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In A Pickle: A Marketing Analysis of Images and Textual Descriptions on Food Packages and How They Influence College Students' Grocery Purchases

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IN A PICKLE:
A MARKETING ANALYSIS OF IMAGES AND TEXTUAL DESCRIPTIONS
ON FOOD PACKAGES AND HOW THEY INFLUENCE COLLEGE
STUDENTS' GROCERY PURCHASES

by

LAUREN M. DOYLE

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Sociology
in the College of Sciences
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at the University of Central Florida
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ABSTRACT

The reason for confusion in grocery stores is the fact that many of the same types of food products are being marketed with different labels. Many packaging labels contain keywords such as “organic,” “farm fresh,” and “all natural.” Some products incorporate the use of images such as a picturesque farm or a “happy” cow. Using data collected from the surveys of 349 college students, this study examines student choices of food products based on organic and non-organic and brand and generic foods. Variables also examined include sex, health, and living arrangements. The results of this study can help provide an understanding about the mindset of the average college student while shopping at the grocery store. Based on the results there is evidence that students are significantly more likely to choose food products that are non-organic and generic. Based on the five variables used, sex and concern for nutritional value were the most significant in predicting a student’s purchase of brand and organic food products, while body mass index, frequency of looking at nutritional facts labels, and living arrangement were not significant.

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TABLE OF CONTENTS

INTRODUCTION	1
LITERATURE REVIEW	2
Sex	2
Health.....	4
Living Arrangements	6
THEORETICAL ORIENTATION.....	8
RESEARCH QUESTIONS	9
HYPOTHESES	10
DATA AND METHODS	11
Dependent variables.....	11
Independent variables	13
Control Variables	14
Appropriate Statistical Method.....	14
RESULTS	15
DISCUSSION	20
APPENDIX: THE SURVEY UTILIZED TO GATHER DATA FROM COLLEGE STUDENTS	24
REFERENCES	53

LIST OF TABLES

Table 1: Frequency and Percentage for Independent Variables	15
Table 2: Logistic Regression Results – Model 1 and Model 2	16
Table 3: Logistic Regression Results – Model 3 and Model 4.....	17
Table 4: Logistic Regression Results – Model Five and Model Six.....	18

INTRODUCTION

In today's society, grocery stores offer a vast variety of food products. While this may appear to be an ideal situation for most individuals, for some people the number of different food items may be overwhelming or confusing. The reason for confusion in grocery stores is the fact that many of the same types of food products are being marketed with different labels.

Companies incorporate the use of marketing techniques such as having packaging labels contain keywords such as "organic," "farm fresh," and "all natural," just to name a few. Some products also use images on the packages such as a picturesque farm or a "happy" cow. The purpose of this investigation is to analyze and answer the research question of how these marketing symbols have an effect on the way college students are influenced by pictorial or textual descriptions on food packages. The methodology of the present study consists of a survey with qualitative and quantitative questions, including images of food products and questions about the sociological factors, such as, sex, health, and living arrangements. The data were collected through an anonymous survey randomly distributed to college students located in the Central Florida area. The outcome of this study can help provide a better understanding of the mindset about the average college student while shopping at the grocery store.

LITERATURE REVIEW

In the United States, there are a number of different grocery stores as well as a vast variety of food products. According to recent studies, two-thirds of the buying decisions consumers make are at the actual site of their purchase and thus, the package design becomes the "silent salesman" in regard to conveying messages to the buyer (Wang & Chou, 2011). This creates competition for companies to compete with one another by using marketing techniques as a way to convince people to purchase their products. Due to a diverse selection of food products, this can become confusing to college students who are transitioning into adulthood. Food manufacturers understand the importance of marketable food packaging because it projects the first impression of a food product's quality, brand, and value (Underwood, Klein & Burke, 2002). It is important to understand the reasoning behind students' decisions about which food products they purchase at the grocery store. They may select foods based on the images on the packaging or the keywords on packages such as "all natural" or "farm fresh." Students may also select products because they like a certain product or it is a product they always had in their family. These are some of the reasons why students may select certain products, but the current study also focuses on factors such as gender, health, and living arrangements, which may affect students' purchasing decisions for certain food products.

Sex

The United States currently is dealing with issues of obesity and overweight individuals throughout the country. There is also a concern with healthy and poor eating habits that are established early in one's life and they continue to be repeated later on in a person's life. According to a study conducted by Annette Levi, Kenny K. Chan, and Dan Pence, sex was

analyzed to see if there was a relationship between college students' involvement concerning food decisions and if masculinity had an affect on male students' food decisions (2006). Based on their results, women students who participated in the survey scored higher than the men who participated on food choices that were associated with a healthy lifestyle such as reading food labels or making healthier food choices. Men, on the other hand, had significantly lower levels of interest and involvement in their food decisions compared to the women in this study. Some of the anecdotal comments women participants stated included, "I never eat without considering what's in it" and "I simply do not snack. There's too much fat in processed foods." Men in the study had completely different comments such as, "I don't care what I eat as long as there's a lot of it and it's cheap" and "I don't eat diet food. I'm hungry in 30 minutes and it tastes like crap." The difference between the comments made by the men and women participants provides examples of the ideological pressures men and women face in regard to food. As long as men have little involvement in food decisions based on masculine ideology, then "real" men will continue to not read food product labels and be less likely to choose healthy food products (Levi, Chan, and Pence, 2006).

Women are currently being bombarded by images from the media that display the "ideal" body type for women. Magazines, advertisements, music videos, and television shows depict women as being thin and most of the time the media utilizes Photoshop to create body images that are unattainable for the average woman. Based on a study conducted by LaCaille, Dauner, Krambeer, and Pedersen, many young men wanted to gain weight in muscle rather than lose weight, while women expressed fears of getting fat and being negatively judged by their male and female peers (2011). This fear of gaining weight may be the reason many women feel the

pressure to eat healthy. This includes women reading food labels and purchasing foods based on their nutritional value. In a study conducted by Rappoport, Peters, Downey, McCann, and Huff-Corzine, women chose chef salads and iced tea for pleasure foods and they also selected an apple for a snack, and for a meal they selected broiled chicken and fruit salad as they had a higher concern for health value compared to men (1993).

Health

As obesity remains a major health problem throughout the United States with three out of every five Americans being overweight, the desire to be a healthy individual increases as well (Pollan, 2006). The issue with trying to live a healthy lifestyle is that food manufacturers take advantage of individuals by creating food products and selling them as “nutritional” even though they are not. Nutritional marketing is considered to be influential in the purchasing and consumption behavior of individuals, which may be a cause for obesity in the United States (Colby, Johnson, Scheett & Hoverson, 2010). Students have increasingly busy lifestyles, but they may still want something that is considered nutritious and quick while taking price and taste into account as well. Conflicts start to occur especially when there are “crowded food labels that often contain textual and graphic labeling statements for the many nutritional or health benefits that manufacturers and retailers choose to feature” (Andrews, Lin, Levy, and Lo, 2014). In Temple Northrup’s study, he mentions that food manufacturers in the United States are including “buzzwords” on their products that include organic, all natural, and whole grain as a way to market the food product as being better for individuals than products without these labels (2014). In his study, college students were asked to rate how “healthy” the products were that they were viewing. Every product that was labeled with the above listed marketing “buzzwords” was

deemed “significantly healthier than the exact same product that had the one word or image removed” (2014, p. 15). Alas, there appears to be a connection between these keywords that food manufacturers incorporate on their products and health.

Organic food products have become quite popular among consumers, and according to Pollan, “the word 'organic' has proved to be the most powerful word in the supermarket: Without any help from government, farmers and consumers working in this way have created an \$11 billion industry that is now the fastest growing sector of the food economy” (2006, p. 136). Not only can health be a factor that helps influence an individual’s eating habits, but a word associated with being the “healthiest” option is even more influential. According to Hjelmars’ study of consumer’s purchase of organic food products, the participants who stated they purchased organic foods for health aspects made statements such as, “when you buy organic food you know you put fewer toxic substances in your mouth because they don’t use pesticides,” “I eat a lot of apples and I find it very important that they are organic. Conventional apples can be sprayed and I like to avoid pesticides,” and “I buy organic whole milk because my husband has learned from a study that it can prevent breast cancer” (2011, p. 339). These reasons are just some of the motives people have for purchasing organic foods. An issue with organic foods is that they are much more expensive than conventional foods, which could deter college students from purchasing them based on the students being unemployed or having low-income. According to Lee, Kniffin, and Wansink, the people who read nutritional labels on foods were more likely to engage in deliberative thinking when it came to buying foods and they were not always quick to assume a food was healthy or not based on an organic label (2013). That said, college students who are conscious about nutritional labels and who consider themselves healthy

are less likely to be fooled by food manufacturers who try to sell products as being “healthy” when they truly are not.

Living Arrangements

College students usually live on campus in dorms or in off-campus housing with family, roommates or by themselves. The way a college student’s living arrangements are set up can have an effect on his or her eating habits. According to LaCaille (2011), students who live off-campus most likely have to cook for themselves and this could contribute to eating healthy or it could also be detrimental to healthy eating habits. Kurt Lewin developed a theory known as the “gatekeeping theory,” which is defined as a process for food to make it from the store to the table; one person is primarily responsible for the food to be brought into the household (1943). The housewife was considered the main gatekeeper because she was the one who normally purchased the food and prepared the meals and thus “controlled the gate” to what foods would make it to the dinner table. Statistics show that a majority of the beverages and foods marketed to consumers under the age of eighteen years old are unhealthy and do not meet the standards of the United States Department of Agriculture's nutritional standards. It is important for parents to introduce healthy eating habits to their children at a young age so they are able to make healthy decisions when they grow up (Hayes, 2012). As a college student, many individuals are away from home for the very first time and as a result they may have lost their gatekeeper. Without a gatekeeper, a student is forced to become their own gatekeeper and to make decisions about his or her own food. In regards to food packages with images or textual descriptions, students who are on their own must decipher which products are the healthiest, most cost effective, most tasty, and most convenient. This may be confusing for students who have never had to really purchase

food while growing up. For the students who may have done their own shopping while growing up, this may not change their eating habits when entering college.

In college, a number of students have low-incomes because they do not have the degrees needed for professional careers. They may even be working for minimum wages. Families of students that are considered wealthier may be able to purchase foods that are more expensive such as organic food products. This may be beneficial to the students who still live with their parents or wealthier parents may provide money that allows these students to purchase higher quality foods. Because organic foods are more expensive than conventional foods, students may purchase “all natural” foods or products with other “buzzwords” as a way to buy foods that are considered healthier than traditional food products. According to Axelson, “as personal income increases, the possibility of adequate nutrient intakes seems to increase,” but “higher incomes or food expenditures do not necessarily result in an adequate diet” (1986, p.349).

In conclusion, the sociological aspects of gender, health, and living arrangements/family income, are important to this current study because they provide aspects that help to answer the research question about what influences college students’ decisions on food products based on the images and textual descriptions on food packaging. In the survey questions that ask why students selected certain food products, the answers provided will be compared to the answered questions on demographics, health, and living arrangements/family income.

THEORETICAL ORIENTATION

Gatekeeping theory developed by Kurt Lewin in 1943 during WWII can be applied to gender, health, and living arrangement/family income, which influence college students' food purchasing decisions. According to Lewin, a gatekeeper is defined as the person who controls and monitors choosing, buying, and cooking the food that is served to others (1943). Gatekeepers of a family are usually a parental figure who controls what students would have eaten when they were younger. The college students who live on campus or away from home have most likely lost their previous gatekeeper. As a result, students are forced to become their own gatekeeper. Students who are away from home may purchase foods that their gatekeeper always bought and this would most likely have an effect on which food products students purchase based on familiarity. If a student currently lives with a gatekeeper, they may not purchase the food and as a result they will be unsure as to which food products to select during the survey.

Learning theory is also important to this study due to the fact that individuals learn in their homes as children to eat certain foods so they may choose that product because they know the label. People also learn from advertising that certain types of food are better than others such as, naturals or organics and thus it would be expected that students choose labels with these words.

RESEARCH QUESTIONS

1. Do the variables sex, health, and living arrangements influence the food products students will purchase at the grocery store?
2. Are students more likely to choose organic or non-organic foods and are they more likely to choose products that are generic or name brand?

HYPOTHESES

Hypothesis 1: It is expected that sex will significantly influence the choices of food products based on the images on the food packaging.

Null Hypothesis 1: There is no relationship between sex and choices on food products.

Hypothesis 2: It is expected that students' with a higher interest in health-related food products will significantly influence food product decisions based on descriptions on food packaging.

Null Hypothesis 2: There is no relationship between a high interest in health and food product choices.

Hypothesis 3: Students living with friend(s) or roommate(s) are expected to significantly influence students' decisions about which food products to purchase.

Null Hypothesis 3: There is no relationship between students who live with friend(s) or roommate(s) and students' decisions about which food products to purchase.

DATA AND METHODS

This study closely examines which types of foods college students are more likely to purchase while shopping at the grocery store. The current work explores how sex, health, and living arrangements may influence college students' decisions when it comes to purchasing food. The dependent variables are six food products, which include chicken, milk, strawberries, spinach, butter, and jelly. The independent variables measured include sex, health, and living arrangements. Students were also asked to provide answers through qualitative questions as to why they chose the food products that they selected. . The students' answers to the qualitative questions about why they selected certain food products were placed into an online word counter from www.wordcounter.net, which was found through the Google search engine.

This study consisted of a survey questionnaire in which college students were to answer 44 questions through an Internet survey. The questions were approved through the University of Central Florida Institutional Review Board. The study consisted of a non-probability sample and a convenience sample of college students in the Central Florida area based on individuals as the unit analysis. The survey was distributed online via e-mail to college faculty members with a request for them to post the link to the survey on their class web pages. Students were also contacted by e-mail requesting that they participate in the survey with the survey link included. They were asked to partake in the survey, which was anonymous and voluntary. The survey is located in Appendix One.

Dependent variables

In this study there are images of eight different types of food products. The images were taken of actual food products that were captured through the camera of my cell phone at three

different grocery store locations, which included Publix, Target, and Whole Foods Market. The different options of food products was to simulate what it is like while shopping at the grocery store. The questions that incorporated the images of chicken, milk, strawberries, spinach, butter, and jelly are included in the results, but the questions about eggs and peanut butter were left out of the analysis because they were unable to be split into a model of organic or non-organic and brand name or generic. Students had the option to choose which type of food product they prefer and then they were asked to include a brief description about why they selected each food item. The questions are left open ended as a way to gather qualitative data. Students who responded with answers that included information about images on the food packaging or descriptive words on the packages helped analyze if they had an effect on college students' purchases at the grocery store.

The first model represents students' choice of chicken, which analyzes the dependent variable using a dummy variable where "0" = generic and "1" = name brand food products. Model 2 is milk, which represents students' choice of milk, with a dummy variable where "0" = non-organic and "1" = organic. Model 3 represents students' choice of strawberries, with a dummy variable where "0" = non-organic and "1" = organic. Model 4 represents students' choice of spinach, with a dummy variable where "0" = non-organic and "1" = organic. Model 5 represents students' choice of butter, with a dummy variable where "0" = generic and "1" = brand name. Model 6 represents students' choice of jelly, with a dummy variable where "0" = non-organic and "1" = organic.

Independent variables

Three major aspects are measured in this study as a way to test their influence on college students' choice of food products while shopping at the grocery store. These include sex, health, and living arrangements. Respondents were asked in the survey to choose which sex applied to themselves. The sex of the student participant was represented by a nominal variable incorporating the use of a dummy variable where "0" = male and "1" = female.

Participants were also asked questions that related to their overall interest in health, including concern for nutritional value, the student's body mass index (BMI) and how often he or she looks at nutritional facts on food packages. The question on BMI included questions about a student's weight and height, which was then calculated to determine BMI. According to the National Heart, Lung, and Blood Institute website, the categories of BMI are underweight = <18.5, normal weight = 18.5-24.9, overweight = 25-29.9, and obesity = BMI of 30 or greater. Students were asked about how concerned they were about the nutritional value of their food and they were given a choice of never, rarely, sometimes, often, and always. In utilizing a dummy variable, the responses were divided into "0" = never and rarely and "1" = sometimes, often, and always. Students were also asked how often they look at the nutrition facts label on the back of food products when having to purchase food from the grocery store. They were given a choice of never, rarely, sometimes, often, and always. A dummy variable was utilized and the responses were divided into "0" = never and rarely and "1" = sometimes, often, and always.

Respondents were also asked about their current housing situation and with whom they currently live. Students had a choice of friend(s)/roommate(s), family or alone. A dummy

variable was utilized and the responses were divided into "0" = alone and "1" = with family, friend(s) or roommate(s).

Control Variables

The measure for a student's year of college is divided into choices of freshman, sophomore, junior, senior, graduate student or not a college student. The age question is a fill-in question where they were to give their age in years on their last birthday. The measure of race is divided into White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian and other Pacific Islander, and then there is a separate question for people of Hispanic, Spanish or Latino(a) origin.

Appropriate Statistical Method

Qualtrics, an Internet surveying system, was used to collect the data from the participants. The software package, Statistical Package for the Social Sciences (SPSS), was utilized to code and analyze the data collected through Qualtrics. The descriptive statistics and correlations were produced through SPSS. Binary logistic regression was used to examine the cause-effect statistical relationships that existed between the dependent and independent variables. The qualitative responses students provided were put through a word counter to examine which words students used the most when explaining why they chose a certain product.

RESULTS

The descriptive statistics of the independent variables are shown below in Table 1. All of the independent variables display the frequencies in percentages and number of occurrences, while the BMI was a scale variable. A mean of the total sample was utilized instead. There are a total of 349 participants and a total of 31 missing cases (8.9%).

Table 1: Frequency and Percentage for Independent Variables

Independent Variables	Frequencies and (Percentages) with Means for Continuous Variables
· BMI	Mean = 24.21
· Female	244 (69.9%)
· Male	88(25.2%)
· Live Alone	28 (8.0%)
· Live With Friend(s)/Roommate(s) or Family	301 (86.2%)
· Never-Rarely concerned with Nutritional Value	25 (7.2%)
· Sometimes-Always Concerned with Nutritional Value	310 (88.8%)
· Never-Rarely Concerned with Nutritional Facts	48 (13.8%)
· Sometimes-Always Concerned with Nutritional Facts	286 (81.9%)

N =349

For BMI, the average body mass index was 24.21. Based on the BMI scale, the average college student is at a normal weight based on the BMI collected from this data. For the sex variable, there was 69.9% of women who participated in the survey and 25.2% of men who participated in the survey. The results showed that only 8% of students lived alone, while 86.2% of students lived with friend(s), roommate(s) or family. In regard to the concern students had with the nutritional value of food they purchase, only 7.2% of students were never or rarely concerned and 88.8% of students were sometimes, often, or always concerned with nutritional

value. Results indicated that students who never or rarely looked at nutritional facts was only 13.8% compared to the 81.9% of students who sometimes, often or always looked at nutritional facts labels.

The dependent variables in this study are binary meaning that the dependent variables take on values between 0 and 1. Thus, binary logistic regression is utilized because the variables can only be 0 and 1.

Table 2: Logistic Regression Results – Model 1 and Model 2

Dependent Variables	Model 1 (Chicken)			Model 2 (Milk)				
	Generic	Name Brand	Sig	Non-organic	Organic	Sig		
Frequencies and Significance	224 (70.4%)	94 (29.6%)	.206	183 (57.5%)	133 (41.8%)	.000		
Independent Variables								
	<i>B</i>	<i>SE</i>	<i>Exp (b)</i>	<i>Sig</i>	<i>B</i>	<i>SE</i>	<i>Exp (b)</i>	<i>Sig</i>
BMI	-0.24	.028	.977	.398	.022	.026	1.022	.408
Female	.642	.309	1.900	.038*	.836	.287	2.306	.004**
Live With	.673	.570	1.960	.238	.247	.450	1.280	.583
Nutritional Value	-.188	.491	.829	.702	1.935	.774	6.925	.012*
Nutritional Fact	-.291	.371	.748	.433	.450	.388	1.568	.247

In Model 1 there are a total of 31 missing cases (8.9%). In Model 2 there are 33 missing cases (9.5%).

^a* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2 illustrates the frequencies as well as the logistic regression for the dependent models of chicken and milk with the independent variables (BMI, sex, living arrangements, nutritional value, and nutritional facts). Based on the results in Model 1, 70.4% of students chose

generic chicken compared to 29.6% of students who selected name brand chicken. The only variable that was significant in this Model was females ($p=.038$) and the Model did not reach significance. This indicates that women were more likely than men to choose generic chicken. In Model 2 for milk, the results indicate that the Model is significant at $p<.001$. Results show that the independent variables female and nutritional value were the only significant variables displaying an influence on what type of food products students purchase.

Table 3: Logistic Regression Results – Model 3 and Model 4

Dependent Variables	Model 3 (Strawberries)			Model 4 (Spinach)				
	Non-organic	Organic	Sig	Non-organic	Organic	Sig		
Frequencies and Significance	188 (59.1%)	135 (42.5%)	.396	99 (31.1%)	220 (69.9%)	.001		
Independent Variables								
	<i>B</i>	SE	Exp (b)	Sig	<i>B</i>	SE	Exp (b)	Sig
BMI	-.025	.025	.975	.326	-.038	.027	.963	.167
Female	.056	.263	1.058	.831	.532	.277	1.702	.054
Live With	.353	.431	1.423	.413	.212	.440	1.236	.630
Nutritional Value	.439	.502	1.551	.381	1.464	.488	4.324	.003**
Nutritional Fact	.493	.370	.566	.476	.123	.378	1.131	.746

In Model 3 there are 26 missing cases (7.4%). In Model 4 there are 30 missing cases (8.6%).

^a $p<0.05$, ** $p<0.01$, *** $p<0.001$*

Table 3 displays logistic regression results for the Models examining, the influence of the independent variables BMI, sex, living arrangements, nutritional value, and nutritional facts on strawberries and spinach.. Based on the results, 59.1% of students chose non-organic

strawberries, while 42.5% of students chose organic strawberries. There was a total of 31.1% of students who chose non-organic spinach compared to 69.9% of students who chose organic spinach. The results signify that the model of strawberries is not significant while the model of spinach is significant. In Model 3, the independent variables had no significance on strawberries. In Model 4 the results show that the influence of the independent variables on spinach is significant at $p < .001$. The independent variable female was slightly significant ($p < .05$) and nutritional value was significant at $p < 0.01$.

Table 4: Logistic Regression Results – Model 5 and Model 6

Dependent Variables	Model 5 (Butter)			Model 6 (Jelly)				
	Generic	Name Brand	Sig	Non-organic	Organic	Sig		
Frequencies and Significance	180 (56.6%)	139 (43.7%)	.605	187 (58.8%)	129 (40.6%)	.405		
Independent Variables								
	<i>B</i>	SE	Exp (b)	Sig	<i>B</i>	SE	Exp (b)	Sig
BMI	.027	.025	1.028	.276	-.011	.025	.989	.668
Female	.205	.262	1.228	.434	-.011	.265	.989	.968
Live With	-.019	.423	.981	.964	.248	.436	1.281	.570
Nutritional Value	.416	.484	1.516	.390	.662	.525	1.939	.207
Nutritional Fact	-.415	.356	.660	.244	.122	.368	1.130	.740

In Model 5 there are 30 missing cases (8.6%). In Model 6 there are 33 missing cases (9.5%).

^a $p < 0.05$, $**p < 0.01$, $***p < 0.001$

Table 4 presents the results of logistic regression Model for butter and jelly, as they are influenced by the independent variables, BMI, sex, living arrangements, nutritional value, and nutritional facts. Based on the results, in Model 5, students chose generic brand butter by 56.6% compared to 43.7% of those who selected name brand butter. In Model 6, students chose non-organic jelly by 58.7% compared to 40.6% of students who selected organic jelly. Results also indicate that Models 5 and 6 were not significant and none of the independent variables used in the logistic regression reached significance.

DISCUSSION

This study investigated which type of food products students purchase while shopping at the grocery store. Sex, health interest, and living arrangements were examined to establish if they had an influence on students' purchasing choices. Based on the results of the word counter, the top 12 words students included in their responses were 1. organic, 2. brand, 3. Publix (used for generic products), 4. looked better, 5. packaging, 6. cheapest, 7. cheaper, 8. expensive, 9. natural, 10. quality, 11. taste, 12. price. Based on the three hypotheses, none were supported by the findings.

Hypothesis one stated that sex will significantly influence the choices of food products based on the images on the food packaging, but the findings did not support this hypothesis. Based on the results, it appears that students chose products based on what was on the descriptions more so than they did because of images on the packaging. This is evident in the results based on the fact that students chose more generic and non-organic products. Hypothesis two stated that it is expected that students' with a higher interest in health-related food products will significantly influence food product decisions based on descriptions on food packaging, but this only appeared to be significant in two out of six of the models. The results indicate that 88.9% of the students were sometimes, often or always concerned with nutritional value of their food and 81.9% of students were sometimes, often or always concerned with looking at nutritional facts on food labels. Students appear to be concerned with their health overall, but the findings indicate that generic and non-organic food products are chosen more compared to products with descriptions such as "organic" or "all-natural." Students may be concerned with their health, but at the same time they might only be able to afford food products that are generic

or non-organic based on their income. “Organic” was the number one word used by students in their explanation responses, but “cheapest,” “cheaper,” “expensive,” and “price” were also mentioned, which might explain how students would like to purchase organic foods, but they also understand that they are generally always more expensive than conventional food products. If students do purchase organic or name brand products, they may be selective about which type of foods will be organic or name brand instead of only exclusively purchasing those types of food products. According to Lim, Yong, and Suryadi, the current prices of organic foods were perceived to be too expensive in comparison to non-organic food products (2014). If food companies want their organic foods to be more profitable in the future, they may want to lower their prices in order to target student consumers or lower income consumers. Hypothesis 3 states that students living with friend(s) or roommate(s) are expected to significantly influence students’ decisions about which food products to purchase, and the findings did not support this hypothesis. There are only a small number of students who live alone, but even without a gatekeeper it is possible that students on their own may purchase generic or non-organic products based on what their gatekeeper always purchased. Many students are still living with other individuals, which supports the idea that college students cannot afford to live on their own. Students may want to purchase what they always had when growing up with their gatekeeper, but may only be able to afford generic or non-organic food products, unless this is what they always grew up eating. Learning theory is also supported because once students leave their home, they either purchase foods they experienced while growing up or they must learn to decide on their own which foods to purchase.

The strengths of this study are that there are qualitative and quantitative aspects to help understand the mindset of college students while shopping at the grocery store. The food products selected for the survey were considered common food staples in an average person's home (dairy, produce, and condiments) and images were included to help simulate having to make a decision at a grocery store. The sample size of this analysis exceeded the initial goal of 300 college students by reaching 318.

The limitations of this study include the fact that 69.9% of the participants were female college students compared to 25.2% of male college students. For future research, a more equal division of sex might influence the results. For the living arrangements of college students, 86.2% of college students live with friend(s), roommate(s) or family, while 8% of college students live alone. The large percentage of students living with friend(s), roommate(s) or family may have caused a skew in results. In future research, it might be useful to conduct surveys from colleges across the state or even the country to see if results are similar. The survey had 44 questions and took an average of ten minutes to complete. Originally there were 349 students who completed the survey, but 31 cases were missing. Due to the length of the survey and the use of open-ended responses, students may have been discouraged from completing the survey. The food products came from three different locations and more pictures were used from Publix. For future research, it might be better to do studies for individual stores' products instead of combining them into one study.

The purpose of this study was to look closely at the way college students choose food products while shopping at the grocery store. Images did not appear to be as influential as the descriptions on the food packages and this can be useful in understanding the mindset of college

students or even for people trying to use marketing techniques on food packaging. Future studies can possibly apply this method to a broader population of individuals to see if there are differences in the way individuals select types of food products.

**APPENDIX: THE SURVEY UTILIZED TO GATHER DATA FROM
COLLEGE STUDENTS**

What is your current class standing?

- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student
- Not a student

The following questions contain images of actual food products from local grocery stores. Please select the product that you would most likely purchase if you were actually shopping at the grocery store. After you have selected one image, please give a brief explanation between 1-2 sentences about why you chose that food product. For example, I liked the product because it was labeled natural and it had a picture of a farm on the packaging.



A)



B)



C)



D)

Please explain why you chose the chicken product that you selected.



A)



B)

Please explain why you chose the strawberry product that you selected.



A)



B)
Please explain why you chose the spinach product that you selected.



A)



B)



C)



D)



E)
Please explain why you chose the milk product that you selected.



A)



B)



C)



D)



E)

Please explain why you chose the egg product that you selected.



A)



B)



C)



D)

Please explain why you chose the butter product that you selected.



A)



B)



C)



D)
Please explain why you chose the peanut butter product that you selected.



A)



B)



C)



D)

Please explain why you chose the grape jelly product that you selected.

How much of an impact do health messages such as "low fat," "sugar free," "heart healthy or "zero trans fat" affect which food products you purchase? Rate the health messages from 1 (no impact) to 10 (high impact).

1 2 3 4 5 6 7 8 9 10

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How much of an impact do content messages such as "organic," "gluten-free," "no fillers," or "no high-fructose corn syrup" or "non-GMO" affect which food products you purchase? Rate the content messages from 1 (no impact) to 10 (high impact).

1 2 3 4 5 6 7 8 9 10

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How often are you concerned about the nutritional value of your food?

- Never
- Rarely
- Sometimes
- Often
- Always

How often do you think about where your food comes from?

- Never
- Rarely
- Sometimes
- Often
- Always

Do you look at the nutritional facts label on the food package when you are buying a food product for the first time?

- Never
- Rarely
- Sometimes
- Often
- Always

How important is it to you to obtain or try to obtain a physical appearance that you feel is considered attractive in our current society?

- Not important
- Somewhat important
- Neutral
- Somewhat important
- Very important

How would you describe your current body weight?

- Underweight
- Average weight
- Overweight
- Don't know

In general, when shopping at the grocery store, what factors are most important when purchasing food products? Rank the following factors from 1 (most important) to 6 (least important).

Price _____

Brand _____

Appearance _____

Taste _____

Nutrition _____

Convenience _____

Do you want to lose weight?

- Yes
- No

Do you want to gain weight?

- Yes
- No

What is your estimated height in feet and inches? For example, 5'4".

What is your estimated weight in pounds?

Sex:

- Male
- Female

What is your current age?

What is your race?

- African American/ Black
- White
- Hispanic
- Asian
- Pacific Islander
- American Indian/ Alaskan native

Are you of Hispanic, Spanish or Latino(a) origin?

- Yes
- No

What is the location of your current housing?

- On-campus
- Off-campus

In your current housing with who/whom do you specifically live with?

- Friends/room mates
- Family
- By yourself

Which of the following best describes your parents' socioeconomic status?

- Lower class
- Middle class

- Upper class

What is your current occupational status? (If unemployed is selected, skip the next question)

- Employed full time
- Employed part time
- Unemployed

How many hours do you work for pay each week?

- 1-10
- 10-20
- 20-30
- 30-40
- More than 40

When you were growing up, who was primarily responsible for food preparation in your household?

- Father
- Mother
- Other _____

How many times on average would you say you go to the grocery store per week?

- 0
- 1-2
- 3-4
- 5-6
- 7 or more

How much do you spend per week on grocery purchases?

\$ _____

Who in your household does the majority of the grocery shopping?

- Father
- Mother
- Roommate(s)/ friend(s)

- You
- Other _____

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