

**Report
on
The Analysis of the NFSMI School
Foodservice Survey Data**

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National Food Service Management Institute The University of Mississippi

Building the Future Through Child Nutrition

Location

The National Food Service Management Institute (NFSMI) was established by Congress in 1989 at The University of Mississippi in Oxford as the resource center for Child Nutrition Programs. The Institute operates under a grant agreement with the United States Department of Agriculture, Food and Nutrition Service. The NFSMI Applied Research Division is located at The University of Southern Mississippi in Hattiesburg.

Mission

The mission of the NFSMI is to provide information and services that promote the continuous improvement of Child Nutrition Programs.

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PREFACE

Expectations play a critical role in customer satisfaction. How the customers perceive the attributes of service impacts their level of satisfaction. Great pressure is being placed on the Child Nutrition Programs (CNPs) nationwide to meet the customers' needs while maintaining financial stability. To assist child nutrition professionals with the task of monitoring customer satisfaction, the Applied Research Division of the National Foodservice Management Institute developed a series of student surveys. An analysis service for the surveys is offered by the Foodservice Analysis and Benchmarking Service (FABS) at the University of Southern Mississippi in collaboration with the Applied Research Division.

During the four years since the first survey was developed, FABS has analyzed surveys for 730 high schools in 23 states plus the District of Columbia, 138 middle/junior high schools in 14 states, and 117 upper-elementary schools in seven states. This report contains the complete analysis of those surveys according to various school foodservice characteristics.

Dr. Mary Kay Meyer coordinated the operation of FABS and conducted this research project.

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REPORT ON THE ANALYSIS OF THE NFSMI SCHOOL FOODSERVICE SURVEY DATA

SUMMARY

In 1995 the Applied Research Division of the National Food Service Management Institute initiated the development of a series of school foodservice surveys. Since that time, the high school, middle/junior high, upper-elementary, and lower-elementary school foodservice surveys were developed. The Foodservice Analysis and Benchmarking Service (FABS) at The University of Southern Mississippi was created in 1998 in collaboration with the Applied Research Division to provide schools and school districts nationwide with a service for analyzing, interpreting, and reporting the results of the surveys. To date, FABS has analyzed surveys for 730 high schools in 23 states plus the District of Columbia (1998-2001) 138 middle/junior high schools in 14 states (1999-2001), and 117 upper-elementary schools in seven states (2000-2001). The lower-elementary school foodservice survey will be available for use during the 2002 school year.

An effect measurement was used to identify differences among schools. This methodology was chosen because it allows the researcher to detect differences among groups with very large sample sizes. The formula used for the effect measurement calculation was: *effect size x standard deviation = difference of meaning*. Cohen (1969) defines a moderate effect size as a range from .20 to .33. An effect size of .25 was chosen because it is a mid-range moderate effect size. Two or more means with a difference greater than this calculated value were identified as having a *difference of meaning*. For example: using the effect measurement .25 x (average standard deviation) 1.81 = .45, when the overall satisfaction mean for *have a choice* was 3.68 and *have no choice* was 2.93, a difference of meaning was identified. There is a difference of meaning because the difference between 2.93 and 3.68 is greater than .45.

MAJOR FINDINGS

Based on the effect measurement methodology the following findings can be identified. Frequency of participation had a great impact on students' perceptions of the school foodservice and nutrition programs participating in the surveys. Students in all grade categories were satisfied both overall and with the characteristics of the school food service program when they ate at least three times per week. When students felt they had a choice of choosing to eat school meals they were also satisfied both overall and with the characteristics of the school foodservice

program. The availability of a la carte items impacted middle/junior high and upper-elementary students; scores were higher in schools when no a la carte items were available. Students in the middle/junior high and upper-elementary scored overall satisfaction and Food Quality higher when a conventional preparation style was used.

The number and category of menu choices had a large impact on all grade levels. Generally, in high schools scores were higher when three meats and meat alternates and one choice of fruits and vegetables were available. Middle school students were more satisfied when three meats and meat alternates, three fruits and vegetables, and three breads and cereal choices were offered. The upper-elementary students were more satisfied when three meats and meat alternates and four fruits and vegetables and bread and grain choices were provided.

APPLICATION

The variables impacting students' perceptions most for high school were the number served breakfast and lunch, frequency of participation, number of menu choices, and feeling they have a choice of eating. Other variables, such as offering nationally branded concepts, offering a la carte items, or allowing students to portion the food were not shown to increase students' overall satisfaction and perceptions of the service factors. One common denominator in making students feel they have a choice is the staff. Previous research found that Staff was the most important of the six factors to high school students (Meyer, Conklin, & Carr, 1997). When staff serve fewer students they are able to give personalized attention. By focusing on how students are treated, students are more satisfied with the school foodservice and nutrition programs.

The number of choices offered is also important to high school students. Students perceive Food Quality higher when they have choices of entrees; however, the choices of fruits and vegetables negatively impact their perceptions. Students are more satisfied when only one choice of fruits and vegetables is offered. Although nutrition is important for adolescents, students do not value being offered a wide variety of fruits and vegetables. School foodservice and nutrition program administrators should allocate resources to areas valued by the customer without compromising the nutritional benefit of the meals provided.

One of the most striking differences for middle/junior high school category was a focus on food quality. Two differences noted between the middle/junior high and the high school was the impact of a la carte items offered and the preparation style. When a la carte items were not offered, middle school students perceived Food Quality, Ambiance, Price, and Staff more favorably. It is interesting that middle school students perceive the more healthful foods more favorably when they do not have the less healthful foods as a comparison. Middle school

students also perceived the conventional on-site preparation meals as better food quality. School foodservice professionals should note this difference and not only focus on caring for the students but also on providing the level of food quality recognized as desirable by the students.

Trends noted in the upper-elementary schools were similar to those noted in the high and middle/junior high schools. Students were more satisfied when: they ate meals served by the foodservice and nutrition program more frequently; they felt they had a choice of eating the meals; no a la carte choices were offered; more than one meat/meat alternate; fruit/vegetable and one bread/grain were offered; and conventional on-site preparation was used. The most notable finding was the number of schools offering only one choice of the meal components. Over 31% of the students surveyed were offered only one choice of entrée. Students today are used to choices and perceive the foodservice and nutrition program less favorably when they are not given choices.

RECOMMENDATIONS

- \$ Child Nutrition Programs must recognize that choices are an attribute of service that can increase the satisfaction level of students. Schools offering limited choices should evaluate their operation and investigate ways to increase opportunities for students to make choices in the school meals.
- \$ To maintain financial stability and increase student satisfaction, school foodservice and nutrition programs should closely monitor students' perceptions of food and services offered.
- \$ Individual schools should not use results of these analyses for routine decision making. Schools desiring to make changes based on students' wants and needs should first determine what these wants and needs are by asking the students.

Report on the Analysis of the NFSMI School Foodservice Survey Data

INTRODUCTION

Customers in various service markets have different expectations, so the expectations of the customers on which a business is based must be identified. Once expectations are identified all functions of the business must use these as a guide to satisfy the customer in order to maintain financial success. School foodservice operations are no exception. Children who eat in the school foodservice and nutrition programs are customers and have ever growing choices of what and where to eat during the school day. Understanding their expectations is critical to the future success of Child Nutrition Programs.

In 1995, the Applied Research Division of the National Food Service Management Institute initiated the development of a series of school foodservice surveys. Since that time, the high school, middle/junior high, upper-elementary, and lower-elementary school foodservice surveys were developed. The Foodservice Analysis and Benchmarking Service (FABS) at The University of Southern Mississippi in collaboration with the Applied Research Division was created in 1998 to provide schools and school districts nationwide with a service for analyzing, interpreting, and reporting the results of the surveys. To date, FABS has analyzed surveys for 730 high schools in 23 states plus the District of Columbia (1998-2001), 138 middle/junior high schools in 14 states (1999-2001), and 117 upper-elementary schools in 7 states (2000-2001). The lower-elementary school foodservice survey will be available for use during the 2002 school year.

METHOD

All schools participating in FABS completed a school profile that detailed operational and demographic characteristics about the school. This report contains an overview of the survey results broken down by those school demographic characteristics according to the factors identified for each category of school. The demographic characteristics were:

- Average daily attendance
- Number of students served breakfast
- Number of students served lunch
- Economic status
- Frequency of eating lunch

- Choice of eating
- Open or closed campus
- Competitive foods sold during meal service
- Foods portioned by the student
- A la carte items offered
- Nationally branded concepts offered
- Having a Nutrition Advisory Council
- The number of meats/meat alternates available daily
- The number of fruits/vegetables choices available daily
- The number of breads/grains available daily
- Conventional on-site preparation or satellite preparation

Due to the large sample size, a less powerful statistical methodology was needed to show meaningful differences among categories of variables. Excessive power allows a researcher to declare statistically significant differences among variables that may lack meaningful interpretation. All differences among the variables analyzed were statistically significant, but all differences were not meaningful. As a result, the effect measurement methodology was chosen (Cohen, 1969). This method allows the researcher to detect meaningful differences among groups with very large sample sizes. The formula used for the effect measurement calculation was: *effect size x standard deviation = difference of meaning*. Cohen (1969) defines a moderate effect size as a range from .20 to .33. An effect size of .25 was chosen for this analysis because it represented a mid-range moderate effect size. Two or more means with a difference greater than this calculated value were identified as having a *difference of meaning*. For example: using the effect measurement $.25 \times (\text{average standard deviation}) 1.81 = .45$, when the overall satisfaction mean for *have a choice* was 3.68 and *have no choice* was 2.93, a difference of meaning was identified. There is a difference of meaning because the difference between 2.93 and 3.68 is greater than .45.

RESULTS

High School Foodservice Survey Results

Analysis of the high school data showed a difference of meaning within the variables:

- Average daily attendance
- Number of students served breakfast
- Number of students served lunch
- Economic status
- Frequency of eating lunch
- Choice of eating
- Menu choices

No difference of meaning was found within the following variables:

- Open or closed campus
- Competitive foods sold during meal service
- Food portioned by students
- A la carte offered
- Nationally branded concepts offered
- Having a Nutrition Advisory Council
- Conventional on-site or satellite preparation

Mean scores and standard deviation for overall satisfaction and the six high school factors Food Quality, Staff, Nutrition, Time/Cost, Diversity and Ambiance are shown in Table 1. Tables supporting each demographic characteristic where data showed differences of meaning are found in Appendix A.

Table 1. High School Descriptive Statistics

Variables	N	Mean a	Standard Deviation
Overall Satisfaction	74122	3.47	1.81
Food Quality	85556	3.13	1.49
Staff	85730	4.04	1.75
Nutrition	80018	2.49	1.79
Diversity	73678	3.69	2.04
Time/Cost	85516	3.31	1.67
Ambiance	85504	3.90	1.53

a scale 1= very unhappy and 7 = very happy;
 1= strongly disagree and 7 = strongly agree;
 1= poor and 7 = excellent.

Average daily attendance

A difference of meaning was found in the average daily attendance for overall satisfaction and four of the six factors Food Quality, Staff, Time/Cost, and Ambiance. For the factors Food Quality and Ambiance the major differences existed between the schools that have fewer than 100 students and schools with more than 5,000 students. A general decrease in means was also noted for the factor Ambiance. As the average daily attendance increased, the mean score for Ambiance decreased. Within the factors Staff and Time/Cost and overall satisfaction a difference was shown between the larger and smaller size schools. Since there was only one school represented in the category with more than 5,000, no conclusion is possible and no

generalization can be made to the general population.

Number served breakfast

Overall satisfaction and all six factors showed a difference of meaning based on the number of students eating breakfast. Although many differences were found within each factor, only one notable trend was identified. Students in a school with fewer than 100 students were generally more satisfied with the school foodservice and nutrition programs and all factors than students in schools with a greater number of students eating breakfast. These differences may be due to the small number of students eating breakfast in the categories 600-799 and 800-999.

Number served lunch

A difference of meaning existed between schools that serve fewer than 100 lunch meals and those that serve more than 5,000 for all factors. However, the sample size for the category of serving more than 5,000 lunch meals was composed of only one school and no conclusions should be based on this small sample size. Overall satisfaction did not show a difference of meaning.

Economic status

Results showed that overall satisfaction and the two factors Food Quality and Staff were impacted by the percentage of students receiving meals free. As the percentage of students receiving meals free increased, the overall satisfaction decreased until the mid-range of the scale of free and reduced priced meals was reached. At that point the mean scores began to increase. Schools that served between 50% and 70% of the students free meals had lower mean scores for these variables than schools serving more that 70% meals free and higher than schools serving lower than 50% meals free.

Frequency of eating lunch

A difference of meaning existed for overall satisfaction and the two factors Diversity and Time/Cost between the students who never eat school lunch and those who eat school lunch 3-5 times a week. For the three factors Food Quality, Staff, and Ambiance a difference of meaning existed among all three categories. Generally, the more frequently the students ate lunch the more satisfied they were with the school foodservice and nutrition program.

Choice of eating

Question #33 on the survey asked the students the number one reason they ate school lunch. Of the choices available, if the students answered *My parents make me* or *I have no other choice*, they answered the survey differently. Scores overall were lower for this group of students.

Therefore, these students compose the grouping *have no choice*. A difference of meaning was found for overall satisfaction and the five factors Food Quality, Staff, Diversity, Time/Cost, and Ambiance between the groups that felt they *have a choice* and *have no choice*. Those students that felt they *have a choice* scored these factors higher.

Menu choices

The number of menu choices in meats/meat alternates and fruits/vegetables impacted students' perceptions. The choices of breads/grains did not impact overall satisfaction or any of the factors. Students' perception of Food Quality was higher when three choices of meats/meat alternates were served. A difference of meaning was shown among schools that served one, two, three, and six choices.

The number of fruits/vegetables impacted students' perception of the four factors Staff, Nutrition, Time/Cost, and Ambiance. For the factors Staff and Ambiance a difference of meaning was shown between those schools offering one and four choices of fruits/vegetables. The mean score was highest for those offering only one choice and second highest for those schools offering six choices of fruits/vegetables. For the factor Nutrition a difference of meaning was shown between schools offering one choice and those offering three, four or five. A difference of meaning was shown for Time/Cost between schools that offered one choice and those that offered three to six choices of fruits/vegetables. Scores were higher when only one choice of fruits/vegetables was offered.

Middle/Junior High School Foodservice Survey Results

A difference of meaning was found in the middle/junior high school data within each of the following variables:

- Average daily attendance
- Number of students served breakfast
- Number of students served lunch
- Economic status
- Frequency of eating lunch
- Choice of eating
- A la carte items offered
- The number of meats/meat alternates available daily
- The number of fruits/vegetables choices available daily
- The number of breads/grains available daily
- Conventional on-site preparation or satellite preparation

No difference of meaning was found within the following variables:

- Open or closed campus
- Competitive foods sold during meal service
- Foods portioned by the students
- Nationally branded concepts offered
- Having a Nutrition Advisory Council

Mean scores and standard deviation for overall satisfaction and the five middle/junior high school factors Food Quality, Ambiance, Price, Staff, and Time are shown in Table 2. Tables supporting each demographic characteristic where data showed differences of meaning are found in Appendix B.

Table 2. Middle/Junior High School Descriptive Statistics

Variables	N	Mean a	Standard Deviation
Overall Satisfaction	22681	3.77	1.69
Food Quality	30405	3.35	1.43
Ambiance	30404	4.07	1.42
Price	29684	3.48	1.88
Staff	30352	4.13	1.74
Time	30277	3.15	1.95

a scale 1= very unhappy and 7 = very happy; 1= strongly disagree and 7 = very happy

Average daily attendance

The average daily attendance in middle/junior high school impacted overall satisfaction and all five factors Food Quality, Ambiance, Price, Staff, and Time. For the variables overall satisfaction, Food Quality, and Time the schools with fewer than 100 students had a difference of meaning from other schools. For the factor Food Quality students’ scores were lower in schools with fewer than 100 students. But, the opposite was true for the factor Time. Within this factor scores were highest for schools with fewer than 100 students. In the factor Ambiance, the major difference occurred in schools with students greater than 800. These students scored Ambiance lower than other students. Many differences were found within the factors Price and Staff; however, no trends could be identified. Differences in the group with fewer than 100 students may be due to the small sample size; only 120 students composed this group. No conclusions can be drawn from the average daily attendance due to the small number in the classification of less than 100 students.

Number served breakfast

The number of students eating breakfast impacted the factors Ambiance and Staff. A difference of meaning was shown for Ambiance with schools that serve less than 100 students from those that serve more than 400 students. Within the factor Staff, a difference of meaning was found between all classifications and schools that serve greater than 400 students.

Number served lunch

The only variable not impacted by the number of students eating lunch was the factor Staff. A difference of meaning was found between schools that served fewer than 100 students for overall satisfaction and the factors other than Staff. Differences were also found within each variable for schools serving between 1,000 and 4,999 students. Scores were generally higher as the number of students served lunch increased. However, this difference may be due to the smaller sample size of schools serving fewer than 100 students and more than 1,000.

Economic status

The percentage of students receiving meals free influenced the factors Food Quality, Ambiance, and Price. Scores for these factors decrease as the schools reached 50% of the number of students eating meals categorized as free. When schools reached 80% of the students eating meals categorized as free, the scores decreased even further. The scores of these factors may be influenced by the perception of the students that receive meals free feeling they have no other choice.

Frequency of eating lunch

The more frequently the students ate lunch, the more satisfied they were overall and with all five factors Food Quality, Ambiance, Price, Staff, and Time.

Choice of eating

Question #28 on the survey asked the students the number one reason they ate school lunch. Of the choices available, if the students answered *My parents make me* or *I have no other choice*, they answered the survey differently. Therefore, these students compose the grouping *have no choice*. Whether the students felt they *had a choice* of eating influenced their perception of overall satisfaction and Price. When students felt they *had a choice* of eating, they evaluated these two variables higher.

A la carte sales

The availability of a la carte sales impacted the perception the student had about the factors Food Quality, Ambiance, Price, and Staff. In each case the students scored the factor higher when a la carte sales were not offered.

Menu choices

When only one meat/meat alternate choice was offered, students were less satisfied with overall satisfaction, Food Quality, Ambiance, Staff, and Time. Price is the only variable not impacted. The scores were best for overall satisfaction, Food Quality, Ambiance, and Staff when three choices of meat/meat alternate were offered. Also, for these variables a difference of meaning was shown among schools that offered only one choice and those that offered more. For the factor Time the score was best when five choices were offered. Within Time the major difference was within schools that offered six choices of meat/meat alternate.

The number of servings of fruits and vegetables impact overall satisfaction and all factors except Time. A difference of meaning was found when only one serving of fruits and vegetables was offered. Scores were highest when three or six servings were offered.

The number of choices of breads and cereals offered impacted overall satisfaction, Food Quality, and Time. Scores were higher for overall satisfaction when three servings were offered and for Food Quality when five choices were offered. The factor Time was inversely influenced by the number of servings until five servings were reached. The scores decreased from 3.27 for one serving to 3.13 for four servings and increased to 3.46 for five servings. A difference of meaning was shown between schools offering six choices and those offering one through five.

Preparation style

A difference of meaning was found for overall satisfaction and Food Quality for those schools preparing meals in a conventional on-site setting versus serving satellited meals. Students scored overall satisfaction and Food Quality higher when meals were prepared using a conventional preparation style. This may be due to the small number of schools satelliting meals. Approximately 79% of the students completing the survey are from schools that use traditional on-site production. It should also be noted that the sample size for Food Quality and overall satisfaction are not the same. This is probably due to the fact that approximately 25% of students completing the survey leave blank question number one that asks overall satisfaction.

Upper-Elementary School Foodservice Survey Results

Mean scores and standard deviation for overall satisfaction and the three upper-elementary factors Food Quality, Service, and Cafeteria are shown in Table 3. Tables supporting each demographic characteristic where data showed differences of meaning are found in Appendix C.

Table 3. Upper-Elementary School Descriptive Statistics

Variables	N	Mean a	Standard Deviation
Overall Satisfaction	13099	3.20	1.05
Food Quality	13321	3.11	.95
Service	13321	3.52	.94
Cafeteria	13321	3.19	.97

a scale 1 = always and 5 = never

Average daily attendance

The average daily attendance impacted the scores for overall satisfaction and all factors. The scores for Service and Food Quality generally decreased as the average daily attendance increased. A difference of meaning was found between schools with 200-399 students and those with greater than 600 students for overall satisfaction, Food Quality, and Cafeteria. Several differences were found for the factors Service and Cafeteria; however, no trends could be identified. Because only one school composed each category <100, 800-999, and >1000 no conclusions can be made from these data.

Number served breakfast

There was a difference of meaning in each variable between the schools that serve breakfast to between 200-399 students and those that serve 600-799 students. However, no schools were identified serving 400-599 breakfasts and only one school was in the category 600-799. In the factor Cafeteria there was a difference of meaning among all classifications. Because of the sample distribution, no conclusions can be drawn from these data.

Number served lunch

A difference of meaning was found for those schools serving greater than 1,000 students for overall satisfaction and all factors. This category is represented by only one school and may not represent the general population of schools serving this number of students. Generally, as the number of students served lunch increased, the scores for overall satisfaction and all factors decreased.

Economic status

Differences of meaning were observed among several categories for overall satisfaction and all factors. The many differences may be due to the relatively small sample size in each cell. It is interesting to note that generally the scores were higher in the schools that served a large percentage of the students free meals than in schools that serve a low percentage of students free meals.

Frequency of eating lunch

A difference of meaning was found among categories in frequency of eating lunch for overall satisfaction and all factors. As the frequency of eating lunch increased, the mean scores for overall satisfaction and all factors increased.

Choice of eating

Question #21 on the survey asked the students the number one reason they ate school lunch. Of the choices available, if the students answered *I am hungry*, *My parents make me*, or *I have no other choice*, they answered the survey differently. Therefore, these students compose the grouping *have no choice*. A difference of meaning was found for students who *have no choice* and *have a choice* for the factors Food Quality and Service. If the students felt they had a choice, they scored these factors higher.

A la carte

Students scored the factors Service and Cafeteria higher when no a la carte sales were available.

Menu choices

A difference of meaning was found for overall satisfaction and all factors when only one serving of meat or meat alternate were offered. Scores increased as the number of servings increased; however, no differences were found when more than one serving was offered.

For the choices of fruits and vegetables, a difference of meaning was found for overall satisfaction and all factors; however, no trends could be identified due to the large number of differences. It should be noted that the sample size is small for the school offering four and five choices and this may influence the results.

The number of servings of breads and grains impacted overall satisfaction, Food Quality, and Service. A difference of meaning was found among schools that offered only one choice of breads and cereals and those that served more than one choice. As the number of choices offered increased, the factor scores also increased.

Preparation style

A difference of meaning was found for overall satisfaction, Food Quality, Service, and Cafeteria when schools did not use the satellite preparation system. Although almost twice as many

students were in schools that did not use satellite production systems, the sample size in those schools with satellite food production systems was large enough to support this was a true difference and not a reflection of sample size.

CONCLUSION

Generally, in the high, middle/junior high, and upper-elementary schools as the average daily attendance, number served breakfast, and number served lunch increased, the scores for overall satisfaction and factors unique to each grade category decreased. The percentage of students receiving meals free impacted all grade categories. Scores for overall satisfaction and factors generally decreased as the percentage of free meals increased until 50% was reached. At 60% to 70% free meals the scores increased. However, the differences of meaning varied widely for

these variables within school categories. As discussed in the results, in several cases only one school composed the size or percentage free category. As a result, no conclusions can be drawn from these variable categories.

Students in all grade categories were more satisfied overall and with the characteristics of the school foodservice program when they ate at least three times per week and felt they had a choice of choosing to eat school meals. The availability of al la carte items impacted middle/junior high and upper-elementary students; they were more satisfied with several variables when a la carte items are not available. Students in the middle/junior high and upper-elementary scored overall satisfaction and the factor Food Quality higher when conventional preparation style was used. In upper-elementary schools the factors Service and Cafeteria also were scored higher when conventional on-site preparation was used.

Menu choices had the greatest impact on all grade categories. In high school, scores were higher when three meat and meat alternates and one choice of fruits and vegetables were available. Middle school students were more satisfied when three meat and meat alternates, three fruits and vegetables and three breads and cereal choices were offered. The upper-elementary students were more satisfied when three meat and meat alternates and four fruits and vegetables and four breads and grains choices were provided. Although choices appear to be an important characteristic in students' perceptions of school foodservice and nutrition programs, many upper-elementary school foodservice and nutrition programs offer only one choice of meal components.

RECOMMENDATIONS

- \$ Child nutrition programs must recognize that choices are an attribute of service that increases the satisfaction level of students. Schools offering limited choices should evaluate their operation and investigate ways to increase opportunities for students to make choices in the school meals.
- \$ To maintain financial stability and increase student satisfaction, school foodservice and nutrition programs should closely monitor students' perceptions of food and services offered.
- \$ Individual schools should not use results of these analyses for routine decision making. Schools desiring to make changes based on students' wants and needs should first determine what these wants and needs are by asking the students.

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APPENDIX A

Tables for High School Foodservice Survey Results

APPENDIX A

High School Foodservice Survey Results

Average daily attendance

Overall Satisfaction

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.82 ^a	403	1.86
100-199	3.45 ^b	755	1.85
200-399	3.48 ^c	5830	1.88
400-599	3.43 ^d	9671	1.84
600-799	3.26 ^a	11162	1.84
800-999	3.54 ^e	10999	1.87
1000-4999	3.53 ^f	33507	1.75
5000>	3.02 ^{a,b,c,d,e,f}	290	1.67

Effect measurement ($.25 \times 1.81 = .45$)

^{a,b,c,d,e,f} Difference of meaning

Food Quality

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.47 ^{a,b,c,d,e}	446	1.49
100-199	2.90 ^{a,f}	842	1.43
200-399	3.16 ^{b,j}	6653	1.54
400-599	3.09 ^{c,i}	11196	1.49
600-799	2.98 ^{d,h}	13005	1.50
800-999	3.15 ^f	12823	1.53
1000-4999	3.20 ^g	38519	1.47
5000>	2.57 ^{e,f,g,h,i,j}	352	1.37

Effect measurement ($.25 \times 1.50 = .38$)

^{a,b,c,d,e,f,g,h,i,j} Difference of meaning

Staff

Average Daily Attendance	Mean	N	Standard Deviation
<100	4.34 ^a	446	1.63
100-199	4.23 ^b	842	1.79
200-399	4.41 ^c	6656	1.77
400-599	4.17 ^d	11199	1.76
600-799	4.00 ^e	13006	1.80
800-999	4.10 ^f	12838	1.75
1000-4999	3.95 ^g	38673	1.71
5000>	3.27 ^{a,b,c,d,e,f,g}	350	1.68

Effect measurement ($.25 \times 1.75 = .44$)

^{a,b,c,d,e,f,g} Difference of meaning

Time/Cost

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.48 ^a	446	1.64
100-199	3.51 ^b	842	1.67
200-399	3.60 ^c	6648	1.73
400-599	3.42 ^d	11186	1.71
600-799	3.31 ^e	12981	1.68
800-999	3.36 ^f	12826	1.71
1000-4999	3.22	38522	1.63
5000>	2.87 ^{a,b,c,d,e,f}	347	1.49

Effect measurement ($.25 \times 1.67 = .42$)

^{a,b,c,d,e,f} Difference of meaning

Ambiance

Average Daily Attendance	Mean	N	Standard Deviation
<100	4.41 ^{a,b,c,d}	446	1.43
100-199	4.19	842	1.52
200-399	4.13	6650	1.57
400-599	4.05	11191	1.54
600-799	3.87 ^{a,e}	12989	1.56
800-999	3.92 ^{b,f}	12819	1.54
1000-4999	3.82 ^{c,g}	38503	1.50
5000>	3.22 ^{d,e,f,g}	346	1.45

Effect measurement ($.25 \times 1.53 = .38$)

^{a,b,c,f,e,f,g} Difference of meaning

Number served breakfast

Overall Satisfaction

Eat Breakfast	Mean	N	Standard Deviation
<100	3.50 ^{a,b,c}	25817	1.80
100-199	3.41 ^d	21444	1.81
200-399	3.50 ^e	12020	1.88
400-599	3.11 ^f	978	1.79
600-799	2.51 ^{a,d,e,f,g}	677	1.69
800-999	2.93 ^b	121	1.65
>1000	3.11 ^{c,g}	468	1.63

Effect measurement ($.25 \times 1.81 = .45$)

^{a,b,c,d,e,f,g} Difference of meaning

Food Quality

Eat Breakfast	Mean	N	Standard Deviation
<100	3.14 ^{a,b,c}	30015	1.50
100-199	3.09 ^{d,e,f}	24806	1.47
200-399	3.22 ^{g,h,i}	13857	1.57
400-599	3.02 ^{j,k,l}	1160	1.51
600-799	2.37 ^{a,d,g,j}	773	1.23
800-999	2.52 ^{b,e,h,k}	137	1.39
>1000	2.88 ^{c,f,i,l}	564	1.38

Effect measurement ($.25 \times 1.50 = .38$)

a,b,c,d,e,f,g,h,i,j,k,l Difference of meaning

Staff

Eat Breakfast	Mean	N	Standard Deviation
<100	4.01 ^{a,b,c}	30019	1.74
100-199	4.04 ^{d,e}	24976	1.76
200-399	4.12 ^{f,g}	13853	1.77
400-599	4.24 ^{h,i}	1161	1.77
600-799	3.42 ^{a,d,f,h,j}	775	1.70
800-999	4.46 ^{b,j,k}	137	1.70
>1000	3.35 ^{c,e,g,i,k}	562	1.69

Effect measurement ($.25 \times 1.75 = .44$)

a,b,c,d,e,f,g,h,i,j,k Difference of meaning

Nutrition

Eat Breakfast	Mean	N	Standard Deviation
<100	2.48 ^{a,b}	28027	1.78
100-199	2.45 ^{c,d}	23409	1.77
200-399	2.79 ^e	12959	1.94
400-599	2.44 ^{f,g}	1111	1.74
600-799	2.26 ^{h,i}	755	1.70
800-999	1.92 ^{a,c,e,f,h,j}	133	1.28
>1000	2.94 ^{b,d,g,i,j}	526	1.89

Effect measurement ($.25 \times 1.80 = .45$)

a,b,c,d,e,f,g,h,i,j Difference of meaning

Diversity

Eat Breakfast	Mean	N	Standard Deviation
<100	3.70 ^{a,b}	25765	2.02
100-199	3.59 ^{c,d}	21427	2.04
200-399	3.69 ^{e,f}	12030	2.07
400-599	3.64 ^{g,h}	990	2.10
600-799	2.66 ^{a,c,e,g,i}	691	1.83
800-999	3.05 ^{b,d,f,h}	116	1.93
>1000	3.23 ⁱ	495	1.93

Effect measurement ($.25 \times 2.04 = .51$)

^{a,b,c,d,e,f,h,g,h,i} Difference of meaning

Ambiance

Eat Breakfast	Mean	N	Standard Deviation
<100	3.86	30003	1.52
100-199	3.88	24797	1.53
200-399	4.04 ^{a,b,c}	13835	1.59
400-599	3.82	1159	1.53
600-799	3.54 ^a	771	1.53
800-999	3.57 ^b	137	1.31
>1000	3.55 ^c	559	1.54

Effect measurement ($.25 \times 1.53 = .38$)

^{a,b,c} Difference of meaning

Number served lunch

Food Quality

Eat Lunch	Mean	N	Standard Deviation
<100	3.34 ^a	1654	1.64
100-199	3.28	5631	1.54
200-399	3.15	23775	1.49
400-599	3.03	21560	1.48
600-799	3.23	15968	1.53
800-999	2.96	7674	1.44
1000-4999	3.22	6929	1.44
5000>	2.75 ^a	281	1.28

Effect measurement ($.25 \times 1.50 = .38$)

^a Difference of meaning

Staff

Eat Lunch	Mean	N	Standard Deviation
<100	4.10 ^a	1655	1.82
100-199	4.19 ^b	5636	1.75
200-399	4.12 ^c	23782	1.75
400-599	3.94 ^d	21702	1.75
600-799	4.08 ^e	15981	1.75
800-999	3.84 ^f	7678	1.74
1000-4999	4.08 ^g	6928	1.69
5000>	3.20 ^{a,b,c,d,e,f,g}	283	1.47

Effect measurement ($.25 \times 1.75 = .44$)

^{a,b,c,d,e,f,g} Difference of meaning

Nutrition

Eat Lunch	Mean	N	Standard Deviation
<100	2.80 ^a	1562	1.96
100-199	2.59 ^b	5261	1.83
200-399	2.53 ^c	22272	1.80
400-599	2.40 ^d	20194	1.74
600-799	2.55 ^e	14939	1.84
800-999	2.37 ^f	7177	1.71
1000-4999	2.60 ^g	6430	1.81
5000>	1.94 ^{a,b,c,d,e,f,g}	265	1.41

Effect measurement ($.25 \times 1.79 = .45$)

^{a,b,c,d,e,f,g} Difference of meaning

Time/Cost

Eat Lunch	Mean	N	Standard Deviation
<100	3.46 ^a	1653	1.76
100-199	3.49 ^b	5632	1.70
200-399	3.34 ^c	23764	1.67
400-599	3.27 ^d	21537	1.68
600-799	3.33 ^e	15964	1.70
800-999	3.18 ^f	7677	1.64
1000-4999	3.34 ^g	6925	1.60
5000>	2.74 ^{a,b,c,d,e,f,g}	283	1.41

Effect measurement ($.25 \times 1.67 = .42$)

^{a,b,c,d,e,f,g} Difference of meaning

Ambiance

Eat Lunch	Mean	N	Standard Deviation
<100	3.90	1655	1.62
100-199	4.06 ^a	5632	1.53
200-399	3.93	23769	1.52
400-599	3.81	21521	1.54
600-799	4.01 ^b	15963	1.54
800-999	3.77	7674	1.50
1000-4999	3.87	6927	1.47
5000>	3.59 ^{a,b}	283	1.35

Effect measurement ($.25 \times 1.53 = .38$)

^{a, b} Difference of meaning

Economic status

Overall Satisfaction

% Free	Mean	N	Standard Deviation
<10	4.21 ^{a,b,c,d}	827	1.91
11-20	3.86 ^{e,f,g}	1385	1.71
21-30	4.43 ^{g,h,i,j,k,l,m}	148	1.74
31-40	3.30 ^{a,e,h,n}	841	1.66
41-50	3.76 ^{b,i,o}	651	1.79
51-60	3.27 ^{c,f,j,o}	1217	1.75
61-70	3.53 ^{d,k}	2103	1.66
71-80	3.75 ^l	1297	1.68
81-90	4.08 ⁿ	746	1.80
91-100	3.91 ^m	179	1.79

Effect measurement ($.25 \times 1.75 = .44$)

^{a,b,c,d,e,f,g,h,i,j,k,l,m,n,o} Difference of meaning

Food Quality

% Free	Mean	N	Std. Deviation
<10	3.67 ^{a,b,c}	885	1.65
11-20	3.34 ^{d,e,f}	1602	1.44
21-30	3.43 ^{g,h}	1492	1.47
31-40	2.82 ^{a,d,g,j}	952	1.30
41-50	3.21 ^{b,j,i}	714	1.39
51-60	2.86 ^{e,f,h,i,k,l,m,n}	1385	1.41
61-70	3.18 ^{c,k}	2424	1.40
71-80	3.24 ^l	1445	1.38
81-90	3.71 ^m	829	1.52
91-100	3.26 ^{d,n}	211	1.45

Effect measurement ($.25 \times 1.46 = .37$)
a,b,c,d,e,f,g,h,i,j,k,l,m,n Difference of meaning

Staff

% Free	Mean	N	Standard Deviation
<10	4.52 ^{a,b,c}	885	1.82
11-20	4.08 ^{a,d}	1602	1.69
21-30	4.35	1492	1.63
31-40	3.64 ^{d,e,f,g,h}	952	1.64
41-50	4.23 ^{e,i,j}	714	1.73
51-60	3.75 ^{b,i,k,l,m}	1385	1.65
61-70	3.70 ^{c,j}	2424	1.64
71-80	4.27 ^{f,k}	1445	1.68
81-90	4.58 ^{g,l}	829	1.75
91-100	4.37 ^{h,m}	211	1.88

Effect measurement ($.25 \times 1.71 = .43$)
a,b,c,d,e,f,g,h,i,j,k,l,m Difference of meaning

Frequency of eating lunch

Overall Satisfaction

Eat lunch per week	Mean	N	Standard Deviation
None	2.88 ^a	8291	1.71
1-2 times	3.16 ^b	13010	1.70
3-5 times	3.65 ^{a,b}	50378	1.82

Effect measurement ($.25 \times 1.81 = .45$)

^{a,b} Difference of meaning

Food Quality

Eat lunch per week	Mean	N	Standard Deviation
None	2.67 ^a	9954	1.42
1-2 times	2.87 ^b	15112	1.38
3-5 times	3.28 ^{a,b}	57216	1.50

Effect measurement ($.25 \times 1.49 = .37$)

^{a,b} Difference of meaning

Staff

Eat lunch per week	Mean	N	Standard Deviation
None	3.38 ^a	9992	1.70
1-2 times	3.77 ^b	15135	1.70
3-5 times	4.24 ^{a,b}	57299	1.73

Effect measurement ($.25 \times 1.74 = .44$)

^{a,b} Difference of meaning

Diversity

Eat lunch per week	Mean	N	Standard Deviation
None	3.21 ^a	8652	1.95
1-2 times	3.47	12970	1.99
3-5 times	3.84 ^a	49158	2.05

Effect measurement ($.25 \times 2.04 = .51$)

^a Difference of meaning

Time/Cost

Eat lunch per week	Mean	N	Standard Deviation
None	2.93 ^a	9957	1.59
1-2 times	3.10	15108	1.57
3-5 times	3.43 ^a	57205	1.69

Effect measurement ($.25 \times 1.67 = .42$)

^a Difference of meaning

Ambiance

Eat lunch per week	Mean	N	Standard Deviation
None	3.32 ^a	9954	1.54
1-2 times	3.64 ^b	15106	1.46
3-5 times	4.07 ^{a,b}	57202	1.50

Effect measurement ($.25 \times 1.52 = .38$)

^{a,b} Difference of meaning

Choice of eating

Overall Satisfaction

Have a Choice	Mean	N	Standard Deviation
No	2.93	20468	1.66
Yes	3.68	53654	1.82

Effect measurement ($.25 \times 1.81 = .45$)

Food Quality

Have a Choice	Mean	N	Standard Deviation
No	2.64	23351	1.30
Yes	3.32	62205	1.52

Effect measurement ($.25 \times 1.49 = .37$)

Staff

Have a Choice	Mean	N	Standard Deviation
No	3.71	23361	1.71
Yes	4.17	62369	1.74

Effect measurement ($.25 \times 1.75 = .44$)

Diversity

Have a Choice	Mean	N	Standard Deviation
No	3.27	20034	1.97
Yes	3.85	53644	2.04

Effect measurement ($.25 \times 2.04 = .51$)

Time/Cost

Have a Choice	Mean	N	Standard Deviation
No	2.96	23341	1.58
Yes	3.44	62175	1.69

Effect measurement ($.25 \times 1.67 = .42$)

Ambiance

Have a Choice	Mean	N	Standard Deviation
No	3.60	23348	1.45
Yes	4.01	62156	1.54

Effect measurement ($.25 \times 1.53 = .38$)

Menu choices

Food Quality

Meat/meat alt.	Mean	N	Standard Deviation
1	2.86 ^a	7919	1.51
2	2.92 ^b	17028	1.52
3	3.20 ^c	20469	1.53
4	3.18	9298	1.44
5	3.19	9796	1.47
6	3.36 ^{a,b,c}	13912	1.46

Effect measurement ($.25 \times 1.50 = .38$)

^{a,b,c} Difference of meaning

Staff

Fruits/veg.	Mean	N	Standard Deviation
1	4.38 ^a	3494	1.84
2	4.13	11795	1.81
3	4.02	21153	1.77
4	3.86 ^a	20586	1.72
5	4.08	7330	1.75
6	4.17	14491	1.69

Effect measurement ($.25 \times 1.75 = .44$)

^a Difference of meaning

Nutrition

Fruits/veg.	Mean	N	Standard Deviation
1	2.91 ^{a,b,c}	3350	2.08
2	2.69	11231	1.90
3	2.46 ^a	19933	1.79
4	2.35 ^b	19077	1.69
5	2.36 ^c	6838	1.71
6	2.64	13254	1.85

Effect measurement ($.25 \times 1.80 = .45$)

^{a,b,c} Difference of meaning

Time/Cost

Fruits/veg.	Mean	N	Standard Deviation
1	3.83 ^{a,b,c,d}	3482	1.91
2	3.46	11782	1.73
3	3.26 ^a	21125	1.68
4	3.18 ^b	20429	1.62
5	3.35 ^c	7330	1.63
6	3.35 ^d	14490	1.65

Effect measurement ($.25 \times 1.68 = .42$)

^{a,b,c,d} Difference of meaning

Ambiance

Fruits/veg.	Mean	N	Standard Deviation
1	4.22 ^a	3484	1.73
2	3.87	11788	1.59
3	3.91	21130	1.55
4	3.81 ^a	20428	1.47
5	3.96	7329	1.50
6	4.04	14468	1.49

Effect measurement ($.25 \times 1.53 = .38$)

^a Difference of meaning

APPENDIX B

Tables for Middle/Junior High School Foodservice Survey Results

APPENDIX B

Middle/Junior High School Foodservice Survey Results

Average daily attendance

Overall Satisfaction

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.08 ^{a,b,c,d}	89	1.56
100-199	4.03 ^{a,e,f}	176	1.90
200-399	3.57 ^{b,e}	1849	1.71
400-599	3.80 ^c	4083	1.74
600-799	3.91 ^d	8982	1.65
800-999	3.43 ^f	2295	1.65
1000-2000	3.75	5207	1.68

Effect measurement ($.25 \times 1.68 = .42$)

^{a,b,c,d,e,f} Difference of meaning

Food Quality

Average Daily Attendance	Mean	N	Standard Deviation
<100	2.84 ^{a,b,c,d,e}	120	1.45
100-199	3.58 ^a	253	1.75
200-399	3.27 ^b	2407	1.52
400-599	3.39 ^{c,f}	5397	1.49
600-799	3.47 ^{d,g}	12072	1.41
800-999	3.00 ^{f,g}	3153	1.32
1000-2000	3.31 ^e	7003	1.40

Effect measurement ($.25 \times 1.43 = .36$)

^{a,b,c,d,e,f,g} Difference of meaning

Ambiance

Average Daily Attendance	Mean	N	Standard Deviation
<100	4.31 ^{a,f}	120	1.37
100-199	4.44 ^{b,g}	253	1.73
200-399	4.18 ^{c,h}	2407	1.40
400-599	4.26 ^{d,i}	5397	1.44
600-799	4.20 ^{e,j}	12072	1.39
800-999	3.59 ^{a,b,c,d,e}	3152	1.37
1000-2000	3.84 ^{f,g,h,i,j}	7003	1.384

Effect measurement ($.25 \times 1.42 = .36$)

a,b,c,d,e,f,g,h,i,j Difference of meaning

Price

Average Daily Attendance	Mean	N	Standard Deviation
<100	2.78 ^{a,b,c,d,f}	120	1.78
100-199	4.03 ^{a,g,h,i,j,m}	247	2.21
200-399	3.50 ^{b,g}	2340	1.95
400-599	3.56 ^{c,h,k}	5270	1.95
600-799	3.55 ^{d,i,l}	11737	1.85
800-999	3.04 ^{j,k,l}	3088	1.81
1000-2000	3.47 ^{f,m}	6882	1.84

Effect measurement ($.25 \times 1.88 = .47$)

a,b,c,d,e,f,g,h,i,j,k,l,m Difference of meaning

Staff

Average Daily Attendance	Mean	N	Standard Deviation
<100	4.16 ^{a,b}	120	1.71
100-199	5.22 ^{a,c,d,e,f,g}	253	1.83
200-399	4.45 ^{c,h,i}	2402	1.77
400-599	4.34 ^{d,j,k}	5388	1.80
600-799	4.24 ^{e,l,m}	12048	1.71
800-999	3.67 ^{b,f,h,j,l}	3149	1.68
1000-2000	3.83 ^{g,i,k,,m}	6992	1.66

Effect measurement ($.25 \times 1.74 = .44$)

a,b,c,d,e,f,g,h,i,j,k,l,m Difference of meaning

Time

Average Daily Attendance	Mean	N	Standard Deviation
<100	4.04 ^{a,b,c,d,e,f}	117	1.94
100-199	3.42 ^a	252	2.00
200-399	3.11 ^b	2398	2.0
400-599	3.08 ^c	5373	1.97
600-799	3.32 ^d	12032	1.96
800-999	2.96 ^e	3140	1.88
1000-2000	3.00 ^f	6965	1.90

Effect measurement ($.25 \times 1.95 = .49$)

^{a,b,c,d,e,f} Difference of meaning

Number served breakfast

Ambiance

Eat Breakfast	Mean	N	Standard Deviation
<100	4.11 ^a	18517	1.42
100-199	4.08	7783	1.42
200-399	3.85	981	1.36
400-599	3.56 ^a	827	1.45

Effect measurement ($.25 \times 1.41 = .35$)

^a Difference of meaning

Staff

Eat Breakfast	Mean	N	Standard Deviation
<100	4.12 ^a	18491	1.75
100-199	4.24 ^b	7771	1.72
200-399	4.14 ^c	977	1.67
400-599	3.52 ^{a,b,c}	824	1.64

Effect measurement ($.25 \times 1.74 = .44$)

^{a,b,c} Difference of meaning

Number served lunch

Overall Satisfaction

Eat Lunch	Mean	N	Standard Deviation
<100	2.97 ^{a,b,c,d,e,f}	410	1.68
100-299	3.97 ^{a,g}	1745	1.69
300-399	3.92 ^{b,h}	8805	1.68
400-599	3.65 ^{c,i}	8106	1.69
600-799	3.64 ^{d,j}	2708	1.62
800-999	3.58 ^{e,k}	643	1.66
1000-4999	4.48 ^{f,g,h,i,j,k}	264	1.51

Effect measurement ($.25 \times 1.69 = .42$)

a,b,c,d,e,f,g,h,i,j,k Difference of meaning

Food Quality

Eat Lunch	Mean	N	Standard Deviation
<100	2.69 ^{a,b,c,d,e,f}	567	1.45
100-299	3.54 ^{a,g}	2189	1.51
300-399	3.46 ^{b,h}	11527	1.45
400-599	3.26 ^{c,i}	11182	1.41
600-799	3.24 ^{d,j}	3619	1.37
800-999	3.26 ^{e,k}	962	1.34
1000-4999	4.15 ^{f,g,h,i,j,k}	359	1.32

Effect measurement ($.25 \times 1.43 = .36$)

a,b,c,d,e,f,g,h,i,j,k Difference of meaning

Ambiance

Eat Lunch	Mean	N	Standard Deviation
<100	3.86 ^{a,b,c}	567	1.47
100-299	4.32 ^{a,d,i}	2189	1.44
300-399	4.22 ^{b,e,j}	11526	1.39
400-599	3.98 ^f	11182	1.43
600-799	3.90 ^g	3619	1.38
800-999	3.44 ^{c,d,e,f,g,h}	962	1.32
1000-4999	3.99 ^{h,i,j}	359	1.39

Effect measurement ($.25 \times 1.42 = .36$)

^{a,b,c,d,e,f,g,h,i,j} Difference of meaning

Price

Eat Lunch	Mean	N	Standard Deviation
<100	2.96 ^{a,b,c}	548	1.84
100-299	3.52 ^{a,d}	2148	1.86
300-399	3.56 ^{b,e}	11272	1.88
400-599	3.41 ^f	10929	1.90
600-799	3.37 ^g	3482	1.84
800-999	3.41 ^h	950	1.81
1000-4999	4.64 ^{c,d,e,f,g,h}	355	1.72

Effect measurement ($.25 \times 1.88 = .47$)

^{a,b,c,d,e,f,g,h} Difference of meaning

Time

Eat Lunch	Mean	N	Standard Deviation
<100	3.01 ^a	562	1.95
100-299	3.14 ^b	2181	1.90
300-399	3.25 ^c	11481	1.96
400-599	3.12 ^d	11139	1.95
600-799	2.93 ^e	3598	1.86
800-999	2.87 ^f	959	1.87
1000-4999	4.25 ^{a,b,c,d,e,f}	357	2.06

Effect measurement ($.25 \times 1.95 = .49$)

^{a,b,c,d,e,f} Difference of meaning

Economic status

Food Quality

% Free	Mean	N	Standard Deviation
<10	3.22 ^{a,b}	384	1.41
11-20	3.63 ^{a,c,d,e,f}	1235	1.46
21-30	3.64 ^{b,g}	2356	1.35
31-40	3.26 ^{c,g,h,i,}	2167	1.39
41-50	3.48 ^{k,l}	2354	1.41
51-60	3.25	1293	1.38
61-70	3.08 ^{d,h,k,m}	2253	1.44
71-80	3.42 ^{m,n}	601	1.47
81-90	2.90 ^{e,i,l,n}	2109	1.32
91-100	3.14 ^f	3070	1.40

Effect measurement ($.25 \times 1.42 = .36$)

a,b,c,d,e,f,g,h,i,j,k,l,m,n Difference of meaning

Ambiance

% Free	Mean	N	Standard. Deviation
<10	4.18 ^{a,i}	384	1.25
11-20	4.39 ^{b,j}	1234	1.35
21-30	4.36 ^{c,k}	2356	1.33
31-40	4.04 ^{d,l}	2167	1.33
41-50	4.24 ^{e,m}	2354	1.38
51-60	3.97 ^{f,n}	1293	1.35
61-70	3.92 ^{g,o}	2253	1.41
71-80	4.02 ^{h,p}	601	1.60
81-90	3.61 ^{a,b,c,d,e,f,g,h}	2109	1.39
91-100	3.62 ^{i,j,k,l,m,n,o,p}	3070	1.44

Effect measurement ($.25 \times 1.41 = .35$)

a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p Difference of meaning

Price

% Free	Mean	N	Standard Deviation
<10	3.78 ^{a,b}	378	1.76
11-20	3.72 ^c	1223	1.86
21-30	3.29 ^a	2340	1.74
31-40	3.38	2142	1.79
41-50	3.59 ^d	2318	1.81
51-60	3.00 ^{b,c,d}	1281	1.76
61-70	3.32	2202	1.87
71-80	3.22	596	1.98
81-90	2.95	2057	1.83
91-100	3.30	3016	1.96

Effect measurement ($.25 \times 1.85 = .46$)

^{a,b,c,d} Difference of meaning

Frequency of eating lunch

Overall Satisfaction

Eat lunch per week	Mean	N	Standard Deviation
None	2.80 ^{a,b}	2837	1.62
1-2 times	3.44 ^a	4041	1.63
3-5 times	4.06 ^b	14640	1.62

Effect measurement ($.25 \times 1.69 = .42$)

^{a,b} Difference of meaning

Food Quality

Eat lunch per week	Mean	N	Standard Deviation
None	2.47 ^{a,b}	3839	1.29
1-2 times	2.99 ^{a,c}	5345	1.34
3-5 times	3.63 ^{b,c}	19335	1.39

Effect measurement ($.25 \times 1.43 = .36$)

^{a,b,c} Difference of meaning

Ambiance

Eat lunch per week	Mean	N	Standard Deviation
None	3.59 ^a	3839	1.45
1-2 times	3.84 ^b	5345	1.40
3-5 times	4.23 ^{a,b}	19334	1.38

Effect measurement ($.25 \times 1.41 = .35$)

^{a,b} Difference of meaning

Price

Eat lunch per week	Mean	N	Standard Deviation
None	3.10 ^a	3690	1.80
1-2 times	3.19 ^b	5217	1.79
3-5 times	3.63 ^{a,b}	18918	1.90

Effect measurement ($.25 \times 1.88 = .47$)

^{a,b} Difference of meaning

Staff

Eat lunch per week	Mean	N	Standard Deviation
None	3.51 ^a	3801	1.72
1-2 times	3.86 ^b	5341	1.70
3-5 times	4.34 ^{a,b}	19324	1.71

Effect measurement ($.25 \times 1.74 = .44$)

^{a,b} Difference of meaning

Choice of eating

Overall Satisfaction

Have a Choice	Mean	N	Standard Deviation
No	3.42	7227	1.60
Yes	3.94	15454	1.70

Effect measurement ($.25 \times 1.69 = .42$)

Price

Have a Choice	Mean	N	Standard Deviation
No	3.15	9455	1.83
Yes	3.63	20229	1.89

Effect measurement ($.25 \times 1.88 = .47$)

A la carte sales

Food Quality

A la carte	Mean	N	Standard Deviation
No	3.73	3726	1.50
Yes	3.29	26459	1.42

Effect measurement ($.25 \times 1.43 = .36$)

Ambiance

A la carte	Mean	N	Standard Deviation
No	4.49	3726	1.38
Yes	4.00	26458	1.41

Effect measurement ($.25 \times 1.40 = .35$)

Price

A la carte	Mean	N	Standard. Deviation
No	3.90	3671	1.96
Yes	3.41	25795	1.86

Effect measurement ($.25 \times 1.88 = .47$)

Staff

A la carte	Mean	N	Standard Deviation
No	4.66	3724	1.69
Yes	4.05	26408	1.73

Effect measurement ($.25 \times 1.74 = .44$)

Menu choices

Overall Satisfaction

Meat/meat alt.	Mean	N	Standard Deviation
1	2.87 ^{a,b,c,d,e}	1354	1.63
2	3.84 ^a	2056	1.62
3	4.02 ^b	3567	1.71
4	3.70 ^c	9153	1.70
5	3.99 ^d	2362	1.65
6	3.69 ^e	2556	1.60

Effect measurement ($.25 \times 1.69 = .42$)

^{a,b,c,d,e} Difference of meaning

Food Quality

Meat/meat alt.	Mean	N	Standard Deviation
1	2.55 ^{a,b,c,d,e}	1788	1.30
2	3.42 ^a	2763	1.38
3	3.60 ^{b,f}	4930	1.46
4	3.31 ^c	12342	1.43
5	3.50 ^d	2937	1.42
6	3.23 ^{e,f}	3502	1.37

Effect measurement ($.25 \times 1.43 = .36$)

^{a,b,c,d,e,f} Difference of meaning

Ambiance

Meat/meat alt.	Mean	N	Standard Deviation
1	3.67 ^{a,b}	1788	1.45
2	4.01	2763	1.38
3	4.30 ^a	4930	1.37
4	4.01	12342	1.44
5	4.20 ^b	2937	1.43
6	3.94	3501	1.36

Effect measurement ($.25 \times 1.42 = .36$)

^{a,b} Difference of meaning

Staff

Meat/meat alt.	Mean	N	Standard Deviation
1	3.71 ^{a,b,c}	1779	1.81
2	4.23 ^a	2758	1.69
3	4.39 ^b	4914	1.67
4	4.00	12331	1.76
5	4.32 ^c	2931	1.76
6	4.01	3496	1.66

Effect measurement ($.25 \times 1.74 = .44$)

^{a,b,c} Difference of meaning

Time

Meat/meat alt.	Mean	N	Standard Deviation
1	3.01	1778	2.00
2	3.40 ^a	2746	1.98
3	3.32 ^b	4913	1.97
4	3.13 ^c	12290	1.95
5	3.33 ^d	2926	1.98
6	2.61 ^{a,b,c,d}	3490	1.73

Effect measurement ($.25 \times 1.95 = .49$)

^{a,b,c,d} Difference of meaning

Overall Satisfaction

Fruits/veg.	Mean	N	Standard Deviation
1	2.11 ^{a,b,c,d,e}	228	1.42
2	3.65 ^a	2637	1.75
3	3.85 ^b	4372	1.61
4	3.72 ^c	8228	1.68
5	3.77 ^d	3469	1.72
6	4.02 ^e	3553	1.65

Effect measurement ($.25 \times 1.69 = .42$)

^{a,b,c,d,e} Difference of meaning

Food Quality

Fruits/veg.	Mean	N	Standard Deviation
1	1.76 ^{a,b,c,d,e}	244	.94
2	3.24 ^a	3423	1.49
3	3.43 ^b	6050	1.37
4	3.30 ^c	11183	1.41
5	3.41 ^d	4591	1.49
6	3.50 ^e	4621	1.45

Effect measurement ($.25 \times 1.44 = .36$)

^{a,b,c,d,e} Difference of meaning

Ambiance

Fruits/veg.	Mean	N	Standard Deviation
1	3.17 ^{a,b,c,d,e}	244	1.33
2	4.02 ^a	3423	1.49
3	4.15 ^b	6050	1.34
4	3.93 ^c	11183	1.42
5	4.16 ^d	4591	1.43
6	4.29 ^e	4620	1.38

Effect measurement ($.25 \times 1.42 = .36$)

^{a,b,c,d,e} Difference of meaning

Price

Fruits/veg.	Mean	N	Standard Deviation
1	3.10 ^{a,b}	167	2.09
2	3.50	3285	1.92
3	3.50	5983	1.81
4	3.33	11007	1.85
5	3.63 ^a	4395	1.95
6	3.64 ^b	4555	1.92

Effect measurement ($.25 \times 1.88 = .47$)

^{a,b} Difference of meaning

Staff

Fruits/veg.	Mean	N	Standard Deviation
1	3.57 ^{a,b,c,d}	240	1.78
2	4.11 ^a	3413	1.82
3	4.24 ^b	6033	1.68
4	3.94 ^e	11170	1.71
5	4.09 ^c	4586	1.76
6	4.56 ^{d,e}	4617	1.70

Effect measurement ($.25 \times 1.74 = .37$)

^{a,b,c,d,e} Difference of meaning

Overall Satisfaction

Breads/grains	Mean	N	Standard Deviation
1	3.36 ^{a,b}	1455	1.62
2	3.71	5030	1.69
3	4.07 ^{a,c}	5451	1.60
4	3.59 ^c	6240	1.73
5	3.96 ^b	2865	1.71
6	3.73	1446	1.61

Effect measurement ($.25 \times 1.69 = .42$)

^{a,b,c} Difference of meaning

Food Quality

Breads/grains	Mean	N	Standard Deviation
1	3.02 ^{a,b}	1951	1.38
2	3.35	6674	1.45
3	3.52 ^a	7315	1.41
4	3.20 ^c	8475	1.41
5	3.62 ^{b,c}	3704	1.50
6	3.26	1993	1.36

Effect measurement ($.25 \times 1.44 = .36$)

^{a,b,c} Difference of meaning

Time

Breads/grains	Mean	N	Standard Deviation
1	3.27 ^a	1945	1.96
2	3.20 ^b	6636	1.96
3	3.16 ^c	7292	1.91
4	3.13 ^d	8435	1.97
5	3.46 ^e	3688	2.03
6	2.46 ^{a,b,c,d,e}	1989	1.64

Effect measurement ($.25 \times 1.95 = .49$)

^{a,b,c,d,e} Difference of meaning

Preparation style

Overall Satisfaction

Satellite	Mean	N	Standard Deviation
No	3.99	3092	1.62
Yes	3.55	849	1.75

Effect measurement ($.25 \times 1.66 = .42$)

Food Quality

Satellite	Mean	N	Standard Deviation
No	3.59	4196	1.41
Yes	3.15	1065	1.54

Effect measurement ($.25 \times 1.45 = .36$)

APPENDIX C

Tables for Upper-Elementary School Foodservice Survey Results

APPENDIX C

Upper-Elementary School Foodservice Survey Results

Average daily attendance

Overall Satisfaction

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.45 ^{a,c,e}	286	.98
200-399	3.34 ^{b,d,f}	2777	1.03
400-599	3.17	3580	1.06
600-799	3.07 ^{c,d}	2228	1.05
800-999	2.93 ^{a,b}	306	.87
>1000	3.07 ^{e,f}	692	1.10

Effect measurement ($.25 \times 1.05 = .26$)

^{a,b,c,d,e,f} Difference of meaning

Food Quality

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.29 ^{a,c,e}	296	.80
200-399	3.29 ^{b,d,f}	2830	.93
400-599	3.07	3648	.96
600-799	3.01 ^{a,b}	2265	.94
800-999	2.71 ^{c,d}	310	.84
>1000	2.99 ^{e,f}	704	.92

Effect measurement ($.25 \times .95 = .24$)

^{a,b,c,d,e,f} Difference of meaning

Service

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.61 ^{b,e,f}	296	.80
200-399	3.80 ^{a,c,d,g,h}	2830	.89
400-599	3.40 ^{a,i,j}	3648	.95
600-799	3.27 ^{b,d}	2265	.93
800-999	3.18 ^{c,e,g,i}	310	.96
>1000	3.06 ^{f,h,j}	704	.96

Effect measurement ($.25 \times .95 = .24$)

a,b,c,d,e,f,g,h,i,j Difference of meaning

Cafeteria

Average Daily Attendance	Mean	N	Standard Deviation
<100	3.31 ^{a,b,c}	296	.84
200-399	3.43 ^{d,e,f,g}	2830	.94
400-599	3.13 ^{d,h,i}	3648	.95
600-799	3.02 ^{a,e,j,k}	2265	1.0
800-999	2.48 ^{b,f,h,j}	310	.92
>1000	2.53 ^{c,g,i,k}	704	1.1

Effect measurement ($.25 \times .99 = .25$)

a,b,c,d,e,f,g,h,i,j,k Difference of meaning

Number served breakfast

Overall Satisfaction

Eat Breakfast	Mean	N	Standard Deviation
<199	3.29 ^a	5849	1.03
200-399	3.16 ^b	896	1.00
600-799	3.93 ^{a,b}	67	1.20

Effect measurement ($.25 \times 1.03 = .26$)

a,b,c Difference of meaning

Food Quality

Eat Breakfast	Mean	N	Standard Deviation
<199	3.21 ^a	5960	.92
200-399	2.99 ^b	909	.91
600-799	3.74 ^{a,b}	70	.90

Effect measurement ($.25 \times .92 = .23$)

^{a,b} Difference of meaning

Service

Eat Breakfast	Mean	N	Standard Deviation
<199	3.58 ^a	5960	.93
200-399	3.39 ^b	909	.97
600-799	4.16 ^{a,b}	70	.66

Effect measurement ($.25 \times .94 = .24$)

^{a,b} Difference of meaning

Cafeteria

Eat Breakfast	Mean	N	Standard Deviation
<199	3.28 ^{a,b}	5960	.96
200-399	2.92 ^{a,c}	909	.98
600-799	3.62 ^{b,c}	70	.87

Effect measurement ($.25 \times .97 = .24$)

^{a,b,c} Difference of meaning

Number served lunch

Overall Satisfaction

Eat Lunch	Mean	N	Standard Deviation
<199	3.35 ^{a,j}	1519	1.00
200-399	3.27 ^{b,i}	5335	1.01
400-599	3.27 ^{c,h}	965	.99
600-799	2.96 ^{a,b,c,e,f}	133	1.07
800-999	3.29 ^{e,g}	125	1.15
>1000	3.93 ^{f,g,h,i,j}	67	1.20

Effect measurement ($.25 \times 1.01 = .25$)

a,b,c,d,e,f,g,h,i,j

Food Quality

Eat Lunch	Mean	N	Standard Deviation
<199	3.26 ^{a,e}	1561	.89
200-399	3.20 ^{b,f}	5419	.92
400-599	3.13 ^{c,g}	980	.87
600-799	2.90 ^{a,b,c,d}	135	.94
800-999	3.06 ^h	128	.89
>1000	3.74 ^{d,e,f,g,h}	70	.90

Effect measurement ($.25 \times .91 = .23$)

a,b,c,d,e,f,g,h

Difference of meaning

Service

Eat Lunch	Mean	N	Standard Deviation
<199	3.79 ^{a,b,c,d}	1561	.84
200-399	3.58 ^{e,f,g,h}	5419	.91
400-599	3.13 ^{a,e,i}	980	.95
600-799	3.29 ^{b,f,j}	135	.93
800-999	3.04 ^{c,g,k}	128	.93
>1000	4.16 ^{d,h,i,j,k}	70	.66

Effect measurement ($.25 \times .92 = .23$)

a,b,c,d,e,f,g,h,i,j,k

Difference of meaning

Cafeteria

Eat Lunch	Mean	N	Standard Deviation
<199	3.34 ^{a,b,c,d}	1561	.97
200-399	3.27 ^{e,f,g,h}	5419	.93
400-599	3.01 ^{a,e,i}	980	.97
600-799	2.94 ^{b,f,j}	135	.94
800-999	2.89 ^{c,g,k}	128	1.08
>1000	3.62 ^{d,h,i,j,k}	70	.87

Effect measurement ($.25 \times .95 = .24$)
^{a,b,c,d,e,f,g,h,i,j,k} Difference of meaning

Economic status

Overall Satisfaction

% Free	Mean	N	Standard Deviation
<10	3.20 ^{a,b,c,d}	182	.99
21-30	3.13 ^{e,f,g,h,i}	208	.88
31-40	3.46 ^{a,e,j}	330	.90
41-50	3.29	425	.97
51-60	3.06 ^{j,k}	82	.67
61-70	3.42 ^{b,f}	726	.93
71-80	3.57 ^{c,g,k}	127	.90
81-90	3.51 ^{d,h,}	364	.97
91-100	3.39 ^l	390	.99

Effect measurement ($.25 \times .95 = .24$)
^{a,b,c,d,e,f,g,h,i,j,k} Difference of meaning

Food Quality

% Free	Mean	N	Standard Deviation
<10	3.07 ^{a,b,c,d,e}	187	.90
21-30	3.05 ^{f,g,h,i,j,k}	214	.88
31-40	3.36 ^{a,f,l}	335	.82
41-50	3.24 ^{g,m,n,o}	443	.88
51-60	2.97 ^{l,m,p,q,r,s}	83	.74
61-70	3.34 ^{b,h,p}	738	.83
71-80	3.48 ^{c,i,n,q}	129	.79
81-90	3.47 ^{d,j,o,r}	369	.87
91-100	3.33 ^{e,k,s}	399	.90

Effect measurement ($.25 \times .87 = .22$)

a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s Difference of meaning

Service

% Free	Mean	N	Standard Deviation
<10	3.59 ^a	187	.85
21-30	3.23 ^{a,b,c,d,e,f,g,h}	214	.83
31-40	3.53 ^b	335	.82
41-50	3.68 ^c	443	.83
51-60	3.59 ^d	83	.78
61-70	3.76 ^e	738	.83
71-80	3.57 ^f	129	.82
81-90	3.69 ^g	369	.84
91-100	3.80 ^h	399	.84

Effect measurement ($.25 \times .84 = .21$)

a,b,c,d,e,f,g,h Difference of meaning

Cafeteria

% Free	Mean	N	Standard Deviation
<10	3.26 ^{a,b}	187	.77
21-30	2.86 ^{a,c,d,e,f,g,h,i}	214	.85
31-40	3.20 ^{c,j,k,l}	335	.85
41-50	3.36 ^{d,m}	443	.88
51-60	3.43 ^{e,j,n}	83	.75
61-70	3.47 ^{f,k,o}	738	.85
71-80	3.87 ^{b,g,l,m,n,o,p,q}	129	.77
81-90	3.39 ^{h,p}	369	.96
91-100	3.35 ^{i,q}	399	.89

Effect measurement ($.25 \times .88 = .22$)

a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q Difference of meaning

Frequency of eating lunch

Overall Satisfaction

Eat lunch per week	Mean	N	Standard Deviation
None	2.21 ^{a,b}	1254	1.17
1 - 3 times	3.04 ^{a,c}	3800	.96
4 - 5 times	3.42 ^{b,c}	7234	.96

Effect measurement ($.25 \times 1.05 = .26$)

a,b,c Difference of meaning

Food Quality

Eat lunch per week	Mean	N	Standard Deviation
None	2.35 ^a	1316	1.04
1 - 3 times	2.96 ^{a,b}	3857	.90
4 - 5 times	3.31 ^b	7317	.87

Effect measurement ($.25 \times .95 = .24$)

a,b Difference of meaning

Service

Eat lunch per week	Mean	N	Standard Deviation
None	3.11 ^{a,b}	1316	1.05
1 - 3 times	3.39 ^a	3857	.93
4 - 5 times	3.63 ^b	7317	.90

Effect measurement ($.25 \times .94 = .24$)

^{a,b} Difference of meaning

Cafeteria

Eat lunch per week	Mean	N	Standard Deviation
None	2.87 ^a	1316	1.03
1 - 3 times	3.09	3857	.96
4 - 5 times	3.27 ^a	7317	.96

Effect measurement ($.25 \times .97 = .24$)

^a Difference of meaning

Choice of eating

Food Quality

Have a choice	Mean	N	Standard Deviation
No	2.95	6354	.87
Yes	3.26	6540	1.0

Effect measurement ($.25 \times .95 = .24$)

Service

Have a choice	Mean	N	Standard Deviation
No	3.37	6354	.92
Yes	3.66	6540	.94

Effect measurement ($.25 \times .94 = .24$)

A la carte

Service

A la carte	Mean	N	Standard Deviation
No	3.83	249	.76
Yes	3.45	9755	.96

Effect measurement ($.25 \times .95 = .24$)

Cafeteria

A la carte	Mean	N	Standard Deviation
No	3.51	249	.87
Yes	3.12	9755	1.0

Effect measurement ($.25 \times 1.00 = .25$)

Menu choices

Overall Satisfaction

Meat/meat alt.	Mean	N	Standard Deviation
1	2.87 ^{a,b,c}	2905	1.08
2	3.36 ^a	4812	.99
3	3.56	529	1.01
4	3.49 ^b	162	1.04
5	3.32 ^c	930	.97

Effect measurement ($.25 \times 1.05 = .26$)

^{a,b,c} Difference of meaning

Food Quality

Meat/meat alt.	Mean	N	Standard Deviation
1	2.76 ^{a,b,c,d}	2960	.95
2	3.31 ^a	4906	.90
3	3.40 ^b	541	.86
4	3.29 ^c	170	.78
5	3.23 ^d	940	.88

Effect measurement ($.25 \times .94 = .24$)

^{a,b,c,d} Difference of meaning

Service

Meat/meat alt.	Mean	N	Standard Deviation
1	3.06 ^{a,b,c,d}	2960	.98
2	3.70 ^a	4906	.87
3	3.80 ^b	541	.82
4	3.59 ^c	170	.72
5	3.66 ^d	940	.88

Effect measurement ($.25 \times .94 = .24$)

^{a,b,c,d} Difference of meaning

Cafeteria

Meat/meat alt.	Mean	N	Standard Deviation
1	2.90 ^{a,b,c,d}	2960	1.02
2	3.32 ^a	4906	.93
3	3.30 ^b	541	.90
4	3.23 ^c	170	.87
5	3.33 ^d	940	.94

Effect measurement ($.25 \times .97 = .24$)

^{a,b,c,d} Difference of meaning

Overall Satisfaction

Fruits/veg.	Mean	N	Standard Deviation
1	2.54 ^{a,b,c}	847	1.15
2	3.19 ^{a,d,e}	5899	1.04
3	3.33 ^{f,g}	2978	.96
4	3.66 ^{b,d,f,h}	108	.83
5	3.93 ^{c,e,g,h,i}	67	1.20
6	3.43 ⁱ	40	1.26

Effect measurement ($.25 \times 1.05 = .26$)

^{a,b,c,d,e,f,g,h,i} Difference of meaning

Food Quality

Fruits/veg.	Mean	N	Standard Deviation
1	2.52 ^{a,b,c,d,e}	870	1.03
2	3.10 ^{a,f,g}	6008	.92
3	3.26 ^{b,h}	3024	.90
4	3.47 ^{c,f,i,j}	109	.74
5	3.74 ^{d,g,h,i}	70	.90
6	3.21 ^{e,j}	44	1.00

Effect measurement ($.25 \times .94 = .24$)
^{a,b,c,d,e,f,g,h,i,j} Difference of meaning

Service

Fruits/veg.	Mean	N	Standard Deviation
1	3.03 ^{a,b,c,d,e}	870	1.06
2	3.44 ^{a,f,g}	6008	.97
3	3.59 ^{b,h,i}	3024	.86
4	4.00 ^{c,f,h,j}	109	.60
5	4.16 ^{d,g,i}	70	.66
6	3.45 ^{e,j}	44	.91

Effect measurement ($.25 \times .95 = .24$)
^{a,b,c,d,e,f,g,h,i,j} Difference of meaning

Cafeteria

Fruits/veg.	Mean	N	Standard Deviation
1	2.80 ^{a,b,c,d}	870	1.06
2	3.10 ^{a,e,f,g}	6008	1.01
3	3.28 ^{b,h,i}	3024	.92
4	3.44 ^{c,e,j}	109	.78
5	3.62 ^{f,h,k}	70	.87
6	2.95 ^{d,g,i,j,k}	44	.89

Effect measurement ($.25 \times .1.00 = .25$)
^{a,b,c,d,e,f,g,h,i,j,k} Difference of meaning

Overall Satisfaction

Breads	Mean	N	Standard Deviation
1	2.86 ^{a,b,c}	2322	1.11
2	3.28 ^{a,d}	6246	1.01
3	3.31 ^b	1292	1.00
4	3.57 ^{c,d}	79	1.13

Effect measurement ($.25 \times 1.05 = .26$)

^{a,b,c,d} Difference of meaning

Food Quality

Breads	Mean	N	Standard Deviation
1	2.79 ^{a,b,c}	2369	.97
2	3.20 ^a	6366	.92
3	3.22 ^b	1307	.90
4	3.32 ^c	83	.95

Effect measurement ($.25 \times .94 = .24$)

^{a,b,c} Difference of meaning

Service

Breads	Mean	N	Standard Deviation
1	3.13 ^{a,b,c}	2369	.99
2	3.54 ^a	6366	.93
3	3.68 ^b	1307	.87
4	3.55 ^c	83	.81

Effect measurement ($.25 \times .95 = .24$)

^{a,b,c} Difference of meaning

Preparation style

Overall Satisfaction

Satellite	Mean	N	Standard Deviation
No	3.43	2800	1.02
Yes	3.03	1803	1.04

Effect measurement ($.25 \times 1.04 = .26$)

Food Quality

Satellite	Mean	N	Standard Deviation
No	3.35	2858	.89
Yes	2.90	1835	.92

Effect measurement ($.25 \times .92 = .23$)

Service

Satellite	Mean	N	Standard Deviation
No	3.88	2858	.81
Yes	3.09	1835	.95

Effect measurement ($.25 \times .95 = .24$)

Cafeteria

Satellite	Mean	N	Standard Deviation
No	3.36	2858	.95
Yes	3.00	1835	1.02

Effect measurement ($.25 \times .99 = .25$)