obtained from Puerto Rico in January 2009. All
the plants from the three sources produced fruits/
 bunches. All of the bunches from all sources of sup-
 ply reached maturity and were harvested, packed,
 and ripened.

Conclusion

Thirty-two of 63 plants actually produced bunches/
 fruits as early as four months after planting. The 32
 plants belonged to nine different cultivars: Novaria,
 Blue Torres Island, Cacambou, DWF Nino, Gold
 Finger, Veinte Cohol, Grand Nain, Gypungusi, and
 Chinese Cavendish. Two cultivars, Novaria
 and Chinese Cavendish, showed potential charac-
teristics of being considered short-cycle plants in
 our weather conditions, but more research needs
 to be conducted to support this conclusion. In our
 study, all ten Veinte Cohol plants not only produced
 fruits but the fruits actually reached maturity
 and were harvested before the official winter season,
 November 15. This finding is consistent with the
 results of other studies (Wallace, Krewer, and
 Fonash 2007b, 2008) that concluded that Veinte
 Cohol is a short-cycle banana cultivar that can be
 successfully grown commercially in the Southeast
 region of the U.S.

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Examining Specialty Crop Price Relationships between
Farmers Markets and Grocery Stores

Michael A. Gunderson and Ashley N. Earl

Farmers markets across the state of Florida have
been increasing in popularity over the past two
years. Very little information is available regarding
the price relationship between farmers markets and
meat / grocery stores. Further investigation of this
relationship is necessary and could yield vital infor-
mation to support further understanding of pricing
trends among these two sources. By obtaining prices
from both farmers markets and grocery stores that
are closest to each of the markets, consumers will
have tangible information regarding which of the
two offers the lowest prices for produce. Farmers who
participate in the markets will also have a better
understanding of how to more competitively price
their products and how much pricing affects con-
sumer purchase decision making. Prices at farmers
markets represent anywhere from a ten to 50 per-
cent discounted mark when compared to surrounding
grocery stores. Although this trend has so far proven
consistent, further research throughout the state of
Florida is necessary to test the hypothesis. Many
consumers are looking for: cheaper alternatives from
increasing grocery store prices. By increasing aware-
ness of discounted—and often better quality—pro-
duce Florida consumers will enjoy savings on their
shopping bill and will be more inclined to purchase
produce at local farmers markets.

Statement of Problem, Rationale and
Justification

This project obtains price information from
farmers markets and grocery stores in order to advise
farmers who participate in markets to price their
produce more competitively so that they may attract
a broader customer base and ensure the prosperity of
farmers markets. Objectives of this study include
collecting tangible price relationship data, summar-
izing and analyzing pertinent trends/relationships
among vendor responses and pricing, and distribut-
ing valuable information to farmers who participate
in the markets.

Problem Statement

What factors influence produce price differences
that will lead to cost savings among farmers mar-
kets and grocery stores? How should vendors at the
markets competitively price their produce?

Testing price difference & vendor full-time status
influence overall average percent cost savings:

$H_0: \beta_2 = 0 \quad H_1: \beta_2 \neq 0$

Supporting Hypotheses

- Produce prices are lower at farmers markets
  when compared to grocery store prices for the
  same "basket" of produce.
- The price difference between the selected
  item of produce at a farmers market and its
  average price at surrounding grocery stores
  influences the consumer’s overall average
  percentage cost savings.
- Whether the vendor is full-time or part-time
  influences how they price their produce and
  therefore influences overall average percent-
  age cost savings.

Testing the average grocery store price and aver-
age cost savings at a farmers market should influ-
ence how produce is priced at a farmers market.

$H_0: \beta_3 = 0 \quad H_1: \beta_3 \neq 0$

Supporting Hypotheses

- Most farmers have no methodic way of pricing
  their produce.
- Grocery store prices should influence farmers
  market pricing.
- Potential savings should influence farmers
  market pricing.
Dong and Lin (2009) observe that "the proportion of lower income households' food spending that goes to fruits and vegetables (17.9%) is about the same as that of someone in a higher income tax bracket (17.5%)." The actual dollar amount spent in that category—and thus the amount of the food consumed—is lower simply because less affluent people spend less on food overall. The USDA’s Economic Research Service found that there were major income-related differences in the consumption of lettuce and lettuce-based salads, melons, berries, and other fruit (Dong and Lin 2009). They also reported that women in the highest income group were twice as likely as women in the lowest income group to eat salad and fruit on a given day. The problem of providing enough fruits and vegetables across the country has always been and will always be an epidemic problem that needs to be approached in a serious manner. Raising awareness of the lower prices at farmers markets will not only support local farmers but it will ultimately incorporate more fruits and vegetables into the lives of consumers. Many patrons do not even realize the cost savings and benefit ratio of purchasing produce at a market. Grocery stores offer convenience and some quality assurance, but farmers markets provide less expensive produce and verbal quality assurance; the shopper will always know where the produce comes from and can be assured that vendors will not sell something they do not stand behind. Farmers markets "enable individual entrepreneurs and their families to contribute to the economic life of their local communities by providing goods and services that may not be readily available through formal mass markets. Thus, they embody what is unique and special about local communities and help to differentiate one community from another" (Lyson, Gillespie, and Hilchey 1995). With an economy approaching what would be deemed a national recession, the rising cost of groceries is inevitable. Now more than ever awareness of lower produce prices at markets is an immediate solution that will benefit the community and its consumers, and more importantly, ensure that farmers will have a consumer base to purchase their products.

By supporting local farmers at markets, we are enabling a prosperous and thriving agriculture future for those who are directly involved with the production, sales, and packaging of produce. There are no middlemen and there is low overhead; the only thing that is missing from the equation is further consumers to support the production of local produce. Farmers markets play a vital role in enabling farmers to gain direct access to customers. Without this access the existence of many small- and medium-sized growers would be threatened. The data obtained from this study will provide farmers with valuable information that will help them better price their products and attract a broader consumer base with published results from the study. Further advising and recommendations will be made per county for the vendors who participate in the markets.

The documented growth in farmers markets over the last decade (from 1,755 markets to 2,863 markets, an increase of 63 percent) indicates that consumers are benefiting as well. Farmers markets provide customers with direct access to fresh fruits and vegetables as well as a variety of value-added products (Payne 2002). As humans we are self-seeking individuals, and the main way to catch our eye or to stimulate our interest is to offer something that will benefit us—whether it occurs immediately or throughout the long run. Lower prices stimulate the interest of a bargain concept to consumers. Lower prices and better quality are factors that come into play when discussing farmers markets.

As Table 1 shows, "part-time growers rely heavily on a farmers market; for many it is their only outlet, and without it they would go out of business." Although some markets already have an established consumer base and a highly regarded reputation, most vendors barely make ends meet. The big question is why? If the product is better and costs less (in most situations), why are these vendors not earning a better income? The only feasible reason is that there is simply not enough published awareness about the markets. By providing concrete numbers and statistics, we will be able to provide reasoning to induce support to the local markets and ensure a prosperous future for the local farmers and agriculture within the community.

**Table 1. Vendors’ Use of Farmers Markets.**

<table>
<thead>
<tr>
<th>Vendors’ Use of Farmers Markets</th>
<th>Full-time growers</th>
<th>Part-time growers</th>
<th>Non-growers</th>
<th>Significance</th>
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<tbody>
<tr>
<td>Days at market (average)</td>
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<tr>
<td>Vendors selling more than 30 days (%)</td>
<td>11</td>
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<td>NS</td>
</tr>
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<td>36</td>
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<td>Vendors who would be out of business or hurt considerably if their current market closed (%)</td>
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<td>$500 to $1000 (%)</td>
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<td>&lt;25% of total sales (%)</td>
<td>37</td>
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**Objectives**

The main objectives of this study include:

1. Advising local farmers who participate in markets how to more competitively price their products. The primary purpose of this study is to provide concrete analysis with numbers to better advise farmers how to more competitively price their produce so that they may attract a broader consumer base. To ensure sustainable agriculture it is important to start at the bottom. To provide a better source for consumers to purchase fresh produce, we are starting at the bottom by advising local farmers on their pricing. If their product is priced competitively they will receive a broader customer base, which will ensure that they will be able to continue participating in the markets and ultimately will allow them to continue to grow and produce their products. This will ensure that Florida agriculture will have a foundation that is financially supported by the local community.

2. Collecting price analysis data among farmers markets and grocery stores. The same types of produce will be analyzed based on a price relationship alone. The results of this study will be examined on a per county basis to provide further recommendations on pricing and encouraging awareness for each market.

3. Analyzing and interpreting data. Once the price data is completed surveys have been obtained, further investigation among possible relationships between the two sources will be examined. Through this examination we hope to draw conclusions to better advise the vendors on how to increase competitively price their product(6).
Dong and Lin (2009) observe that “the proportion of lower income households’ food spending that goes to fruits and vegetables (17.9%) is about the same as that of someone in a higher income tax bracket (17.5%).” The actual dollar amount spent in that category—and thus the amount of the food consumed—is lower simply because less affluent people spend less on food overall. The USDA’s Economic Research Service found that “there were major income-related differences in the consumption of lettuce and lettuce-based salads, melons, berries, and other fruit” (Dong and Lin 2009). They also reported that women in the highest income group were twice as likely as women in the lowest income group to eat salad and fruit on a given day. The problem of providing enough fruits and vegetables across the country has always been and will always be an epidemic problem that needs to be approached in a serious manner. Raising awareness of the lower prices at farmers markets will not only support local farmers but will ultimately incorporate more fruits and vegetables into the lives of consumers. Many patrons do not even realize the cost savings and benefit ratio of purchasing produce at a market.

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4. Obtaining and distributing information among the community. As a land-grant university, the University of Florida holds a certain responsibility to the community to obtain and distribute valuable information to provide solutions for their everyday way of life. By offering consumers price information on how they can access less expensive produce, we are not only ensuring a stronger customer base for the farmers but are also providing consumers with an alternate purchasing option for produce than grocery stores that often offer a lower price.

Approach and Methods

To properly advise farmers how to more competitively price their produce, the remaining objective approaches and methods must be utilized as well. Once prices are collected from farmers markets and from the closest surrounding grocery store, a price relationship between the two will be established. Taking into consideration the quality of the produce from both sources, ease of access, price difference, quality assurance, and marketing procedures—among other factors—will help produce a more viable advising plan of action. We are not only looking at prices at the two sources; we are studying extenuating circumstances that might possibly influence a consumer’s purchase decision making. By taking all factors into consideration and shining light upon the price benefits and cost savings, we will convey advice to the farmers that participate in the markets on how to more efficiently price and advertise their product. In the same respect, we would hope to publish articles and work with the University of Florida’s Institute of Food and Agricultural Sciences (IFAS) to draw awareness to the farmers markets from the public and concentrate on conveying cost savings by shopping for produce locally at a market.

In order to collect price analysis data among farmers markets and grocery stores, we have devised a survey that will collect not only prices but feedback from the vendors participating in the markets. By collecting prices and feedback, we can further identify and investigate relationships among the two sources. Once the qualitative and quantitative data are collected they will be processed through the proper data analysis mechanics and a report of findings will be drawn up. Once a findings report is composed, information will be distributed to farmers market vendors and small or part time farmers throughout the state of Florida. Recommendations and strategy implementation will also be distributed to the vendors to help them more competitively price their items so that they may attract a broader customer base and maintain the current base of consumers that visit them regularly. A research article will also be compiled and will hopefully be recommended for publishing.

As mentioned above, all findings will be distributed throughout the state of Florida to allow vendors to properly utilize the findings and conclusions between pricing of the two sources that we have investigated. The purpose of collecting, analyzing, and distributing the information found is primarily to help the vendors who depend so heavily on these farmers markets for their main source of income. With advisement and proper evaluation of their current inventory prices, they can better position themselves to be more competitive and ensure a thriving future for themselves and the farmers markets as a whole.

Average Percent Cost Savings Model Approach

\[
Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \epsilon,
\]

\[
E[\ln(Avg\%CostSaving)] = \beta_0 + \beta_1 FMPrice + \beta_2 (AvgGP\%Price) + \beta_3 (Fulltime) + \beta_4 (FTPP\%Diff) + \epsilon,
\]

where Avg\%CostSavings is an average percent savings a consumer will achieve by purchasing produce at a given farmer’s market in Florida, compared to purchasing the same “basket” of produce at surrounding grocery stores. A natural log of the coefficient was chosen because average cost savings will be interpreted as an overall percent change; FMPrice is the price of a variety of produce at the farmers market; AvgGP\%Price is the price average of the corresponding variety of produce at the surrounding grocery stores closest to the farmers market (i.e., competitors of the farmers market); Fulltime is a dummy variable that takes on a value of 1 if the vendor considers themselves full-time or 0 if they consider themselves part-time; and FTTP\%Diff is an interaction term between the dummy variable, Fulltime, and the price difference between the farmers market and the grocery store for each variety of produce.

Pricing Model per Region Approach

\[
Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \epsilon,
\]

\[
E[\ln(Avg\%CostSaving)] = \beta_0 + \beta_1 \text{FMPPrice} + \beta_2 \text{AvgGP\%Price} + \beta_3 \ln(\text{Avg\%CostSaving}) + \epsilon,
\]

where FMPPrice is the price of a variety of produce at a farmers market in a given region \( R \); AvgGP\%Price is the price average of the corresponding variety of produce at the surrounding grocery stores closest to the farmers market within a given region \( R \); and Avg\%CostSavings is an average percentage savings a consumer will achieve by purchasing produce at a given farmers market that is a part of region \( R \), when compared to purchasing the same “basket” of produce at surrounding grocery stores. A natural log of the coefficient was chosen because average cost savings will be interpreted as an overall percent change.

Timetable

The survey implementation phase began in November of 2008 (Figure 1). Throughout this phase a literature review was conducted, pertinent questions to be asked throughout the survey instrument were created, the actual survey and data collection instruments were designed, and IRB review and approval was obtained. This first phase was conducted through January of 2009. The second phase of data collection began in February of 2009 and will continue throughout November of 2009. During this phase we will be travelling to farmers markets throughout Florida to interview vendors who are participating in the markets. We will also identify and address problems with the data collection instruments and we will start to build data analysis files. The final phase of the process is the

\[\text{Data Collection (Feb 09 - Nov 09)}\]

\[\text{Survey Implementation (Nov 08 - Jan 09)}\]

\[\text{Data Analysis & Distribution of Recommendations (Nov 09 - Apr 10)}\]

Figure 1. Timetable.
4. Obtaining and distributing information among the community. As a land-grant university, the University of Florida holds a certain responsibility to the community to obtain and distribute valuable information to provide solutions for their everyday way of life. By offering consumers price information on how they can access less expensive produce, we are not only ensuring a stronger customer base for the farmers but are also providing consumers with an alternate purchasing option for produce than grocery store that often offers a lower price.

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\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \quad \text{where AvgCostSavings is an average percent savings a consumer will achieve by purchasing produce at a given farmer's market in Florida, when compared to purchasing the same "basket" of produce at surrounding grocery stores. A natural log of the coefficient was chosen because average cost savings will be interpreted as an overall percent change; FMPPrice is the price of a variety of produce at the farmers market; AvgGPSPrice is the price average of the corresponding variety of produce at the surrounding grocery stores closest to the farmers market (i.e., competitors of the farmers market); Fulltime is a dummy variable that takes on a value of 1 if the vendor considers themselves full-time or 0 if they consider themselves part-time; and FTTPTPrDiff is an interaction term between the dummy variable, Fulltime, and the price difference between the farmers market and the grocery store for each variety of produce.}
\]

Pricing Model per Region Approach

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Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \quad \text{where FMPPrice}_{\text{Rn}} = \beta_{0,\text{Rn}} + \beta_{1,\text{Rn}} (\text{AvgGPSPrice})_{\text{Rn}} + \beta_{2,\text{Rn}} \text{ln(Avg\%CostSavings)}_{\text{Rn}},
\]

where FMPPrice_{Rn} is the price of a variety of produce at a farmers market in a given region Rn; AvgGPSPrice_{Rn} is the price average of the corresponding variety of produce at the surrounding grocery stores closest to the farmers market within a given region Rn; and Avg\%CostSavings is an average percentage savings a consumer will achieve by purchasing produce at a given farmers market that is a part of region Rn, when compared to purchasing the same “basket” of produce at surrounding grocery stores. A natural log of the coefficient was chosen because average cost savings will be interpreted as an overall percent change.}

Timetable

The survey implementation phase began in November of 2008 (Figure 1). Throughout this phase a literature review was conducted, pertinent questions to be asked throughout the survey instrument were created, the actual survey and data collection instruments were designed, and IRB review and approval was obtained. This first phase was conducted through January of 2009. The second phase of data collection began in February of 2009 and will continue through November of 2009. During this phase we will be travelling to farmers markets throughout Florida to interview vendors who are participating in the markets. We will also identify and address problems with the data collection instruments and we will start to build data analysis files. The final phase of the process is the
data analysis and distribution of recommendations/ findings phase. This phase will begin November of 2009 and will continue through April of 2010. We will process the data and analyze the trends and relationships that may or may not exist between farmers markets and grocery stores. Results and findings will be distributed to vendors and small or part-time farmers throughout Florida; we will also submit articles to pertinent journals and to IFAS. Recommendation implementation will be the primary objective during this last phase, and vendors will be able to obtain all information available about our research results.

Results and Conclusions

Data were collected from farmers markets across the state of Florida. The data were further broken down into five regions across the state. Each region area was selected purely on the basis of farmers market atmosphere and how similar the markets were to one another. The markets are essentially competitors to one another. Grouping markets in this way will ensure the appropriateness of each pricing model per region.

Average Percent Cost Savings Model:

\[ \text{Average Percent Cost Savings} = \beta_0 + \beta_1(\text{FMPrice}) + \beta_2(\text{AvgGSPrice}) + \beta_3(\text{Fulltime}) + \beta_4(\text{FTPExDiff}) + \epsilon \]

Predicted Pricing Model; modeled per Region:

\[ \text{FMPrice}_p = \beta_{0p} + \beta_{1p}(\text{AvgGSPrice})_p + \beta_{2p}(\text{AvgCostSaving})_p + \epsilon \]

\[ \text{FMPrice}_p = \beta_{0p} + \beta_{1p}(\text{AvgGSPrice})_p + \beta_{2p}(\text{AvgCostSaving})_p + \epsilon \]

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Addressing First Objective

**Promoting Average Grocery “Basket” Cost Savings to Consumers**

Testing for differences in price (GS-FM) and vendor full-time status influence on overall average percent cost savings:

\[ H_0: \beta_1 = 0 \quad H_1: \beta_1 \neq 0 \]

F-Test:

\[ F = \frac{54.75}{5.44} = 31.99 \]

Since 31.99 > 3.199, we reject the null hypothesis in favor of the alternative hypothesis, which states that the difference in price (GS-FM) and vendor full-time status do influence overall percent cost savings.

(14) \[ E(\text{AvgCostSaving}) = -0.561 - 0.823(\text{FMPrice}) + 0.2234(\text{AvgGSPrice}) - 0.2058(\text{Fulltime}) + 0.0716(\text{FTPExDiff}) \]

**Comments**

A one-unit increase in the price of produce at a farmer's market causes change in average cost savings to decrease by 0.823 percent. A one-unit increase in the average grocery store price causes change in average cost savings to increase by 0.2234 percent. We first expected that if the vendor was full-time, their prices would be lower (less overhead/product). However, the opposite is the case. When a vendor is considered to be full-time, the change in average cost savings decreases by 0.2058 percent.

Addressing Second Objective

**Advising Vendors at Farmers Markets on How to Competitively Price Their Produce**

The average grocery store price and average cost savings at a farmers market should influence how produce is priced at a farmers market.

Test: \[ H_0: \beta_1 = 0 \quad H_1: \beta_1 \neq 0 \]

F-Test for each Region:

\[ F_{0.01} = 251.00 \quad F_{0.05} = 4.977 \quad P-Val: <0.0001 \]

Reject \( H_0 \)

\[ F_{0.01} = 75.58 \quad F_{0.05} = 4.787 \quad P-Val: <0.0001 \]

Reject \( H_0 \)

\[ F_{0.01} = 198.21 \quad F_{0.05} = 4.787 \quad P-Val: <0.0001 \]

Reject \( H_0 \)

We would conclude that the average grocery store price and average cost savings at a farmers market does influence how produce is priced at the market.

**Comments**

We will use the model for Region 2 as an example for interpretation. A one-unit increase in the average price of produce at a grocery store will cause that produce's price to increase, but only by 0.426. This is more than a 50 percent savings obtained by purchasing produce at a farmers market. A one percent increase in average cost savings will cause the expected farmers market price for an item to decrease by 0.6427. This makes sense, because in order for average cost savings to increase the FMP price must decrease. Although a D.V. cannot impose a change on an L.V., the relationship makes sense.

**References**


data analysis and distribution of recommendations/ findings phase. This phase will begin November of 2009 and will continue through April of 2010. We will process the data and analyze the trends and relationships that may or may not exist between farmers markets and grocery stores. Results and findings will be distributed to vendors and small or part time farmers throughout Florida; we will also submit articles to pertinent journals and to IFAS. Recommendation implementation will be the primary objective during this last phase, and vendors will be able to obtain all information available about our research results.

Results and Conclusions

Data were collected from farmers markets across the state of Florida. The data were further broken down into five regions across the state. Each region area was selected purely on the basis of farmers market atmosphere and how similar the markets were to one another. The markets are essentially competitors to one another. Grouping markets in this way will ensure the appropriateness of each pricing model per region.

Average Percent Cost Savings Model:

\[
\text{(3) } \ln(\text{Avg\%Cost Savings}) = \beta_0 + \beta_1(\text{FMP Price}) + \beta_2(\text{Avg GSP Price}) + \beta_3(\text{Fulltime}) + \beta_4(\text{FTTP Price Dif}) + \epsilon .
\]

Predicted Pricing Model; modeled per Region:

\[
\text{(4) } \ln(\text{Avg\%Cost Savings}) = \beta_0 + \beta_1(\text{FMP Price}) + \beta_2(\text{Avg GSP Price}) + \beta_3(\text{Fulltime}) + \epsilon ,
\]

\[
\text{(5) } \ln(\text{Avg\%Cost Savings}) = \beta_0 + \beta_1(\text{FMP Price}) + \beta_2(\text{Avg GSP Price}) + \beta_3(\text{Fulltime}) + \epsilon ,
\]

\[
\text{(6) } \ln(\text{Avg\%Cost Savings}) = \beta_0 + \beta_1(\text{FMP Price}) + \beta_2(\text{Avg GSP Price}) + \beta_3(\text{Fulltime}) + \epsilon ,
\]

\[
\text{(7) } \ln(\text{Avg\%Cost Savings}) = \beta_0 + \beta_1(\text{FMP Price}) + \beta_2(\text{Avg GSP Price}) + \beta_3(\text{Fulltime}) + \epsilon ,
\]

\[
\text{(8) } \ln(\text{Avg\%Cost Savings}) = \beta_0 + \beta_1(\text{FMP Price}) + \beta_2(\text{Avg GSP Price}) + \beta_3(\text{Fulltime}) + \epsilon .
\]

Full Pricing Model per Region

\[
\text{Region 1: Avg CS/b} = \text{SP} 0.69, \text{Avg \%CS} 30.93\% .
\]

\[
\text{Region 2: Avg CS/b} = 0.63, \text{Avg \%CS} 10.59\% .
\]

\[
\text{Region 3: Avg CS/b} = 0.64, \text{Avg \%CS} 28.71\% .
\]

\[
\text{Region 4: Avg CS/b} = 0.62, \text{Avg \%CS} 39.03\% .
\]

\[
\text{Region 5: Avg CS/b} = 0.22, \text{Avg \%CS} 13.06\% .
\]

Addressing First Objective

Promoting Average Grocery “Basket” Cost Savings to Consumers

Testing difference in price (GS-FM) and vendor full-time status influence on overall average percent cost savings:

Test: \( H_0: \beta_1 = 0 \quad H_1: \beta_1 \neq 0 \).

F-Test:

\[
F_{\alpha, \nu_1, \nu_2} = 54.75, \quad F^{\ast} = 3.191 .
\]

Because 54.75 > 3.191, we reject the \( H_0 \) and conclude in favor of the \( H_1 \) which states that the difference in price (GS-FM) and vendor full-time status do influence overall percent cost savings.

Comments

A one-unit increase in the price of produce at a farmers market causes change in average cost savings to decrease by 0.823 percent. A one-unit increase in the average grocery store price causes change in average cost savings to increase by 0.2234 percent. We first expected that if the vendor was full-time their prices would be lower (less overhead/product). However, the opposite is the case. When a vendor is considered to be full-time, the change in average cost savings decreases by 0.2058 percent.

Addressing Second Objective

Advising Vendors at Farmers Markets on How to Competitively Price Their Produce

The average grocery store price and average cost savings at a farmers market should influence how produce is priced at a farmers market.

Test: \( H_0: \beta_1 = 0 \quad H_1: \beta_1 \neq 0 \).

F-Test for each Region:

\[
F_{\alpha, \nu_1, \nu_2} = 251.00, \quad F^{\ast} = 4.977, \quad \text{P-Val: <0.0001} \quad \text{Reject } H_0 .
\]

\[
F_{\alpha, \nu_1, \nu_2} = 75.58, \quad F^{\ast} = 4.787, \quad \text{P-Val: <0.0001} \quad \text{Reject } H_0 .
\]

\[
F_{\alpha, \nu_1, \nu_2} = 198.21, \quad F^{\ast} = 4.787, \quad \text{P-Val: <0.0001} \quad \text{Reject } H_0 .
\]

We would conclude that the average grocery store price and average cost savings at a farmers market does influence how produce is priced at the market.

Comments

We will use the model for Region 2 as an example for interpretation. A one-unit increase in the average price of produce at a grocery store will cause that same produce’s price to increase, but only by 0.426. This is more than a 50 percent savings obtained by purchasing produce at a farmers market. A one percent increase in average cost savings will cause the expected farmers market price for an item to decrease by 0.6427. This makes sense, because in order for average cost savings to increase the FMPrice must decrease. Although a D.V. cannot impose a change on an I.V., the relationship makes sense.

References

