

**Report
on
Teacher/Administrator School Foodservice Survey**

by

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**National Food Service Management Institute
The University of Mississippi**

Building the Future Through Child Nutrition

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PREFACE

In 1995 the Applied Research Division of the National Food Service Management Institute initiated a research study to develop customer surveys for school foodservice and nutrition programs. The Teacher/Administrator School Foodservice Survey is the last survey in the sequence that includes high school, middle/junior high school, upper-elementary school, and lower-elementary school for parents surveys. School foodservice administrators now have available a complete set of surveys to analyze customers' wants and needs for school foodservice and nutrition programs.

Dr. Mary Kay Meyer was the research scientist with primary responsibility for the development of this series of surveys.

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REPORT ON TEACHER/ADMINISTRATOR SCHOOL FOODSERVICE SURVEY

EXECUTIVE SUMMARY

The development of this survey completes a series of customer surveys developed by the National Food Service Management Institute Applied Research Division. The series includes high school, middle/junior high school, upper-elementary school, lower-elementary school for parents, and teachers/administrators.

The methodology used to develop the survey included a focus group and survey. The pilot survey was composed of forty-five questions concerning attributes of the school foodservice and nutrition programs and ten demographic questions.

Volunteers to pilot test the survey were solicited from the listserv MEALTALK. Volunteers included directors, supervisors, and managers from suburban and rural districts. The average daily attendance in the schools participating ranged from 212 in one elementary school to 3,308 in one high school. Participants were from the following states: Maine, Florida, Massachusetts, Texas, Tennessee, Colorado, Illinois, and Louisiana.

A total of 473 usable surveys were included in the analysis. Factor analysis was used to develop the construct of the survey. Six factors were identified that explained 74% of the variance. They included: Food Quality and Preferences, Staff, Ambiance, Price, Nutrition, and Time. Of the forty-four questions, forty-three loaded into the model.

Stepwise multiple regression was used to determine the predictors of teachers/administrators satisfaction. Results provided a six variable model explaining 78.8% of the variance. The six variables are as follows: *I like the quality of the food choices; The foodservice staff are courteous; The menu includes food I like; The price of the food is reasonable for the portions served; and Food on the serving lines is attractively presented.*

To reduce the number of questions for the final survey, factors were analyzed for logical redundancy and duplicate loadings. Fifteen questions were removed from the survey. The final survey will be composed of 30 questions concerning the attributes of the school foodservice and nutrition program and six demographic questions.

INTRODUCTION

Although the primary customer for the school foodservice and nutrition programs is the student, secondary customers such as teachers, administrators, and parents may influence the perceptions of the students concerning the school foodservice and nutrition program. It is important for school foodservice administrators to monitor the wants and needs of secondary customers. To provide them with a tool to determine the wants and needs of the teachers and administrators, a school foodservice survey was developed.

The development of this survey completes a series of customer surveys developed by the National Food Service Management Institute Applied Research Division. The series includes: high school, middle/junior high school, upper-elementary school, lower-elementary school for parents, and teachers/administrators.

METHOD

Survey development

A focus group was held with 14 teachers/administrators from a local school. Participants were asked three main questions.

1. In five words or less, when you think about the school meals program (breakfast and lunch) what is the first thing that comes to mind?
2. What characteristics are important to you to have in a school meals program?
3. Of the characteristics we have listed, what are the two most important ones to you?

Characteristics ranked as most important (#1) included clean environment, variety of food, and good food. Those characteristics ranked important (#2) included pleasant workers, good food, sanitary facilities, price, variety, nutritious foods offered, appearance of the food, quality, and service. Forty-four questions were developed based on these characteristics. The survey was reviewed by two research scientists who were foodservice directors. As a result of their comments, one question was added. In addition to the forty-five questions concerning attributes of the school foodservice and nutrition programs, ten demographic questions were included in the survey. The complete survey is shown in the Appendix.

Survey pilot testing

Volunteers to pilot test the survey were solicited from the listserv MEALTALK. Volunteers included directors, supervisors, and managers. Directors and supervisors were asked to survey one high school, middle school, and elementary school in their districts. Managers surveyed their schools. Participants represented suburban and rural districts with average daily attendance ranging from 212 in one elementary school to 3,308 in one high school. Participants were asked to submit the total number of teachers/administrators in each of the schools selected to participate in the survey. Surveys were provided for a statistically significant sample of the

teachers/administrators in each of the participating schools.

Volunteers coordinated the distribution of the surveys with the school principals. The school foodservice directors attached a letter explaining the survey and requesting that teachers/administrators complete the survey and return it to a specified location by a specified date. Participants randomly selected teachers/administrators to participate. In most schools the survey and letter were placed in the mail boxes. In one school the surveys were taken to the teachers' rooms. In this particular school the return rate was very low and the foodservice director attributed the low return rate to the distribution method.

RESULTS

Sample

Return rates for the schools participating in the survey ranged from 5% to 91%. Table 1 shows complete results of the return rate for the pilot testing of the teacher/administrator foodservice survey. An overall return rate of 32% (558 of 1,737) was received. If more than eight questions and/or questions 16 or 32 were unanswered or answered with *I do not know* the survey was not included in the analysis. Analysis showed that including surveys with more than eight questions unanswered or answered with *I do not know* skewed the curve away from the mean. As a result, 473 usable surveys were included in the analysis.

Table 1 Teacher/Administrator Foodservice Survey Return Rate

School ID	Sent	Return	% Return
14	163	32	20
15	136	40	29
16	80	58	73
17	80	32	40
18	60	3	5
19	11	10	91
20	132	19	14
21	98	32	33
22	45	16	36
23	50	21	42
24	39	35	90
25	64	26	41
26	195	21	11
27	132	34	26
28	132	39	30
29	60	44	73
30	35	16	46
31	90	28	31
32	75	28	37
33	60	24	40
Total	1737	558	32

Statistical Analysis

Factor analysis was used to develop the construct of the survey. Of the forty-four questions, excluding the question concerning overall satisfaction, forty-three loaded into the model. The only question not loading into the model was, *The menu choices allow me to meet my religious needs*. Six factors were identified that explained 74% of the variance. They included: Food Quality and Preferences, Staff, Ambiance, Price, Nutrition, and Time. Table 2 shows the factors and highest loading score for each question.

Table 2 Factor and Loading Score for Survey Questions

Question	Factor	Loading Value
Food serving lines are clean.	Staff	.539
The menu includes food I like.	Food Quality & Preferences	.835
I like the aroma of the food.	Food Quality & Preferences	.667
The atmosphere in the dining area is cheerful.	Ambiance	.486
Nutritious food is available daily.	Food Quality & Preferences	.751
The foodservice staff are friendly.	Staff	.883
The serving lines move quickly.	Staff	.586
The price of the food is reasonable for the portions served.	Price	.611
Tables in the dining area are clean.	Ambiance	.740
A variety of food is available daily.	Food Quality & Preferences	.718
I like the taste of the food.	Food Quality & Preferences	.696
The noise level in the dining area is OK.	Ambiance	.516
Low fat items are offered.	Food Quality & Preferences	.611
The foodservice staff are courteous.	Staff	.863
Time available to eat once I have received my food is adequate.	Time	.785
The price of the meals fits into my weekly budget.	Price	.678
Spills and trash in the dining area are cleaned quickly.	Ambiance	.755
The menu choices allow me to meet my religious needs.	-----	-----
Food on the serving lines is attractively presented.	Food Quality & Preferences	.505
The number of seats in the dining area is comfortable.	Ambiance	.652
Tables in the dining area are comfortable.	Ambiance	.559
Serving sizes are adequate.	Price	.628
Foodservice staff smile and greet me when I am served.	Staff	.810
The number of serving lines is adequate.	Time	.431

Question	Factor	Loading Value
Meal component/a la carte items are available to purchase.	Price	.419
The floor in the dining area is clean.	Ambiance	.821
The menu choices allow me to meet special dietary needs.	Food Quality & Preferences	.631
I like the quality of the breads served.	Food Quality & Preferences	.487
Nutrition information on food products is posted.	Nutrition	.791
Food service staff answer my questions.	Staff	.644
Overall, time given for meals is adequate.	Time	.739
The dining area is clean.	Ambiance	.773
I like the quality of the hot entrees.	Food Quality & Preferences	.650
Information on calories contained in food is available.	Nutrition	.769
The foodservice staff treats me with respect.	Staff	.836
I like the quality of the food choices.	Food Quality & Preferences	.704
I like the quality of the salads.	Food Quality & Preferences	.632
Information on the fat content of foods is available.	Nutrition	.807
Meal component/a la carte items are reasonably priced.	Price	.554
I like the quality of the cold sandwiches.	Food Quality & Preferences	.582
Hot food is served hot and cold food is served cold.	Price	.468
A choice of beverage is offered.	Price	.556
I have a place to eat my meal without interruption.	Ambiance	.597
The menu meets my special dietary needs (diabetes, low fat).	Food Quality & Preferences	.617

n=266

To reduce the number of questions on the survey, factors were analyzed for logical redundancy and duplicate loadings. Fifteen questions were removed from the survey including the question that did not load during factor analysis. Table 3 shows the final factors with questions and reliability coefficient.

Table 3 Factors and Questions for the Teacher/Administrator Foodservice Survey

Factor	Alpha
Food Quality and Preferences	.9470
The menu includes food I like.	
I like the aroma of the food.	
A variety of food is available daily.	
I like the taste of the food.	
Low fat items are offered.	

Factor	Alpha
Food on the serving lines is attractively presented.	
The menu choices allow me to meet special dietary needs.	
Staff	.9635
The foodservice staff are friendly.	
The foodservice staff are courteous.	
Foodservice staff smile and greet me when I am served.	
Foodservice staff answer my questions.	
The foodservice staff treat me with respect.	
Ambiance	.8925
The atmosphere in the dining area is cheerful.	
Tables in the dining area are clean.	
The noise level in the dining area is OK.	
Spills and trash in the dining area are cleaned quickly.	
The number of seats in the dining area is comfortable.	
The floor in the dining area is clean.	
I have a place to eat my meal without interruption.	
Price	.9040
The price of the food is reasonable for the portions served.	
The price of the meals fits into my weekly budget.	
Serving sizes are adequate.	
Meal component/a la carte items are available to purchase.	
Meal component/a la carte items are reasonably priced.	
Nutrition	.9345
Nutrition information on food products is posted.	
Information on calories contained in food is available.	
Information on the fat content of foods is available.	
Time	.8914
Time available to eat once I have received my food is adequate.	
Overall, time given for meals is adequate.	

Means and standard deviations were calculated for each question and factor. The factor Staff had the highest mean score and Nutrition had the lowest factor score. Table 4 shows the complete results.

Table 4 Variable Means and Standard Deviations

Factor	N	Mean^a	Standard Deviation
Food Quality and Preferences	473	4.7	1.3
The menu includes food I like.	472	4.8	1.6
I like the aroma of the food.	469	4.9	1.4
A variety of food is available daily.	470	4.9	1.7
I like the taste of the food.	470	4.8	1.5
Low fat items are offered.	445	4.3	1.6
Food on the serving lines is attractively presented.	471	4.9	1.4
The menu choices allow me to meet special dietary needs.	452	4.4	1.6
Staff	472	5.5	1.4
The foodservice staff are friendly.	467	5.6	1.6
The foodservice staff are courteous.	470	5.6	1.6
The foodservice staff smile and greet me when I am served.	471	5.4	1.5
The foodservice staff answer my questions.	461	5.4	1.4
The foodservice staff treat me with respect.	471	5.5	1.5
Ambiance	472	5.0	1.1
The atmosphere in the dining area is cheerful.	469	4.9	1.6
Tables in the dining area are clean.	471	5.3	1.2
The noise level in the dining area is OK.	468	4.7	1.5
Spills and trash in the dining area are cleaned quickly.	451	5.2	1.3
The number of seats in the dining area is comfortable.	456	5.0	1.4
The floor in the dining area is clean.	471	5.2	1.2
I have a place to eat my meal without interruption.	472	4.9	1.7
Price	472	4.8	1.3
The price of the food is reasonable for the portions served.	471	4.8	1.8
The price of the meals fits into my weekly budget.	468	4.9	1.6
Serving sizes are adequate.	470	4.8	1.6
Meal component/a la carte items are available to purchase.	464	5.2	1.3
Meal component/a la carte items are reasonably priced.	453	4.6	1.7
Nutrition	319	3.7	1.5
Nutrition information on food products is posted.	336	3.8	1.7
Information on calories contained in food is available.	332	3.8	1.6
Information on the fat content of foods is available.	316	3.6	1.6
Time	473	4.5	1.6
Time available to eat once I have received my food is adequate.	473	4.5	1.6
Overall, time given for meals is adequate.	473	4.4	1.7

^a Scale: 1= very strongly disagree to 7= very strongly agree

Stepwise multiple regression was used to determine the predictors of teachers/administrators satisfaction. Results provided a six variable model explaining 78.8% of the variance. The six variables are as follows: *I like the quality of the food choices; The foodservice staff are Courteous; The menu includes food I like; The price of the food is reasonable for the portions served; and Food on the serving lines is attractively presented.* Table 5 shows complete results of the regression analysis.

Table 5 Regression Analysis of Teacher/Administrator Pilot Study

Question ^a	Beta	t	Significance
I like the quality of the food choices.	.217	5.25	.000
I like the taste of the food.	.212	5.12	.000
The foodservice staff are courteous.	.179	6.83	.000
The menu includes food I like.	2.61	7.57	.000
The price of the food is reasonable for the portions served.	.083	3.02	.003
Food on the serving lines is attractively presented.	.090	3.02	.003

^a $R^2 = .790$, $F(6,551) = 345.719$, $p < .001$

Analysis of variance was conducted to determine if differences existed for teachers/administrators according to the grade level, frequency of eating school lunch, length of school lunch, and years of experience. A significant difference ($p < .005$) was found for grade level among teachers in the kindergarten, elementary, middle, and high schools for overall satisfaction and the five factors Food Quality and Preferences, Staff, Price, Nutrition, and Time. The factor mean scores were highest for the elementary school teachers/administrators and lowest for the middle/junior high school teachers/administrators. It is interesting to note that no difference was found according to grade level for the factor Ambiance. Frequency of eating impacted overall satisfaction and all six factors. When the teachers/administrators ate three to five times per week, they were significantly ($p < .005$) more satisfied than teachers/administrators who ate less frequently. A significant difference ($p < .005$) was found among teachers/administrators according to the length of the lunch period for overall satisfaction and the four factors Food Quality and Preference, Staff, Ambiance, and Price. It was interesting to note that when the lunch period was longer the satisfaction with the factor Time did not increase. Because 342 of the 462 surveys included in this analysis had a lunch period of 21-30 minutes, no conclusions can be drawn from these data. No significant differences were found among teachers/administrators according to the years of experience and whether they did or did not have a duty free lunch. However, the scores for three factors Staff, Nutrition, and Time were higher when teachers/administrators had between three and five years of experience. Teachers/administrators scored the two factors Staff and Ambiance higher when they had a duty free lunch and the factor Nutrition higher when they did not have a duty free lunch.

CONCLUSIONS

- \$ A valid and reliable model was developed to assess the teachers' and administrators' perceptions of the school foodservice and nutrition programs. Factor analysis identified six factors: Food Quality and Preferences, Staff, Ambiance, Price, Nutrition, and Time.
- Six questions were identified that predicted satisfaction with the school foodservice and nutrition program. They were: *I like the quality of the food choices; I like the taste of the food; The foodservice staff are courteous; The menu includes food I like; The price of the food is reasonable for the portions served; and Food on the serving lines is attractively presented.*

RECOMMENDATIONS

- \$ The series of school foodservice surveys should be monitored periodically for validity and reliability and revised as needed.

APPENDIX



Teacher/Administrator School Foodservice Survey

Please answer the following questions about your school foodservice and nutrition program whether you eat school meals or not.

Completely fill in the circle of your answer. Use a # 2 pencil

	Strongly Disagree		Neither Agree Nor Disagree		Strongly Agree		I Don't Know	
	①	②	③	④	⑤	⑥	⑦	⑧
1. Overall, I am happy with the school foodservice.	①	②	③	④	⑤	⑥	⑦	⑧
2. Food serving lines are clean.	①	②	③	④	⑤	⑥	⑦	⑧
3. The menu includes food I like.	①	②	③	④	⑤	⑥	⑦	⑧
4. I like the aroma of the food.	①	②	③	④	⑤	⑥	⑦	⑧
5. The atmosphere in the dining area is cheerful.	①	②	③	④	⑤	⑥	⑦	⑧
6. Nutritious food is available daily.	①	②	③	④	⑤	⑥	⑦	⑧
7. Foodservice staff are friendly.	①	②	③	④	⑤	⑥	⑦	⑧
8. The serving lines move quickly.	①	②	③	④	⑤	⑥	⑦	⑧
9. The price of the food is reasonable for the portions served.	①	②	③	④	⑤	⑥	⑦	⑧
10. Tables in the dining area are clean.	①	②	③	④	⑤	⑥	⑦	⑧
11. A variety of food is available daily.	①	②	③	④	⑤	⑥	⑦	⑧
12. I like the taste of the food.	①	②	③	④	⑤	⑥	⑦	⑧
13. The noise level in the dining area is OK.	①	②	③	④	⑤	⑥	⑦	⑧
14. Low fat items are offered.	①	②	③	④	⑤	⑥	⑦	⑧
15. Foodservice staff are courteous.	①	②	③	④	⑤	⑥	⑦	⑧
16. Time available to eat once I have received my food is adequate.	①	②	③	④	⑤	⑥	⑦	⑧
17. The price of meals fits into my weekly budget.	①	②	③	④	⑤	⑥	⑦	⑧
18. Spills and trash in the dining area are cleaned quickly.	①	②	③	④	⑤	⑥	⑦	⑧
19. The choices of food available allow me to meet my religious needs.	①	②	③	④	⑤	⑥	⑦	⑧

- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 20. Food on the serving line is attractively presented. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 21. The number of seats in the dining area is comfortable. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 22. Tables in the dining area are comfortable. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 23. Serving sizes are adequate. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 24. Foodservice staff smile and greet me when I am served. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 25. The number of serving lines is adequate. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 26. Meal component/a la carte items are available for purchase. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 27. The floors in the dining area are clean. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 28. The choices of food available allow me to meet special dietary needs. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 29. I like the quality of the brands offered. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 30. Nutrition information on food products is posted | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 31. Foodservice staff answer my questions. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 32. Overall, time given for meals is adequate. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 33. The dining area is clean. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 34. I like the quality of the hot entrees. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 35. Information on calories contained in food is available. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 36. Foodservice staff treat me with respect. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 38. I like the quality of the salads. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 39. Information on fat contained in food is available. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 40. Meal component/a la carte items are priced reasonably. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 41. I like the quality of the cold sandwiches. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 42. Hot food is served hot and cold food is served cold. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 43. A choice of beverages is offered. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 44. I have a place to eat my meal without interruption. | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |
| 45. The menu meets my special dietary needs (diabetes, low fat...). | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ |

We want to know about you

46. The number one reason I eat school breakfast is:

- ① The prices are good.
- ② The food is good.
- ③ I have no other choice
- ④ It is convenient.
- ⑤ Other teachers eat there.
- ⑥ I do not eat school breakfast.
- ⑦ Other _____

47. The number one reason I eat school lunch is:

- ① The prices are good.
- ② The food is good.
- ③ I have no other choice.
- ④ It is convenient.
- ⑤ Other teachers eat there.
- ⑥ I do not eat school lunch
- ⑦ Other _____

48. How many times a week do you eat school breakfast?

0 ①②③④⑤

49. How many times a week do you eat school lunch?

0 ①②③④⑤

50. How many times a week do you bring your lunch or leave campus?

0 ①②③④⑤

51. The length of our lunch period is?

- ① 20 minutes or less
- ② 21 to 30 minutes
- ③ 31 to 45 minutes
- ④ 46 to 60 minutes

52. I have a duty free lunch period?

- ① yes
- ② no

53. In what grade level do you teach?

- ① kindergarten
- ② elementary school
- ③ middle/junior high school
- ④ high school

54. How many years have you taught school?

- ① Less than 2
- ② 3 to 5
- ③ 6 to 10
- ④ more than 10

55. If you are a school administrator or staff, in what school category do you work.

- ① elementary school
- ② middle/junior high school
- ③ high school