis and Results

Binomial logit (logistic) regression results in Table 5 show that younger individuals and individuals with a higher household income are more likely to be local meat consumers. Marginal effects suggest that an increase in age (in 10-year increments) reduces the probability of consuming local meats by 3.62%, and an increase in household income increases the probability of consuming local meats by 3.05%.

Those who identified themselves as local meat consumers were then asked what percent of their total meat consumption was local relative to nonlocal. The respondents answered this question by moving a slide bar to the approximate percentage, so the response was more continuous than discrete. Multilinear regression results shown in Table 6 suggest that variables significant for local beef consumption frequency were Ethnicity (nonwhite), Gender (male), larger Household Size, and longer length of time living in South Carolina (Tenure). Local pork consumption frequency had significant variables of Ethnicity (non-white), Gender (male), Household Income (lower), and Tenure (longer-term residents). Variables significant for increased local chicken consumption were Gender (male), Household Income (lower), and Tenure (longer). Frequent local turkey consumers were more likely to be male, have higher education, have larger household sizes, and have lower household incomes. Increased local lamb and goat consumption was related to being male and having higher educational attainment, with increased goat consumption also having significant variables of Household Size (larger) and Household Income (lower).

Ordered logit regression results for willingness to pay for local meats to be eaten at home are shown in Table 6, third column. Consumers willing to pay more for local beef at home were more likely to be younger, female, have higher educational attainment, and have higher household income. Variables associated with consumers willing to pay more for local pork were Age (younger), Education (higher), and Household Income (higher). Local chicken consumers were more likely to pay more if they were female, younger, had higher education and household income, and had a

Table 5. Logistic Regression Results: Consume(Y) vs Consume(N)

	Consumers	Marginal Effects
(Intercept)	0.87	
	(0.44)	
Gender	-0.09	-0.0179
	(0.15)	
Age	-0.18 ***	-0.0362
	(0.05)	
Ethnicity	0.07	0.0133
	(0.16)	
Education	0.08	0.0169
	-0.08	
HHSize	-0.02	-0.0048
	-0.06	
HHIncome	0.15 **	0.0305
	-0.05	
Tenure	0.05	0.0097
	-0.04	
N	1048	
AIC	1252.57	
BIC	1292.21	
Pseudo R2	0.04	

*** p < 0.001; ** p < 0.01; * p < 0.05; ^ p < 0.1

smaller household size. Higher education levels were associated with a willingness to pay more for local turkey and lamb, with turkey consumers more likely to be younger and lamb consumers more likely to be male. No significant variables were associated with a higher willingness to pay for local goat meat.

Significant variables associated with local meat consumers willing to pay more for local meats eaten at restaurants are shown in Table 6, fourth column. Restaurant consumers willing to pay more for local beef were more likely female. Variables associated with a willingness to pay more for local pork at restaurants were Age (younger) and Tenure (shorter). A significant variable for local chicken was Age (younger); willingness to pay more for local turkey showed significance for Education (higher); and willingness to pay more for local goat meat was significant for males.

Table 6. Regressions for Consumption Frequency and Willingness to Pay

Analysis	Consumption	WTP Home	WTP Restaurant
Meat Type	Frequency (MLR)	Ordered Logit	Ordered Logit
	Gender (M)***	Gender(F)*	
Beef	HHSize(+)*	Age(-)***	Gender(F)*
	Ethnicity(NC)*	Education (+)**	
	Tenure(+)**	HHIncome (+)^	
	Gender (M)***		
	Ethnicity(NC)*	Age(-)***	Age(-)*
Pork	HHIncome(-)*	Education(+)^	Tenure (-)*
	Tenure(+)*	HHIncome (+)^	
	Gender (M)**	Gender(F)^	
Chicken	HHIncome(-)^	Age (-)***	Age(-)^
	Tenure (+)**	Education(+)**	
		HHSize (-)^	
		HHIncome (+)^	
	Gender (M)**		
Turkey	Education(+)*	Age (-)**	Education (+)*
	HHSize (+)*	Education(+)^	
	HHIncome (-)*		
	Gender (M)^	Gender (M)*	
Lamb	Education (+)*	Education (+)^	NS
	Gender (M)*		
Goat	Education(+)**	NS	Gender(M)***
	HHSize (+)*		HHIncome(+)*
	HHIncome (-)*		

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ^ $p < 0.10$, NS = Not Significant ($p > 0,10$)
Abbreviations: MLR = Multilinear Regression, WTP=Willingness to Pay
(+/-) Sign of coefficient, Rest=Restaurant, M=Male, F=Female, NC=Non-Caucasian

Discussion

Demographics of the Local Meat Consumer

The South Carolina local meat consumer has many similarities to the local food consumer and local meat consumer profiled in the literature review. Welch's t-test showed that South Carolina local meat consumers tended to be younger, have higher educational attainment and household income, and have larger household sizes. Logistic regression reinforced the findings that younger individuals with higher household incomes were more likely to be consumers of local meats. Separating the meat types with multilinear and ordered logit regression teased out additional significant demographic variables concerning willingness to pay for local meats at home and at restaurants, notably Gender, Ethnicity, Education, and length of time living in South Carolina (Tenure).

As for Gender, Table 6, column two reveals that male gender was a significant predictor of the consumption frequency of all local meats. This finding makes sense compared to general meat consumption, where U.S. females consume 33% to 42% less meat than males (Lin et al., 2016). For home consumption, females were more willing to pay for local beef and chicken, while males were more willing to pay for

local lamb. However, in restaurants, females were more likely to pay more for local beef, and males were more likely to pay more for local goat.

Ethnicity (non-white) was a significant predictor of beef and pork consumption frequency. This finding is consistent with general U.S. meat consumption trends for non-whites eating more pork per capita but not consistent with current beef consumption per capita by population demographic. However, consumption trends before 2003 show that pork and beef consumption frequency was higher among non-whites (USDA ERS, 2017).

Higher education levels were significant concerning local turkey, goat, and lamb consumption frequency. These frequency results appear contrary to general U.S. meat consumption trends, as overall meat consumption tends to decrease with educa tion levels. However, turkey and chicken consumption rise with education levels (USDA ERS, 2017). Higher education level was a significant predictor of willingness to pay more for all meats for home consumption, except for goat. Education level was also significant in predicting willingness to pay more for local turkey eaten at a restaurant.

In many of our regression results, age was a significant variable (with a younger age corresponding to a greater frequency of meat consumption and higher willingness to pay for most meat products). This result agrees with the literature on local food consumption and research showing that meat consumption generally decreases as age increases (Neff et al., 2018).

Higher household income was related to a higher willingness to pay for local beef, pork, and chicken to eat at home. However, lower household income corresponded to more frequent consumption of local pork, chicken, turkey, and goat. An explanation could be that this subset of individuals has lower household income than the typical local meat consumer (who tends to have a higher income than a nonlocal meat consumer), as nonconsumers were already separated from this dataset. Another reason could be that these meats are less expensive than beef. Finally, some consumers may buy bulk freezer meat (custom-exempt) at a lower price than retail cuts.

Finally, larger household size was significant for increased local beef, turkey, and goat consumption frequency. This result is consistent with the literature, which finds that households with married individuals (Bavorova et al., 2016; Kuches et al., 2000; Wolf, 1997) and children (Butu et al., 2020; Curtis, 2014) were more likely to buy local products than those that are single (Xue et al., 2010; Makweya & Oluwatayo, 2019). Yet smaller household size was significant for those willing to pay more for local chicken eaten at home. An explanation for this observation may be that smaller households elect to buy smaller meat portions to feed fewer individuals.

An important observation to make when reviewing this study is that the demographic regression results generally align with general meat consumption trends (USDA ERS, 2017). As previously mentioned, general meat consumption varies by race, household income, and gender. Specifically, meat consumption at home decreases with demographic traits associated with being female, white, and having higher education and household income levels. Ironically, these are the demographics observed of those more likely to pay more for local meats to eat at home. These consumers eat meat, yet consume less meat, than those in different demographic groups. In terms of marketing efforts, these results also highlight that the person doing the shopping may be different from the person consuming: females were more likely to be the food-purchasing decision-maker in the household, with 66% of survey respondents being female. Yet males generally consume more meat (USDA ERS, 2017) and are shown to eat all local meats at a higher frequency (Table 6, second column).

On the flip side, this demographic group tends to eat more meat away from home (except for beef) than other demographic groups (USDA ERS, 2017), perhaps representing a marketing opportunity for local meat producers. The size of this marketing opportunity could be significant. It is not known how much local meat is distributed through restaurants, but it is expected to be a small amount. Restaurant consumers do not influence the raw ingredients the chef or owner buys. Unsurprisingly, over 50% of respondents said more restaurants needed to serve local meats. Even nonconsumers mentioned that more local meat

promotions and increased menu offerings would encourage their consumption.

Challenges and Opportunities for Marketing Local Meats

The results of this study show that sales of local meats may be limited by price (willingness to pay), a lack of local meat availability, and inconvenience. Alternatively, local meat sales may be increased through greater access to more sales outlets, highlighting the local meat attributes most valued by consumers, and following best marketing practices.

Willingness to Pay and Price

Current, potential, and nonconsumers in the study ranked price as the top barrier to purchasing or purchasing more local meat**.** Price was also ranked the least desirable of farmers market attributes. Price is a common barrier to purchasing local foods and local meats (Barska & Wojciechowska-Solis, 2020; Chambers et al., 2007; Eastwood, 1996; Gwin & Lev, 2011; Knight et al., 2006; McEachern et al., 2010; Megicks et al., 2012).

Price is a marketing challenge for South Carolina meat producers. Figure 2 illustrates that almost half (46.4%) of consumers thought local meat should cost the same or less than nonlocal offerings, with 35.6% willing to pay between a 1% and 24% premium. Past willingness-to-pay studies in the literature review report that local meat premiums are generally in the 1% to 24% range. This 1% to 24% premium may not represent a sustainable price for producers seeking to sell their meat via retail channels. For instance, local beef costs at least 25% more (Richards, 2020b), and only 18% of survey respondents replied that they would be willing to pay this premium. And, as stated earlier, willingness to pay for local meat products may be dampened by the freezer meat trade. In addition, there is the question of the ability to pay more for local meats, even if specific populations desire them. The literature points out that as the percentage of the household budget spent on food rises, the amount spent on local foods tends to decrease.

Studies specific to southeastern U.S. states show similar results for a lower-than-expected willingness to pay for local beef and goat in Georgia, Alabama, and Florida (Tackie et al., 2015, 2017, 2018). This may be partly due to the Southeast having the lowest average household income in the U.S. (U.S. Census Bureau, 2022). However, in contrast, two Tennessee beef studies reported consumers' willingness-to-pay premiums as higher than the 1% to 24% range (Dobbs et al., 2016; Merritt et al., 2018).

Availability and Sales Outlets

Table 3 points out that the availability of local meats is a critical issue in South Carolina (i.e., needing "a trusted local supplier" and desiring "more availability of local meat products" are the top influencing factors identified by survey respondents). The literature agrees that this is an issue, with past surveys revealing a need for more retail outlets for local foods (Megicks et al., 2012). Furthermore, buying locally involves a time commitment to seek out local products (McEachern et al., 2010; Shi & Hodges, 2016).

The farmers market is one of the most common retail outlets for local products. The number of farmers markets has been growing in the U.S. for the past two decades but have issues of inconvenient locations, limited operation hours, and a lack of variety (Andreatta & Wickliffe, 2002; Archambault et al., 2020; Eastwood 1996; Eastwood et al., 1999; Govindasamy et al., 1998; Kemp et al., 2010; Shi & Hodges, 2016). These same issues were seen in this study, with more than 83% of respondents not willing to travel more than 20 miles to buy local meat and 54.3% visiting their farmers market only once per month or less. Shi and Hodges (2016) found that consumers' willingness to travel was even shorter, with consumers being more likely to shop at a farmers market if it were located within 5 kilometers (3.1 miles) of their residence. Moreover, Eastwood (1996) found that most farm market shoppers visited the market less than 10 times per year, consistent with this study's findings. Comparing this to grocery store shopping, most shoppers (87%) visit the grocery store close to three (2.8) times per week or 12 times per month (Ver Ploeg et al., 2017), which is 12 times more frequent than most shoppers visit farmers markets in this survey.

These results underscore findings in the literature that most local food consumers do not buy all

their groceries from local sources and continue to buy most of their food from grocery stores (Cicatiello, 2020; McKee, 2021; Megicks et al., 2012; Onozaka et al., 2010). This fact is also represented in the results of this survey, where the percentage of local versus nonlocal meat purchases averaged 48.4%, which is in line with Cicatiello's (2020) estimate of 40% to 50%. Farmers markets, however, are a great way to educate consumers and drive new sales, as the interactions between the farmer and consumer are critical in changing buying behavior and establishing trust (Andreatta & Wickliffe, 2002; Carson et al., 2016; Onozaka et al., 2010; Perret & Jackson, 2018).

While survey respondents ranked the grocery store as the most convenient choice, this may be the most challenging channel to penetrate due to the time it takes these stores to procure local products (Local Organic Y'all, 2016). If a producer or a producer group has enough volume and can meet wholesale price points, grocery store placements could be considered.

Buying at the farm may have limited success, as studies have shown that urban consumers are less likely to drive to farms to buy products (Bavorova et al., 2016; Gandee et al., 2003; Shi & Hodges, 2016). Producers may consider offering curbside or front-porch delivery to urban consumers if logistically and financially viable. Also, producers may entice consumers to their farms in other ways, such as agritourism activities.

Butcher shops and online ordering were other options respondents selected in the survey. The latter's convenience has expedited the decline of the former. Consumers in the U.S. have been shopping for their groceries in supermarkets for over 100 years (Ross, 2016), as convenience and cost savings consolidated products and services that had previously been sold by individual vendors (like meat from a butcher's shop) under one roof (Macfadyen, 1985). Butcher shops have undergone a renaissance and are starting to appear in upscale neighborhoods, although they are few. The entire state of South Carolina, for example, has 18 butcher shops that are not part of a chain or inside a supermarket (Google, 2021). However, these retailers might be looking for specialty meats they cannot find through wholesale distributors, such as local goat meat (Richards, 2021).

Interestingly, respondents ranked ordering online as the least preferred method to buy meat, although this has been the fastest-growing food purchasing channel since the outbreak of the COVID-19 pandemic (Redman, 2020). Furthermore, there is an established marketplace for mail-ordered meats with brands such as Omaha Steaks, which has shipped meats through the mail since 1953 (Omaha Steaks, n.d.). The total market share of mail-ordered meat is 3.2% of total meat sales (FMI & Foundation for Meat & Poultry Education & Research, 2020). Still, the Meat Industry's *Power of Meat 2020* report shows that the number of consumers trying online meat ordering doubled from 19% to 38% during the pandemic. However, 52% of shoppers said they would return to their prepandemic shopping habits (FMI & Foundation for Meat & Poultry Education & Research, 2020; Redman, 2020), similar to results found in South Carolina, where 48.7% of shoppers planned to return to their prepandemic purchasing channels (Richards & Vassalos, 2021).

Convenience and Ease of Preparation

Most local meat is sold frozen, an inconvenience for preparation to many shoppers (Gwin & Lev, 2011), and it may be perceived as not fresh, reducing sales compared with fresh products (Cranfield et al., 2012). Preparation knowledge is also essential in the purchasing decision, as evidenced by the studies citing product knowledge, consumption frequency, and enjoyment of cooking as being associated with higher local food purchases (Brown, 2003; Cranfield et al., 2012; Tait et al., 2018; Tregear & Ness, 2005; Wolf et al., 2005; Xue et al., 2010; Zepeda & Li, 2006).

Producers may wish to explore methods of merchandising their meat products in a nonfrozen state and including ice packs and insulated bags as part of the purchase price. Thawing the meat for display may increase waste through spoilage. However, fresh meat wrapped in a foam tray (i.e., case-ready meats) can last 3 to 7 days under refrigeration (Delmore, n.d.) and is the most widely accepted form of buying meat (FMI & Foundation for Meat & Poultry Education & Research, 2020). This thawed meat may also be

used for samples to drive sales further.

One positive outcome of the COVID-19 pandemic is that it encouraged consumers to cook more meals at home (Lin, 2020). This experimentation with cooking at home was part of the general meat sales increase of 34.6% in 2020 (FMI & Foundation for Meat & Poultry Education & Research, 2020). These new food experimenters are typically younger, 25 to 45 (FMI & Foundation for Meat & Poultry Education & Research, 2020), as older individuals tend to be less interested in cooking new foods (Meneely et al., 2009). Producers would be best served to have recipe cards and other promotional materials to accompany their products, which have been shown to drive sales (Hinson & Bruchhaus, 2005; Knight et al., 2006; Staisey & Harris, 2019). Survey respondents also mentioned these items as things that would encourage additional purchases.

Highlighting the Most Desirable Meat Attributes

Respondents ranked no growth hormones/no hormones added, all-natural, no antibiotics, humanely raised, and free range as the most desirable local meat attributes. Knowing the farmer who raised the animal, organic certification, and pasture-raised were the least important. The desired traits ranked by survey respondents are consistent with the literature, where no hormones are frequently mentioned as an essential attribute (Grannis et al., 2000; Merritt et al., 2018; Picardy et al., 2020; Tait et al., 2018). Hwang, Roe, and Tiesl (2005) also found this trait to be the most important after no pesticides, which are not used on animals. "No antibiotics" is the second-most important attribute, followed by grass-fed, how the animal was raised, animal welfare, access to pasture, knowing the farmer, and being environmentally sustainable (Grannis et al., 2000; Hwang et al., 2005; McMullen, 2006; Picardy et al., 2020; Tait et al., 2018).

Certified country of origin, state, and local labeling are also the subject of many willingness-to-pay studies and show positive relationships with the willingness to pay in all literature reviewed (Adalja et al., 2015; Agabriel et al., 2014; Chang et al., 2013; Lim et al., 2013; Loureiro & Umberger, 2003, 2007; McMullen, 2006; Merritt et al., 2018; Stutzman, 2020; Umberger et al., 2003). In some cases, the local label was valued more than or equally with other attributes (Adalja et al., 2015; McMullen, 2006; Tait et al., 2018). Some labeling designations, such as all-natural and organic, are certified by third parties and imply other characteristics like hormone-free and no antibiotics. Finally, some local meat attributes, such as food safety, quality, and humane treatment, may be treated as a given or as part of the locally raised attribute.

Advertising and labeling also abide by the law of diminishing returns, where each additional labeling claim takes away from a clear promotional strategy (Hallaron Advertising Agency, n.d.; Ingredion Inc., 2019). The results from this survey and the literature review point to having two to three attributes on the label. Food safety, meat quality, and humane treatment may not need to be on the label if they are assumed to be local attributes. If a producer is certified organic or all-natural, that should be part of the packaging; otherwise, no hormones and no antibiotics appear to be the most important to current or potential consumers, followed by a local certification of some sort, such as Certified South Carolina Grown. Environmental concerns are significant to consumers, but past surveys have found that this is more of a talking point than an actual reason for purchase, and some have observed that environmentally friendly claims rank last in terms of willingness to pay (Grannis et al., 2000; Kemp et al., 2010; Megicks et al., 2012; Tait et al., 2018). It could be that a product being local equates to being environmentally friendly in many consumers' minds. In any case, environmental friendliness is low on the list for inclusion on the label.

Other Marketing Best Practices

In addition to the items previously discussed, other factors encourage local meat purchases: the consumer seeing the products and being able to sample the products before purchasing, and the supplier coming to be trusted to supply local meat.

Most meat products in South Carolina are sold while frozen and are not displayed for the consumer to view. Eye-catching displays have been shown to increase sales and interest (Hinson & Bruchhaus, 2005; Knight et al., 2006). Producers

should consider investing in small display cases to hold the meat between 32°F and 38°F. If this is not possible, producers could display pictures of the products, which may increase sales by up to 26% (Staisey & Harris, 2019). Sampling is another option to reduce purchasing barriers, and Staisey and Harris (2019) found that this could raise sales by 15% to 30%.

Becoming a trusted local meat supplier involves personal interaction with consumers. Studies have shown that this interaction builds trust and helps change buying behavior in favor of purchasing more local products (Andreatta & Wickliffe, 2002, Carson, 2016; Onozaka et al., 2010; Perret & Jackson, 2018). The point of sale is a good time for the producer to introduce themselves and explain how buying locally helps farmers, which is essential to some consumers, especially those living in urban areas (Bavorova et al., 2016; Skallerud & Wien, 2019). Also, shoppers' motivations differ depending on what market outlet they shop at and the types of products they seek (Bean & Sharp, 2011; Onozaka & Thilmany McFadden, 2011; Thilmany et al., 2006). Frequent interaction with purchasers can give producers clues as to what sells best at what location. In addition, attributes not shown on the label can be described to the consumer in person. Finally, producers should judge how much product information they present during a sale, as some male consumers may be discouraged from buying based on their perceptions of current social trends, especially if they believe these trends are politically motivated (Gracia et al., 2012).

Conclusions, Limitations, and Further Research

South Carolina has substantially increased its local meat production since 2019 in response to increased consumer demand. However, local meat producers need to know more about the characteristics of local meat consumers: their demographics, preferences, and willingness to pay for and consume local meats. This study is an effort to cover this gap in the literature. To the best of our knowledge, this is the first study researching this topic in the South Carolina marketing area.

The findings of this study suggest that local meat consumers tend to be younger, reside in larger households, have higher household incomes, have greater educational attainment, and be long-term residents of South Carolina. Generally, these consumers are willing to pay a 1% to 24% premium for local meats to be eaten at home and $1.00 to $1.99 more per entrée for local meats at a restaurant. Factors associated with a willingness to pay more for local meats are similar to those identified with local meat consumers, with variations between the types of meats analyzed in this study.

South Carolina livestock producers looking to market more locally raised meats may wish to highlight attributes identified by this study: hormone-free, all-natural, no antibiotics, and grass-fed. The most popular marketing channels ranked by consumers are grocery stores, directly from farms, farmers markets, butcher shops, and online ordering, with most consumers willing to drive up to 20 miles (32 km) to purchase local meat. Barriers to consumers' willingness to purchase (or purchase more) local meats include product unavailability, high prices, food safety concerns, inconvenience, and lack of ease of preparation. This study's limitations include sampling and sample size limitations that are common when researching niche markets in a small geographic area, especially concerning lesser-consumed meats such as lamb and goat. Other limitations include not surveying restaurants and grocery stores about opportunities, barriers, and preferences for buying locally raised meats. This study has shown that these marketing channels are essential to the final consumer, yet local meat producers rarely use these channels. More research on these channels would provide beneficial information for local meat marketing efforts. More research could be done to measure willingness to pay for each type of meat more precisely. Finally, consumers also have a knowledge gap in comparing local meats with national brands: specifically, how much it costs to raise, process, and sell these products. Filling this knowledge gap could help consumers understand the price differential between local meats and national branded meats.

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Appendix

Table A1. Multiple Linear Regression for Frequency of Consumption

	Beef	Pork	Chicken	Turkey	Lamb	Goat
(Intercept)	55.80 ***	63.79 ***	63.08 ***	50.70 ***	58.68 *	40.46
	-6.59	-8.69	-7.34	-11.72	-24.14	-27.65
Gender	-8.27 ***	-10.44 ***	-7.45 **	-12.54 **	-15.95^	-26.82 *
	-2.25	-2.84	-2.45	-4.23	-9.72	-12.16
Age	-0.91	0.11	-0.87	-0.11	-1.19	2.74
	-0.7	-0.86	-0.75	-1.28	-3.1	-3.66
Ethnicity	-5.19 *	-6.66 *	-1.53	-2.54	-6.49	-4.48
	-2.61	-3.08	-2.71	-4.41	-10.72	-11.6
Education	-0.17	0	-0.41	4.58 *	14.26 *	19.66 **
	-1.26	-1.55	-1.3	-2.28	-5.66	-5.73
HHSize	1.94 *	0.56	1.68	3.66 *	1.01	11.57 *
	-0.92	-1.21	-1.03	-1.82	-3.74	-4.54
HHIncome	-0.91	-2.47 *	-1.69^	-3.20 *	-3.95	-8.45 *
	-0.84	-1.02	-0.9	-1.58	-3.13	-3.7
Tenure	1.77 **	1.55 *	1.75 **	1.57	-0.93	-4.47
	-0.57	-0.75	-0.62	-1.07	-2.55	-3.1
N	589	407	571	223	65	40
R2	0.05	0.06	0.04	0.08	0.16	0.47

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$, ^ $p < 0.10$

Table A2. Ordered Logit Regression for Willingness to Pay at Home

	Beef	Pork	Chicken	Turkey	Lamb	Goat
Gender	0.389*	0.251	0.309^	-0.072	-1.19*	-1.284
	-0.174	-0.215	-0.176	-0.283	-0.506	-0.974
Age	-0.221***	-0.219***	-0.246***	-0.221**	-0.210	-0.346
	-0.055	-0.065	-0.055	-0.085	-0.161	-0.271
Ethnicity	-0.116	-0.105	-0.270	-0.258	-0.220	0.575
	-0.195	-0.230	-0.192	-0.289	-0.502	-0.759
Education	0.279**	0.217^	0.259**	0.290^	0.562^	0.570
	-0.097	-0.118	-0.093	-0.151	-0.298	-0.388
	-0.070	-0.089	-0.073	-0.116	-0.205	-0.314
HHIncome	0.105^	0.125^	0.118^	-0.040	-0.015	-0.166
	-0.064	-0.075	-0.065	-0.099	-0.164	-0.283
Tenure	0.020	0.033	-0.003	-0.080	-0.075	0.205
	-0.044	-0.056	-0.045	-0.069	-0.130	-0.237
Intercepts						
1|2	0.642	0.434	0.473	-0.574	-2.179	-3.257
2|3	-0.516	-0.676	-0.531	-0.807	-1.280	-2.298
3|4	3.522	3.323	3.136	1.534	0.446	-0.471
4|5	-0.546	-0.711	-0.553	-0.817	-1.251	-2.243
5|6	5.022	5.735	4.999	3.405	2.141	1.531
6|7	-0.617	-0.978	-0.665	-0.929	-1.338	-2.284

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ^ $p < 0.1$

Table A3. Ordered Logit Regression for Willingness to Pay at a Restaurant

	Beef	Pork	Chicken	Turkey	Lamb	Goat
Gender	0.443*	0.236	0.305	0.005	-0.564	-2.67***
	-0.215	-0.257	-0.219	-0.317	-0.582	-0.637
Age	-0.082	-0.169*	-0.113^	-0.156	-0.311	-0.290
	-0.066	-0.081	-0.067	-0.101	-0.197	-0.178
Ethnicity	-0.165	-0.193	-0.219	-0.179	0.323	0.433
	-0.237	-0.289	-0.240	-0.345	-0.662	-0.508
Education	0.137	0.189	0.147	0.345*	0.312	0.298
	-0.117	-0.139	-0.114	-0.167	-0.350	-0.226
HHSize	-0.068	-0.093	-0.046	-0.144	-0.280	0.018
	-0.092	-0.121	-0.095	-0.144	-0.276	-0.206
HHIncome	0.086	0.015	0.114	0.013	0.068	0.418*
	-0.080	-0.091	-0.079	-0.115	-0.191	-0.165
Tenure	-0.078	-0.155*	-0.063	-0.042	0.232	0.127
	-0.054	-0.067	-0.056	-0.081	-0.153	-0.123
Intercepts						
1|2	0.414	-0.805	0.463	0.035	-1.594	0.975
2|3	-0.629	-0.822	-0.676	-0.911	-1.479	-1.396
3|4	2.225	1.266	2.327	1.879	0.027	1.579
4|5	-0.640	-0.818	-0.687	-0.926	-1.455	-1.408
5|6	3.365	2.304	3.469	2.968	0.755	2.732
6|7	-0.664	-0.841	-0.713	-0.973	-1.482	-1.462

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ^ $p < 0.1$