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| RESEARCH ARTICLE

Food Satisfaction among Students: A Study of Present Public University Students in Bangladesh

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| ABSTRACT
This study's primary goal is to examine the characteristics of public university canteen food service. A saying goes, "Health is riches." Therefore, it not only helps them to clear their minds but also enables them to focus on their studies, families, and careers. A model was created from the information that was provided and tested using information from a survey that was carried out at a college in northwest Pennsylvania. The findings imply that staff behavior, food quality, and price are the three key factors that affect student satisfaction. Cleanliness, responsiveness, and environment are further important factors. Considering these factors (food quality, food variety, price justice, ambiance, etc.) could help people in charge of food services provide more value and satisfaction to improve students' entire educational experience.

| KEYWORDS
Food Satisfaction, Hypothesis, Bivariate and Multivariate Analysis, Binary Logistic, Ordinary Logistic, Chi-square Test

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1. Introduction

The Student Satisfaction Approach was developed by Lee Harvey at the University of Central England (UCE) (Harvey et al., 1997) as a method of providing information about the student experience from their own perspective. It has been implemented at many institutions in the UK and around the world, enabling useful comparisons to be made across the sector and across international boundaries. The principal components of the methodology are:

1. Student-determined questions: the Student Satisfaction research focuses on the total learning experience as defined by students.

2. Satisfaction and importance ratings: the research examines student satisfaction with aspects of provision and then identifies which of those areas are important for students.

3. Management information for action: those areas which are important to students but where students are dissatisfied are priority areas for management intervention.

4. Food satisfaction: Food satisfaction is an important part of the students' satisfaction. College students' food service needs are an important area that needs more research. While the importance of offering quality education is paramount, for many colleges that are embattled in their quest to retain students, attention to food services can be important.

Sulek and Hensley (2004) find the significance of food quality, physical settings & service in a full-service restaurant and report that food quality appears to be the most important indicator of customer satisfaction, although food quality describes only 17% of repeat-patronage intention (Namkung & Jang, 2007). In one study which is conducted in Amritsar and Jalandhar, India, it was

found that 15.3% of people have their meals from branded restaurants, 23.3% of people take food from fast food outlets and the rest, 61.4% people use other shops or like to have food from their own home (Kumar & Bhatnagar, 2017). Though statistical studies of satisfaction related to the food of different countries, people are hardly found, a standard measure can be emphasized of satisfaction. So, the quality of food & satisfaction varies among the world countries. Developed countries' food pattern shows in fulfilling students' expectations compelling variables are (food & Review of Economics and Development Studies, Vol. 6 (2) 2020, 363-379 365) [2] beverage quality, price & value fairness, food taste, nutrition, comport, assortment, convenience &operating hours.

2. Literature Review

The enrollment of students is unceasingly increasing in tertiary education institutions; thus, the demand for food service is also increasing, particularly in universities. As a result, these increased demands are putting increased pressure on foodservice operators to satisfy students' needs and expectations due to intense competition (Li, 2008). College student's needs are particularly important today because colleges are often embattled in their quest to retain students who have many choices at their disposal.

If the type of food available to them is inappropriate, it could cause them to be dissatisfied. It's no wonder that many colleges have begun seeking the opinions of their students regarding food services and whether such services meet students' needs. College student's needs are particularly important today because colleges are often embattled in their quest to retain students who have many choices at their disposal. While the importance of offering quality education is paramount for these colleges, more administrators are 52 JOURNAL OF FOODSERVICE BUSINESS RESEARCH beginning to recognize and appreciate the concept of the total offering in which food services can play a vital role. For example, Kesten (1997) and Richardson et al. (1994) indicate how religion and ethnicity can contribute to food choices and the consequent satisfaction that food service users experience.

In one study, Yale Dining Services (1999) asked campus diners about their services using a rating scale of 1 (poor) to 5 (Excellent). Students rated freshness of food 2.83, food appearance 2.96, taste 3.29, healthy options 2.91, staff responsiveness 3.75, and the waiting line 3.28, among other variables. In another study at Hartnell College (2002) that used a similar rating scale, students rated food quality 3.13, while the quality of service was rated 3.25. Rhode Island College (2004) used a modified seven-point scale to assess a variety of service variables where food selection was rated 4.12 and the student union Café 5.39 as a good alternate dining option.

As indicators of the quality of services provided, these ratings can help improve food services provided by the college cafeterias. Other colleges have used percentage figures to assess food services. Using this approach, Ranger College in Texas found that 31.6 percent strongly disagreed with the statement, "I am satisfied with the food offered in the college cafeteria." The study also indicated that only 34.2 percent agreed with the cafeteria hours. Rybczynski et al. (2004) found that at Saint George University, a branch of the University of Toronto, 60 percent were not satisfied with the food provided on campus. Concerns centered on variety, quality, convenience, cost and hours of operation. Reviewing the existing literature, there are several aspects found to influence students' satisfaction when choosing a food service, such as the food quality, variety, price fairness, ambiance, and staff (Chang et al., 2014; Kim, 2004.

Additionally, Ng (2005) proposed a few more factors that influence student satisfaction, such as food quality and beverages, the quality of service, value, price, hygiene and cleanliness, location, and product variety. In a recent study, the relationship between food quality attributes and customer satisfaction is found to be statistically significant (Nor et al., 2016). To satisfy the purpose of the current study, four factors will be investigated in relation to their impact on student satisfaction: food quality, price fairness, ambiance and staff.

3. Methodology

3.1 Research approach and sampling method

Finding out how satisfied college students are with various aspects of cafeteria foodservice is the only purpose of this study. Therefore, in order to put these ideas to the test, a quantitative research strategy was used. Students at Dhaka University, Jahangirnagar University, Khulna University, Rajshahi University, Chittagong University, Jagannath University, and others were included in the study's overall population. A total of almost 40,000 undergrads were enrolled in these schools' various undergraduate programs (UGC, 2015). The sheer volume of pupils made it challenging to conduct truly random samples. Therefore, the researchers in this study collected their data using a convenience sampling strategy. Proportional sample sizes were initially estimated from each institution before convenience sampling was implemented (see Table 1).

The aforementioned schools were chosen for the data collection since they provide a well-established cafeteria service for their students. For simplicity's sake, we'll use each current student as a single research subject. Using a convenience sampling strategy, data are gathered. A non-probability sampling technique called convenience sampling includes taking a sample from the nearest

area of the population. Convenience sampling was the method of sampling used in this investigation. This approach, despite being less trustworthy, is used in this investigation due to its low cost and quick turnaround.

3.2 Data Collection

Estimating the appropriate number of people to include in a sample is likely the most challenging aspect of any statistical inquiry. It is a common belief that the size of a sample ought to have some kind of proportionate relationship to the size of the population from which it is collected. There are a total of 326 valid surveys utilized for the purpose of statistical research, which makes use of numbers. Data collecting using secondary data and a main data sample survey. However, no secondary data were used for this particular investigation.

We know for a large population, the formula for estimating sample size is:

$$n = \frac{z^2(1-\frac{\alpha}{2})}{d^2}$$

Where $p = 0.5$ to be assumed proportion in the target population estimated to have a parameter characteristic.

$d = 0.054$, degrees of dispersion.

$q = 1$, and $z = 1.96$ at $\alpha = 0.05$ level of significance. Therefore, $n = 329{\sim}326$,

For the different sampling scheme procedures prevail. Considering the limitation of available resources, it was not possible for us to deal with a large sample. Here, 326 individuals are selected randomly from our study population.

Table1: Proportional Sampling

No.	Name of University	Frequency	Percentage	Valid percentage	Cumulative Percentage
1.	Dhaka University	147	45.1	45.1	45.1
2.	Jahangirnogor university	54	16.6	16.6	61.7
3.	Khulna University	19	5.8	5.8	67.5
4.	Rajshahi University	38	11.7	11.7	79.1
5.	Chittagong University	26	8.0	8.0	87.1
6.	Jaggannath University	19	5.8	5.8	92.9
7.	Others	23	7.1	7.1	100
8	Total	326	100	100	

For measuring the performance of all factors for student satisfaction, 6 points Likert Scale is used, where 6=Overall Satisfied, 5 = Very Satisfied, 4 = Somewhat Satisfied, 3 = neither agree nor disagree(neutral), 2 = somewhat disagree, 1 = very disagree.

Qualitative and quantitative systems are used in the paper. Microsoft Excel version 10.0, Smart PLS software version 3.0, and SPSS software version 20.0 is performed to analyze and test the theoretical model. Following the literature, data are analyzed using Univariate, Bivariate, and Multivariate Analysis, and the statistical tool and techniques are Anova, Frequency Table, t-Test, Binomial logistic Regression Crosstab Analysis, Pearson Correlation Coefficients, Structural Equation Modeling, Confirmatory Factor Analysis, and Path Analysis. The findings show that food quality, food variety, ambiance & staff have a significant positive influence on student satisfaction, and the higher price has a negative impact on student satisfaction.

3.3 Hypothesis Development

Food quality: Food service quality is an essential factor that virtually affects the quality of student life at universities (Klassen et al., 2005). In this connection, Ng (2005) stated that overall food quality attributes (taste, freshness, and appearance) play a higher

vital role in attaining or exceeding customer satisfaction and intent to come back than other factors such as price, value, convenience, and cleanliness. Another research conducted by Andaleeb and Caskey (2007) expressed that most of the students prefer Asian Journal of Empirical Research, 8(6)2018: 225-237 227 to deal with on-campus foodservices more frequently in case of the improvement of food and beverage quality. Thus, the hypothesis is developed in the following manner:

H1: There is a significant positive relationship between food quality and student satisfaction.

Food variety: Xi and Shuai (2009) found that food variety ($\beta = 0.222$, $< p = 0.05$) has a significant positive influence on student satisfaction. Furthermore, they added that the food variety ought to be highlighted. So, for instance, not to produce students' dissatisfaction with monotonous food. Few more researchers postulated that food variety is the predictor of customer satisfaction (Ryu et al., 2008). In recent times, Ahmed et al. (2017) stated that menu variety is the predictor of customer satisfaction. Thus, the hypothesis is developed in the following manner:

H2: There is a significant positive relationship between food variety and student satisfaction.

Price fairness: It is known to all that students have budget constraints that affect their decisions to select foodservice, as they obviously seek reasonable prices (Li, 2008). In this respect, Nadzirah et al. (2013) suggest that price is the foremost concern of students in university foodservice because they buy food on limited budgets. They also highlight that the price should be reasonable for the food quantity served, so the customer would feel that the food and service received were worth their price, resulting in student satisfaction. Xi and Shuai (2009) establish that price fairness has a significant influence on students' satisfaction with cafeteria foodservice. Mui et al. (2014) also suggested that the university cafeteria should take serious measures to improve the food quality and price for long term sustainability. Thus, the hypothesis is formulated in the following manner:

H3: There is a significant positive relationship between price fairness and student satisfaction.

Ambience: Troye et al. (1995) defined ambiance as a structural element. Instead of being a finished product, the elements contained in ambiance involve long-term investments and cannot be changed easily. Preceding studies have agreed on the significance of the environmental factors or even indicated them as one of the fundamental indications to customers judging restaurant quality (Baker et al., 1994; Rys et al., 1987). Andaleeb and Caskey (2007) stated that atmosphere and cleanliness are major variables that have an impact on student satisfaction. In this respect, Norhati and Hafisah (2013) stated that the physical setting influences customers' perceptions of service quality. Thus, the hypothesis is formulated in the following manner:

H4: There is a significant positive relationship between ambiance and student satisfaction.

Staffs: The interaction between the cafeteria staff and students, such as friendly gestures (e.g., smiles and greeting and high levels of responsiveness, cleanliness, and quick service), is important as it influences student satisfaction with the service quality (Barlett and Han, 2007). The staff performance at each food outlet is extremely important in increasing the degree of customer satisfaction (Mui et al., 2014). Thus, the following hypothesis is presented in this manner: H5: There is a significant positive relationship between staff and students' satisfaction.

3.4 Theoretical underpinnings

The Cue Utilization Theory was developed by (Jerry, 1972), and it argues that products or services consist of numerous arrangements of cues that serve as substitute indicators of product or service quality. There are both intrinsic and extrinsic cues that help customers to determine the quality towards a specific product or service that is responsible for customer satisfaction. Intrinsic cues are those cues Asian Journal of Empirical Research, 8(6)2018: 225-237 228 that are inherent to a product. Literature has given evidence that consumers incline to use an amalgamation of both extrinsic and intrinsic cues while appraising the quality of a product (Richardson et al., 1994). Extrinsic attributes are those attributes that relate to the focal thing but are not an inherent part of the object.

Fundamentally, extrinsic cues are products related to providing information such as brand and price (Reimer and Kuehn, 2005). This model is reflected to be a general framework which is not restricted to merely two measures of quality because there is no universal agreement as to the nature or content of service quality dimensions (Brady and Cronin, 2001). Nevertheless, there is a general agreement that service quality is a multidimensional or multi-attribute construct (Kang and James, 2004; Gronroos, 1990 Parasuraman et al., 1985; 1988). In this study, food quality, food variety, ambience, and staffs are reflected as intrinsic cues, and price fairness is reflected as an extrinsic cue for determining student satisfaction.

4. Results and Discussion

This section is a comparative or descriptive analysis of the study based on the study results, previous literature, etc. The results should be offered in a logical sequence, giving the most important findings first and addressing the stated objectives. The author

should deal only with new or important aspects of the results obtained. The relevance of the findings in the context of existing literature or contemporary practice should be addressed.

4.1 subheading

Table 2: Percentage Distribution of Age of the Respondent, Data Source: Author

Age Group					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Below 21	20	6.1	6.1	6.1
	21-25	221	67.8	67.8	73.9
	26-28	60	18.4	18.4	92.3
	28+	25	7.7	7.7	100.0
	Total	326	100.0	100.0	

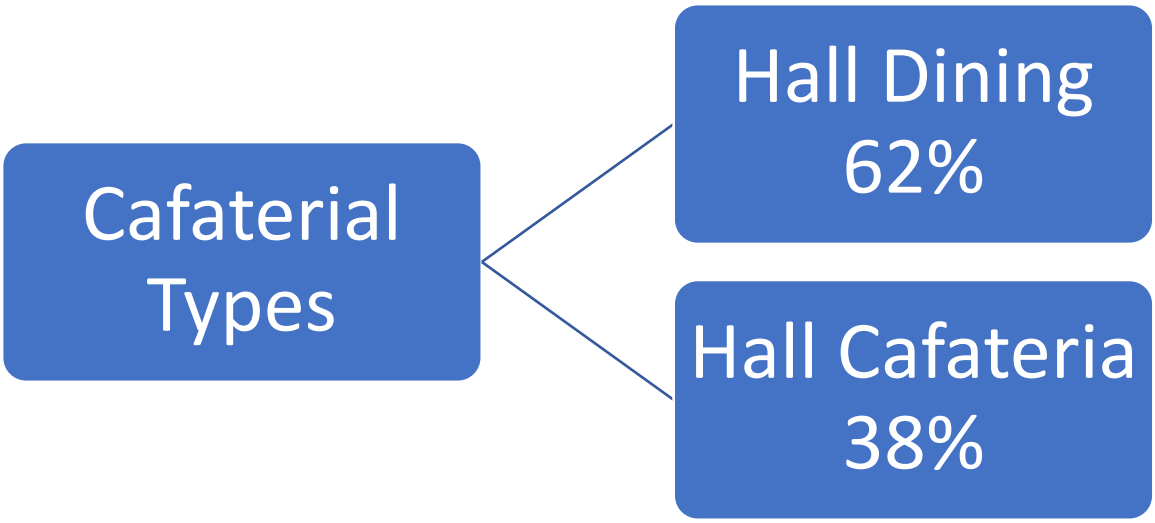
Table 2 shows that the age of 21-25 is 67.8%, and this proportion is larger than others.

Table 3: Percentage Distribution of current cafeteria types based on the response of current students

Cafeteria types					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**Hall dining**	202	62.0	62.0	62.0
	Hall Cafeteria	124	38.0	38.0	100.0
	Total	326	100.0	100.0	

Table 3 shows that 62.0% of students are taking meals at the Hall dining, and 38.0% of students are taking meals at Hall Cafeteria.

The fact that the majority of replies came from hall dining indicates that the students in question take the majority of their meals in hall dining rather than in the hall cafeteria. It is obviously clear that the following figure from table 3 relates to us because we worked with those students. When compared to the prices at a cafeteria, the food in any Hall dining room is more affordable.



It is noteworthy that students limited financial resources in the area of campus dining affect their selections and choices of dining establishments since they are constantly looking for affordable pricing due to their tight budgets.

Table 4: Distribution of departmental percentages based on respondent's on-campus residence

Students living on campus					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Science	126	38.7	38.7	38.7
	Arts	102	31.3	31.3	69.9
	Business Studies	90	27.6	27.6	97.5
	Others	8	2.5	2.5	100.0
	Total	326	100.0	100.0	

Table 4 shows that 38.7% of students come from science, 31.3% of students come from arts, 27.6% of students come from business studies, and 2.5% of students come from other faculty.

We, therefore, conclude, based on the percentages of students, that the vast majority of our respondents are enrolled in the Science department and live in one of the halls of residence.

Table 5: Percentage of important factor satisfaction level based on different variables

Important factor satisfaction level				
		Responses		Percent of Cases
		N	Percent	
Valid	Food Quality	112	15.9%	34.5%
	Food Variety	218	31.0%	67.1%
	Price and Fairness	140	19.9%	43.1%
	Ambience	188	26.7%	57.8%
	Staff behavior	45	6.4%	13.8%
Total		703	100.0%	216.3%

Table 5 shows that students' satisfaction based on food quality is 15.9%, student's satisfaction based on food variety is 31.0%, students' satisfaction based on price and fairness is 19.9%, students' satisfaction based on ambiance is 26.7%, and student's satisfaction based on staffs' behavior is 6.4%.

Table 6: percentage of most visiting times at cafeteria and dining of the respondents

Most visiting time to cafeteria and dining					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	breakfast	26	21.0	21.0	21.0
	lunch	34	27.4	27.4	48.4
	dinner	47	37.9	37.9	86.3
	Other times	17	13.7	13.7	100.0
	Total	124	100.0	100.0	

Table 6 shows that at dining, 21.0% of students visiting the cafeteria and dining for breakfast, 27.4% of students visiting the cafeteria and dining for lunch, 37.9% students visited the cafeteria and dining at dinner, and 13.7% of students visited the cafeteria and dining in the other times.

Table 7: various components that affect students' food satisfaction

	Very dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Very satisfied
Whatever Price	.8%	18.5%	21.8%	45.2%	13.7%
Acceptable Price	16.1%	34.7%	20.2%	23.4%	5.6%
Changeable Price	50.00%	.8%	8.1%	37.1%	4.00%
Food Freshness	1.6%	8.9%	30.6%	54.0%	4.8%
Hot Food	4.8%	27.4%	33.1%	24.2%	10.5%
Delicious Food	4.8%	15.3%	16.9%	40.3%	22.6%
Available Food Choices	1.00%	9.7%	13.5%	55.6%	20.2%
Special meals and Promotions	3.2%	8.9%	18.5%	53.2%	16.1%
Hand wash facilitate	2.4%	8.1%	19.4%	52.4%	17.1%
Cleanliness	.8%	4.8%	17.7%	54.8%	21.8%
Opening Hours	2.4%	5.6%	21%	50.8%	20.2%
Staffs hygiene	2.4%	9.7%	23.4%	37.1%	27.4%
Easy to Talk	6.5%	8.9%	23.4%	44.4%	16.9%
Smiling and Greetings	1,6%	9.7%	25%	41.1%	22.6%

Table 7 displays the various perceptions of students as indicated on a 5-point Likert scale. Most of the students who answered the survey are happy, somewhat happy, or neutral about the price, quality, variety, and attitude of the staff. Most students aren't happy with Changeable prices, and 50% say that's the case.

The results of this study indicate that the vast majority of students attending public institutions are satisfied with the dining hall and cafeteria services that are provided to them.

4.2 Bivariate Analysis

The study's framework Food Satisfaction based on these Five Factors

Figure: Research Study

Table 8: Association between food satisfaction and different factors (Food quality, Food variety, Price and Fairness, Ambience, and Staffs attitude) those are associated with Current student's food Satisfaction

Factors	Pearson chi-square value	Likelihood Ratio	Linear by linear Association	N	df	Asymp.sig(2-sided)
1. Food quality	99.212	96.314	14.516	326	24	0.000*
2. food variety	33.042	37.159	12.922		12	0.001*
3. Price and fairness	99.212[a]	96.314			24	0.000*
4. Ambience	22.322[a]	23.101	10.824		9	0.008*
5. Staffs Attitude	27.381[a]	33.855	5.378		20	0.073

Table 8 shows that we focused on five factors that might be used as predictors of a measure called Students' Food Satisfaction, which is our goal variable for this project. When we find one P-value that is less than 0.05, we are able to interpret that finding as meaning that our predictor has a significant association with our response variable. In table 9, which may be seen below, we shall show our findings.

Table 9: Summary of Hypothesis testing for Chi square test from Bivariate analysis

Number	Hypothesis	Remarks	Asymp.sig(2-sided)
H1	There is a significant positive relationship between food quality and food satisfaction	Accepted	0.000<0.05 Significant
H2	There is a significant positive relationship between food variety and food satisfaction	Accepted	0.001<0.05 Significant
H3	There is a significant positive relationship between Price and food satisfaction	Accepted	0.000<0.05 Significant
H4	There is a significant positive relationship between ambiance and food satisfaction	Accepted	0.008<0.05 Significant
H5	There is a significant positive relationship between staff and food satisfaction	Not Accepted	0.073>0.05 Insignificant

Overall, the view from those tables, the quality of food, different types of dishes, food price, and the cafeteria's environment are strongly related to students' food gratification.

4.3 Multivariate Analysis

4.3.1 Binary logistic Model

To investigate the Food Satisfaction level of the current University students.

- In the logistics model with more than one independent variable,
- Where Z is a linear function of the explanatory variables,
- If $X_1, X_2, \dots, X_k$ represent various determining characteristics of loyalty,

then the model can be expressed analytically using the 'Z' equation, which is as follows:

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k$$

where, X_i = explanatory variables for all $i = 1, 2, \dots, k$

β_i = parameters of the model for all $i = 1, 2, \dots, k$.

For our findings,

$\boldsymbol{Z}$ = students' food satisfaction,

β_0 = intercept

and $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are our coefficients of Food quality, Food variety, Price and fairness, University, Ambience, and Staff, respectively.

Table 10: level of variables for binary logistic model

Variable Names	Measurements
Dependent Variable	
Satisfaction level with Food	1 = Satisfaction with Food 0 = Otherwise
Independent Variables	
Food Quality	1 = Food Freshness 2 = Hot Food 3 = Flavor of Food 0 = Delicious Food
Food Variety	1 = Available Food Choices 0 = Special Meals and Promotions
Price and Fairness	1 = Whatever Price 2 = Acceptable Price 0 = Changeable Price
University Current Students	1 = University of Dhaka 2 = Jahangirnagar University 3 = Khulna University 4 = Rajshahi University 5 = Chittagong University 6 = Jagannath University 7 = Others
Ambience	1 = Hand Wash Facilities 2 = Cleanliness 0 = Opening Hours
Staff	1 = Hygiene 2 = Easy to Talk 0 = Otherwise

In table 10, we input levels (e.g., 0, 1, 2, etc.) for both our response variable and our predictor variables in order to figure out the logistic model estimators in table 11, which is below table 10.

Table 11: Logistic model estimates

Variables in the equation							
Variables Names		**B**	**S. E**	**Wald**	**df**	**Sig.**	**Exp(B)**
Food quality		.746	.379	3.865	1	.049	2.108
Ref: Food freshness	Hot Food	2.210	.790	7.820	1	.005	9.120
	Flavor of Food	2.221	.606	13.436	1	.000	9.215
	Delicious Food	.778	.355	4.808	1	.028	2.176
	Food Variety	.457	.346	1.743	1	.187	1.580

Ref: University of Dhaka	Jahangirnagar University	.066	.413	.026	1	.872	.936
	Khulna University	.682	.598	1.301	1	.254	.505
	Rajshahi University	1.115	.460	5.871	1	.015	.328
	Chittagong University	1.667	.549	9.231	1	.002	.189
	Jagannath University	1.495	.784	3.635	1	.057	.224
	Others	2.496	1.095	5.199	1	.023	12.133
Ref: Handwash Facilities	Ambiance	1.705	.337	25.629	1	.000	5.500
	Cleanliness	.804	.336	5.730	1	.017	2.234
	Opening Hours	1.087	.311	12.176	1	.000	2.964
	Constant	2.213	.516	18.401	1	.000	.109

Table 11 shows that Multivariate analysis revealed that in the case of Food quality, Hot food, Flavor of food, and deliciousness of food had a strong correlation with food satisfaction among current university students when Food freshness is utilized as a benchmark. The students of Rajshahi University and Chittagong University have the most influence on meal satisfaction when using Dhaka University as a benchmark. For Ambience, opening hours, and Cleanliness, Food satisfaction is strongly influenced. Students desire a wide assortment of foods, a more diverse menu, and healthier options. The food issue explaining customer happiness was significant and perhaps the most malleable area where improvements might be implemented rapidly. More fruits and vegetables, a salad bar, a wider variety of menu options, and healthier meal preparation could go a long way toward enhancing customer satisfaction.

4.3.2 Ordinal Logistic Model

1. Ordinary logistic model: To investigate the satisfaction level of the Hall dining service.
2. Ordinary logistic model: To investigate the satisfaction level of the Hall Cafeteria service.

The Functional Form of the model:

$$logit[p(Y \leq j)] = log \frac{P(Y \leq j)}{\left(1 - P(Y \leq j)\right)}$$

$$= \alpha + \beta X$$

where $j = 1, 2, \dots, j - 1$.

and X_i's are categorical variables or continuous, but Y are categorical with the order.

As in the Bivariate analysis, the cell number is less than 5, so we have to take some necessary action to fit them into a Model. To remove this problem, we decrease the LIKERT scale following way:

- Very dissatisfied and somewhat dissatisfied recode to dissatisfied as -1.
- Neutral as 0
- Very satisfied and somewhat satisfied recode to satisfied as 1.

4.3.2.1 Variables Selection in Food Satisfaction for Hall Dining:

Independent Variables:

- Food quality
- Fresh food
- Hot food
- Spice food
- Variation of food
- Cost
- Availability of food
- Time schedule
- Environment

- Hygiene and sanitization.
- Hand wash facilities
- Staffs attitude

Dependent Variable:

- Food satisfaction for the current student

4.3.2.2 Ordinary Logistics regression model in Hall Dining food service:

Hypothesis:

H_0= The overall model is insignificant

H_1=The overall model is significant

Table 12: Model Fitting Information

Model	-2log likelihood	Chi-square	df	Sig.
Intercept Only	173.386			
Final	91.425	81.961	12	0.000

Link: logit-function

Table 13: The Hall Dining Coefficient in ordinary logistic model

	Variables Names		Estimate	Std. error	Wald	df	Sig.
Threshold	Food satisfaction level for current student	Dissatisfied	-8.635	1.491	33.522	1	0.000
		Neutral	-6.217	1.281	23.541	1	0.000
	Food Quality	Dissatisfied	-3.194	1.028	9.661	1	0.002
		Neutral	.981	.955	1.055	1	.304
		Satisfied	0	.	.	0	.
Location	Fresh Food	Dissatisfied	2.838	2.575	1.215	1	.270
		Neutral	-.262	1.397	0.035	1	.851
		Satisfied	0	.	.	0	.
	Hot Food	Dissatisfied	-2.890	1.287	5.043	1	0.025
		Neutral	-.262	.810	1.781	1	.182
		Satisfied	0	.	.	0	.
	Spice Food	Dissatisfied	.337	.894	.142	1	.706
		Neutral	.659	.906	.530	1	.467
		Satisfied	0	.	.	0	.
	Variation of Food	Dissatisfied	-3.048	1.177	6.711	1	.010
		Neutral	-.478	.957	.250	1	.617
		Satisfied	0	.	.	0	.
		Dissatisfied	-1.374	1.223	1.262	1	.261

	Cost	Neutral	-2.533	1.068	5.620	1	.018
		Satisfied	0	.	.	0	.
	Availability of Food	Dissatisfied	3.856	1.796	4.611	1	0.032
		Neutral	-1.850	0.937	3.895	1	0.048
		Satisfied	0	.	.	0	.
	Time Schedule	Dissatisfied	-2.384	1.015	5.518	1	0.019
		Neutral	-1.1772	0.888	3.978	1	0.046
		Satisfied	0	.	.	0	.
	Environment	Dissatisfied	0.654	1.049	.388	1	.533
		Neutral	-1.901	0.809	5.523	1	.019
		Satisfied	0	.	.	0	.
	Hygiene And sanitization	Dissatisfied	-4.410	1.51	6.342	1	0.012
		Neutral	-0.473	0.879	.289	1	0.591
		Satisfied	0	.	.	0	.
	Hand Wash facilities	Dissatisfied	-.391	1.450	0.073	1	.788
		Neutral	-.188	.775	0.059	1	0.808
		Satisfied	0	.	.	0	.
	Staffs Attitude	Dissatisfied	-6.615	2.566	6.645	1	0.060
		Neutral	-2.347	1.065	4.860	1	0.070
		Satisfied	0	.	.	0	

4.3.3.3 Variables Selection in Food Satisfaction for Hall cafeteria:

Independent Variables:

- Quality of foods
- Variation of foods
- Price of foods
- Time schedule
- Safety and hygiene
- Food availability

Dependent Variable:

- Food satisfaction for the current student

4.3.3.4 Ordinary Logistics regression model in Hall Cafeteria food service:

Table of coefficient in ordinal Logistic Regression Model:

Hypothesis:

H_0= The overall model is insignificant

H_1=The overall model is significant

Table 14: Model Fitting Information

Model	-2log likelihood	Chi-square	df	Sig.
Intercept Only	319.248			
Final	207.993	111290	12	0.000

Link: logit-function

Table 15: The Hall Cafeteria Co-efficient in Ordinary Logistic Regression Model

	Variables names		Estimate	Std.Error	Wald	df	Sig.
Threshold	Current student food satisfaction level	Dissatisfied	-5.144	.820	39.370	1	.000
		Neutral	-4.290	.791	29.455	1	.000
Location	Quality of Food	Dissatisfied	-1.922	.420	20.956	1	.000
		Neutral	.040	.662	.004	1	.952
		Satisfied	0	.	.	0	.
	Different types of foods	Dissatisfied	-.485	.459	1.115	1	.291
		Neutral	-.037	.467	.006	1	.937
		Satisfied	0	.	.	0	.
	Price	Dissatisfied	-1.492	.421	12.547	1	.000
		Neutral	-.618	.583	1.123	1	.289
		Satisfied	0	.	.	0	.
	Time responsibility	Dissatisfied	-1.227	.409	9.004	1	.003
		Neutral	-.720	.485	2.206	1	.137
		Satisfied	0	.	.	0	.
	safe and hygiene	Dissatisfied	-1.441	.713	4.084	1	.043
		Neutral	-1.277	.793	2.592	1	.107
		Satisfied	0	.	.	0	.
	Food availability Facilities	Dissatisfied	-1.053	.460	5.236	1	.022
		Neutral	-1.383	.601	5.296	1	.021
		Satisfied	0	.	.	0	.

The results are interpreted as follows based on Table 8, Table 9, Table 12 and Table 13.

Given that the results indicate that the food quality is significant at the p 0.05 level, hypothesis H1 is supported. This results in the hypothesis being accepted because there is a connection between meal quality and student pleasure that is favorable. This result is in line with other earlier researchers (Ng, 2008; Andaleeb and Caskey, 2007). The emphasis is on the need for cafeteria and dining hall management to continuously monitor food quality in order to increase student happiness.

The association between food diversity and student food satisfaction is shown to be positive, supporting the hypothesis H2 that there is a relationship. The outcome suggests that meal variety is important for student pleasure. This outcome conflicts with what Xi and Shuai predicted (2009).

The evidence indicates that price Fairness has a significant impact on students' enjoyment of their food, supporting Hypothesis H3. This outcome is consistent across many academics (Nadzirah et al., 2013; Mui et al., 2014).

Similarly, the result supports Hypothesis H4. According to the data, the environment positively affects students' overall happiness with their educational experience. As a result, those in charge of cafeteria services should make an effort to maintain a pleasant decorative atmosphere.

The study's conclusion does not support hypothesis H5. This conclusion conflicts with those made by Barlett and Han (2007) and Mui et al. (2014). This finding indicates that overall staff behavior and performance have no discernible impact on student happiness.

5. Conclusion

The model-building process and the investigations enabled us to reach a number of conclusions about the factors that contribute to students' food satisfaction with cafeterias at some public universities in Bangladesh. This information may be useful to other institutions considering changes to their dining services similar to the one being investigated, especially if they are exploring these changes. According to the summary table (see Table 9) and the logistic regression analysis (see Tables 13 and 14), improvements to food quality and selection, food item variability, surroundings, and pricing may have the greatest potential in terms of student food satisfaction.

It is clear that the students want a wider variety of foods. Modern colleges should be concerned with providing a diverse selection of foods for their students to choose from because they recognize the importance of having a diverse student body. The food problem, on the other hand, is simple to resolve. Additional fruits and vegetables should be made available so that students can meet their nutritional needs. To better accommodate the dietary requirements of the various student organizations, dining service administrators should meet with those organizations to discuss the creation of a menu that includes a greater variety of foods representing different ethnicities. As special products, these numerous options could be switched around. It is not necessary to remove anything significant from the current menu; rather, some minor changes to the existing items and the addition of a few new ones are required to include more variety and place a greater emphasis on health. In general, it appears that the students are pleased with the manners displayed by the cafeteria employees.

Nonetheless, experts believe that there are a few areas where there is room for improvement. According to the item analysis, when attempting to resolve certain problems, the staff should be more genuine in their efforts and sensitive to the needs of the students. We had the impression that the staff did not always treat the students with dignity. In other words, it appears that the students believe that the costs could be lower while still providing a higher value. The administration is obligated to keep a close eye on the situation as the cost of education and other necessities (gas, entertainment, communication, etc.) rises. Even though the floor and areas where food was prepared appeared to be well-kept, the students felt that the tables needed to be cleaned more frequently. In general, we believe that these suggestions have the potential to increase both the cafeteria's revenue and the level of satisfaction felt by its customers. If students have a positive experience in the cafeteria, they will return more frequently and spend more money. Furthermore, they will have a more positive overall impression of the product. Prospective students may consider the university's efforts to meet the needs of its students in the cafeteria when deciding whether or not to enroll. Improving the cafeteria and the services it provides presents a wide range of opportunities and benefits to a university interested in understanding and meeting the needs of its customers.

Furthermore, recognizing the need for ongoing improvement may aid in the development of well-organized strategies for student enjoyment. The university cafeteria administrators are obligated to take the necessary steps to meet the requirements for cycle menu planning and the inclusion of freshly prepared meals among the available menu options at a specific time. It is critical to foster employee development and to foster a welcoming environment. The primary categories identified in this study can help university cafeterias implement a variety of quality control measures.

6. Limitation

If the study were to be reproduced, there are a number of things that might have been done differently. The method used to administer the surveys is one illustration. The participants were randomly chosen during random times on a particular week from high-traffic areas in their campus setting. The survey results might have been even more representative if students were polled in more campus buildings, such as the dorms, as opposed to merely the library and cafeteria. The results would be more broadly applicable if they included other colleges in the region or further afield. Attention should also be paid to the time frame that the researchers had to use to conduct the surveys: Only one week was given to the researchers to gather the data. They would have been able to distribute more questionnaires if they had been given more time. As a result, sampling errors might have decreased, but non-sampling errors might have increased. We believe that by implementing the findings of our study, college cafeterias like the one studied can better serve students' needs and increase student satisfaction.

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