

Street food eating habits in Bangladesh: A study on Dhaka city

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Abstract: *There is a very high demand of the street foods in Dhaka city of Bangladesh. The reasons can be attributed by the tastes and varieties of foods, easily accessibility, low price, readily made, attraction to the foods, and above all, needs of the street people. Dhaka is the most populous city of Bangladesh. It is also the capital of the country. There are more than 18 million people, as of 2016 in Greater Dhaka city, living here in this city. It is also one of the most populated cities in the world with a density of 23,234 people per square kilometer within a total area of 300 square kilometers. Street food entrepreneurs are still unable to fulfill the demands of this huge population of this city. Due to the rise in income of the city dwellers, they are coming out from their congested houses to the parks and streets on the vacations and holidays and eating street foods. Sometimes, this is a fashion of the young people eating foods standing at the street. Although, a significant portion of these people think that the street foods are unhygienic and unhealthy even then they eat those foods when they are outside their houses. Therefore, this paper seeks to identify the reasons for which the street foods are eaten by the people living in Dhaka city. This study has been conducted among the people who eat street foods at their leisure time or vacations. To conduct this study, a total of 340 street food lovers were interviewed with the help of a structured questionnaire. Both descriptive and inferential statistics were used to analyze the data. Multivariate analysis techniques were used to identify the factors having influence on the habits of street food eaters in Dhaka city. The confirmatory factor analysis identified six factors such as, pleasure and soundness, convenience and variety, cost, attractiveness, food value, & taste and image. Results also show that the street food eating habit of the people of Dhaka City is significantly influenced by the pleasure and soundness, convenience and variety, cost, and attractiveness to the foods. This study suggests that the tastes and variety of street foods, accessibility, price and attractiveness should be emphasized to increase the attraction of the street food eaters towards the street foods in Dhaka City of Bangladesh.*

Keywords: Street food, Tastes and variety of foods, Personal pleasure, Attractiveness, and Convenience.

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Any remaining errors or omissions rest solely with the author(s) of this paper.

Background

Due to the expansion of information technology and media, street foods are becoming more appealing to the food lovers in Dhaka – the capital city of Bangladesh. Due to the rise in income of the city dwellers, they come out from their congested houses to the parks and streets on the vacations and eat street foods. Sometimes, this is a fashion of the young people. Hence, a large number of entrepreneurs are developed in this sector to meet this growing demand. Among the different informal sector's jobs, after rickshaw pulling street food is the second largest employment in the urban area like Dhaka city who are mainly from the rural areas of Bangladesh. There are more than 3,00,000 street vendors who are delivering the street foods to a million of customers living in Dhaka city (Khairuzzaman, et.al., 2014).

Dhaka is the largest city of Bangladesh is Dhaka, which has a population of more than 18 million and a density of 19,447 people per square mile (50,368/square mile). In Dhaka city, the term “street food” is considered as being foods or beverages that are sold basically by the informal sector small entrepreneurs. Street foods are generally sold from stands or stalls (usually not permanent structures) on the footpath of busy streets in Dhaka, usually at a lower cost than fast foods. Therefore, they provide an available source of food to all classes of people. There are many food items and beverages are found at the street and many sellers sell the similar items. Mostly, these items include snacks like sweets, different types of fries, vegetables, foods and drinks such as soft drinks, fruits juice, etc. (Appendix 1). However, cooked foods are also sold, often on the road sides.

Street food plays a very important role for fulfilling the nutritional needs of the people living in Dhaka city. In developed countries, street foods are highly attractive as those are very difficult to prepare at home. Due to fast life, these people prefer eating street food more than home-made food. Moreover, the street foods are hygienic in those places and their physical environment is also favorable. But in Developing countries like Bangladesh, street foods are not preferred by the mass people as those foods are unhygienic and health hazardous. The environment is also not favorable due to very high dust in the air and at the street as well. Although, the people know that the street foods are unhygienic, they prefer eating those foods due to habit and taste.

People of different classes, from different areas, specially the poor & lower class people come in Dhaka city in search of job for better earning. They get engage themselves in different work like day laborer, rickshaw puller, hawker, vendor, etc. These people during the break time or meal time cannot afford to go on a restaurant. So, they have to rely on the street food which is cheap and tasty to them. Besides the students, people from the middle class are also come in the weekend for street food because of the attractive appearance of the food items. The street foods are eaten primarily by the students, youths, and street people to fulfill their hunger at the daytime. When these people are out of their houses, they eat those street foods as they do not have other alternative places to eat. Hence, the demands of street foods are increasing day by day in most populous city Dhaka of Bangladesh. Keeping this in mind, this study investigates the factors that are responsible for preferring street foods by the dwellers of Dhaka city.

Objectives of the Study

The main objective of this study is to investigate the factors that are responsible for the preference of street foods by the dwellers of Dhaka city. The specific objectives are: (i) to investigate the reasons for eating street foods by the people of Dhaka city, (ii) to identify the factors induces the food lovers to eat street foods in Dhaka city, and (iii) to provide some

suggestions to the entrepreneurs of the street foods and the policy makers of Dhaka city in order to bring discipline in this sector.

Literature Review

Street foods are become a common phenomenon in most countries including Bangladesh. Street food vendors contribute in economy through generating self-employment (Mosupye & von Holy, 1999) and jobs for others (Tinker, 1999, 2003). Although the foods are prepared mostly in unhygienic environment, the attraction of street foods is unavoidable to urban people. Street foods contain microbiologically contaminated food that leads to food borne diseases. This food is sold at the busy street side, bus terminal, railway station, hospital, and schools (Mamun, Rahman, Turin, 2013). Because of low price, attractiveness and availability, street foods are popular among young people (Arambulo, Cuellar, Estupinian, & Ruiz, 1995; Taylor et al., 2000).

In a study on consumer's risk/benefit perception and their attitude behavioral intension toward street food, Choi, Joowon et al. (2013), identified that perceived risk negatively influenced customer's attitude toward street food. In addition to the finding, they revealed that perceive benefit positively influenced consumer's attitude, whereas, the risk perception negatively impact behavioral intension. Consumer's attitude towards street foods fully mediates the impact of perceive benefit on behavioral intension whereas, attitude partially mediated the impact of risk perception on behavioral intension.

In South Africa, Kok and Balkaran (2014) studied the hygiene practices of vendors and identified those global practices for street food vendors. Sekar and Thamilselvi (2016) tested the buying behavior and consumer awareness toward street foods. They found that consumers are aware of the quality of the street foods and access to the outlet. In another study Sekar and Thamilselvi (2016) examined the consumer's preference of street foods and underlying factors to prefer SVF outlets. Taste and aroma factors are given most priority in choosing SVF outlets in India. Five factor such as, Economic, personal, lifestyle changes, Social and cultural factors and other factors influenced consumer's buying decision in SVF outlet. Mamun, Rahman, Turin, (2013) examined 110 school-based street food samples to check Microbiological criteria and found 44% of them were unsatisfactory. On the basis of the sample, they found that Sliced Fruit, Jhalmuri, Chotpotis, Vajavuji, Sharbat are not satisfactory. Only Achar and Ice-cream were found satisfactory.

In study on 402 consumers in South Africa, Asiegbu, Lebelo, Tabit (2016) conducted a study to identify the food safety knowledge based on microbial hazard awareness of street food consumers and found that better taste, affordability and accessibility were the three main reasons for choosing ready-to-eat street-vended foods. In Thailand, Khongtong, Karim, Othman, Bolong (2015) examined the consumers' decision making regarding purchasing safe street food and identified consumers' attitude, consumers' motivation, consumers' lifestyle, consumers' resources, consumers' need, consumers' pre-purchase evaluation, consumers' purchasing, consumers' attitude toward food safety certificate as the main factors.

Research Methods

This study aims at identifying he factors affecting the habit of eating street foods of Dhaka city. To conduct the study, both primary and secondary sources of information were used. Primary data were collected from the street food lovers of Dhaka city. This study covered students, youths and street people for collecting information. There were 25 items in the questionnaire as independent variables. One hundred eleven street food lovers were interviewed with the help of a

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structured questionnaire. A structured questionnaire within a 5-point scale was developed for the items affecting the habits of eating street foods. A five-point scale ranging from 1 to 5 with 1 indicating strongly disagree and 5 indicating strongly agree was used in the questionnaire. This study identified items or variables that affect the habits of the street food eaters through literature review. The survey has been conducted among the food lovers with the assistance of students of Bangladesh University of Professionals. The interviewers were trained on the items representing the questionnaire for data collection before resuming the interview. Along with descriptive statistics, inferential statistical techniques such as, Confirmatory Factor Analysis (CFA), Multiple Regression, and Structural Equation Modeling (SEM) were used to analyze the data. Structural Equation Modeling Analysis was conducted to identify the factors concerning the habits of street food lovers of Dhaka city.

Results and Discussions

In this section, results of Confirmatory Factor Analysis, Multiple Regression Analysis and Structural Equation Modeling (SEM) analyses were discussed in detail to identify the significant factors related to the street food eating habits of the people living in Dhaka city.

Results Exploratory Factor Analysis

Factor analysis has been conducted to identify the items consistent with the street food consumption. Factor analysis identifies the underlying items that represent each factor. A principal component analysis with varimax rotation on 25 items was conducted (Table 1).

Table 1: Items Used to Measure Street Food Consumption Habits of the People of Dhaka City

Item	Factors Related to Street Food Eating Habits
Item 1.	Food I eat on the street is easy to consume variety of foods
Item 2.	Food I eat on the street contains no additives
Item 3.	Food I eat on the street tastes good
Item 4.	Food I eat on the street contains natural ingredients
Item 5.	Food I eat on the street is not expensive
Item 6.	Food I eat on the street is familiar to me
Item 7.	Food I eat on the street is nutritious
Item 8.	Food I eat on the street is easily available
Item 9.	Food I eat on the street is good value for money
Item 10.	Food I eat on the street cheers me up
Item 11.	Food I eat on the street smells nice
Item 12.	Food I eat on the street helps me cope with stress
Item 13.	Food I eat on the street has a pleasant texture
Item 14.	Food I eat on the street is packaged in an attractive way
Item 15.	Food I eat on the street is like the food I ate when I was a child
Item 16.	Food I eat on the street keeps me awake and alert
Item 17.	The food I eat on the street as it looks nice
Item 18.	The food I eat on the street as it helps me relax
Item 19.	The food I eat on the street as it takes no time to prepare
Item 20.	The food I eat on the street as it keeps me sound
Item 21.	The food I eat on the street as it makes me feel good
Item 22.	The food I eat on the street as it is what I usually eat
Item 23.	The food I eat on the street as it helps me to cope with life
Item 24.	The food I eat on the street as it can be bought in shops close to where I live or work
Item 25.	The food I eat on the street as it is cheap

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.876
Bartlett's Test of Sphericity	Approx. Chi-Square	4113.991
	df	210
	Sig.	.000

Table 3: Results of Exploratory Factor Analysis of Street Food Consumption Habits of Bangladesh People

Factors	F1	F2	F3	F4	F5	F6
Factor 1: Pleasure and Soundness						
Item 16 Food I eat on the street keeps me awake and alert	.862					
Item 18. The food I eat on the street as it helps me relax	.788					
Item 21. The food I eat on the street as it makes me feel good	.776					
Item 20. The food I eat on the street as it keeps me sound	.756					
Item 12. Food I eat on the street helps me cope with stress	.722					
Factor 2: Convenience and Variety						
Item 8. Food I eat on the street is easily available		.792				
Item 1. Food I eat on the street is easy to consume variety of foods		.782				
Item 19. The food I eat on the street as it takes no time to prepare		.781				
Item 24. The food I eat on the street as it can be bought in shops close to where I live or work		.730				
Factor 3: Attractiveness						
Item 10. Food I eat on the street cheers me up			.858			
Item 11. Food I eat on the street smells nice			.855			
Item 14. Food I eat on the street is packaged in an attractive way			.846			
Factor 4: Cost						
Item 9. Food I eat on the street is good value for money				.889		
Item 25. The food I eat on the street as it is cheap				.889		
Item 5. Food I eat on the street is not expensive				.829		
Factor 5: Food Value						
Item 7 Food I eat on the street is nutritious					.835	
Item 4. Food I eat on the street contains natural ingredients					.833	
Item 2. Food I eat on the street contains no additives					.772	
Factor 6: Taste and Image						
Item 3. Food I eat on the street tastes good						.843
Item 6. Food I eat on the street is familiar to me						.796
Item 17. The food I eat on the street as it looks nice						.755
Eigenvalues	7.240	2.595	1.948	1.615	1.202	1.113
Percentage variance	34.475	12.358	9.278	7.691	5.722	5.299
Cumulative variance	34.475	46.833	56.111	63.802	69.523	74.823

Note: Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization.

With the remaining 21 items, further factor analysis was conducted and found six factor solution with eigenvalue greater than one (Churchill and Iacobucci, 2002). Table 3 shows the percent of variance of each factor. By following the conservative criterion suggested by Kim and

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Muller (1978) and Hair et al. (2006), the factor loading with 0.50 or more is extracted. The total variance percentage represents each factors' position on the whole percentage of all variables. The result of factor analysis reveals that the total variance percentage is 74.82%, which represents all street food consumption items (Hair et al., 2006). The six street food consumption habit factors identified by the analysis are shown in Table 3.

Table 4: Correlation and Discriminant Validity

Factors	Mean	SD	1	2	3	4	5	6
1. Pleasure and Soundness	2.89	.743	(0.782)					
2. Convenience and Variety	2.79	.791	.376**	(0.771)				
3. Cost	2.33	.836	.392**	.374**	(0.869)			
4. Attractiveness	4.01	.647	.308**	.267**	.236**	(0.853)		
5. Food Value	3.50	.819	.476**	.283**	.234**	.465**	(0.814)	
6. Taste and Image	3.99	.555	.338**	.262**	.202**	.524**	.456**	(0.799)

Note: Notes. N = 340. Square root of AVE appears in parentheses on the diagonal.

** $p < .001$.

The correlation matrix and discriminant validity are shown in Table 4.

Results of Confirmatory Factor Analysis

The Exploratory Factor Analysis (EFA) and reliability testing of measurement items are conducted in preliminary stages, where theoretical model is not found. However, EFA does not measure the unidimensionality through mathematical explanation (Segars, 1997; O'Leary-Kelly and Vokurka, 1998; Anderson, 1987; Anderson and Gerbing, 1988; Koufteros, 1999). Therefore, researchers suggest conducting the Confirmatory Factor Analysis (CFA) for measurement model that checks unidimensionality among the constructs.

A series of maximum likelihood confirmatory factor analyses (CFAs) in AMOS-17 was tested finding the discriminant validity of all constructs. The measure of Construct Reliability (CR) and Average Variance Extracted (AVE) is used to identify whether the specified indicators sufficiently represent the dimensions. Construct reliability shows the extent to which a set of two or more indicators are consistent to represent a construct. The high value of construct reliability indicates highly inter-correlated indicators that focus on same construct. As a complementary measure of construct reliability, average variance extracted value is checked such that the high value represents the specified indicators are truly representative the construct (Table 5).

Table 5: Average Variance Extracted (AVE) and Construct Reliability (CR)

Constructs	Average Variance Extracted (AVE)	Cronbach's Alpha	Construct Reliability (CR)
1. Pleasure and Soundness (PP)	0.612	0.884	0.887
2. Convenience and Variety (CO)	0.595	0.816	0.855
3. Cost/Inexpensive (IE)	0.756	0.895	0.903
4. Attractiveness (AT)	0.728	0.905	0.889
5. Food Value (FV)	0.662	0.869	0.855
6. Taste and Image (FI)	0.638	0.821	0.841

In order to test the validity of the construct, such as personal pleasure, convenience, Cost, attraction, food value, and food image, the Confirmatory Factor Analysis (CFA) was conducted.

As shown in Table 4, the Construct Reliability (CR) and Average Variance Extracted (AVE) were as follows: Pleasure and Soundness (CR = 0.887, AVE = 0.612); Convenience and Variety (CR = 0.855, AVE = 0.595); Cost (CR = 0.903, AVE = 0.756); Attractiveness (CR = 0.889, AVE = 0.728); Food Value (CR = 0.855, AVE = 0.662); and Taste and Image (CR = 0.841, AVE = 0.638). All factors satisfy the recommended level of 0.70 for construct reliability (Hair et al.,1998) and 0.50 for average variance extracted (Table 5). Therefore, the results showed that the six constructs confirmed the satisfactory levels of internal consistency and convergent validity.

Results of SEM Analysis

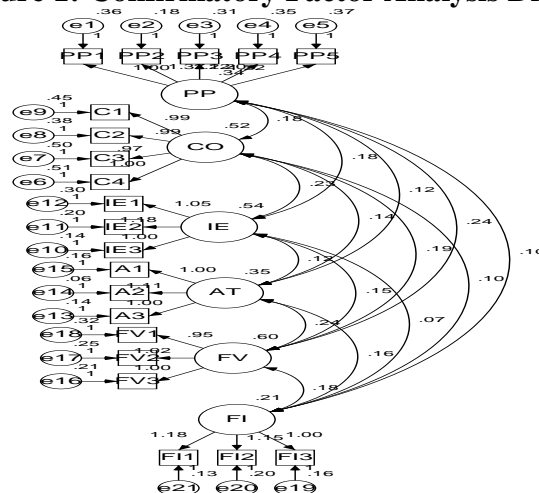
The Structural Equation Modeling (SEM) analysis shows that the Goodness-of-fit index is 0.938 and adjusted goodness-of-fit index is 0.918 indicating a very good model of the paper. (Table 6)

Table 6: Fit Indices for the Measurement Model

Fit Indices	Meaning	Value	Recommended value
χ^2/df	Relative chi-square	239.988/174=1.379	<5.00
GFI	Goodness-of-fit index	0.938	>0.90
AGFI	Adjusted goodness-of-fit index	0.918	>0.80
RMSEA	Root mean square residuals error approximation	0.033	<0.06
CFI	Comparative Fit Index	0.984	>0.90
NFI	Normed/Normal Fit Index	0.943	>0.90
TLI/NNFI	Tucker-Lewis Index, Non-normed Fit Index	0.980	>0.90
IFI	Incremental Fit Index	0.984	>0.90
RMR	Root mean square residuals	0.026	<0.04

The above table indicates that all the fit indices confirm the recommended value. Thus, the six factor model represents good model fit for street food consumption. The following figure shows the measurement model diagram (Figure 1).

Figure 1: Confirmatory Factor Analysis Diagram



Note: PP means Pleasure and Soundness, CO means Convenience and Variety, IE means Cost, AT means Attractiveness, FV means Food Value, and FI means Taste and Image.

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The multiple regression analysis of the data shows that four factors are significant in influencing the overall street food habits such as, Pleasure and Soundness (t -value = 6.985, p = <0.001), Convenience and Variety (t -value = 4.938, p = <0.001), Cost (t -value = 5.357, p = <0.001), Attractiveness (t -value = 2.726, p = <0.001). The factors like Food Value (FV) and Taste and Image (FI) were not found significant factors influencing the food habits. The R Square value was 0.42 which represents that the six-factor model explains 42 percent of the variances.

Table 7: Results of Regression Analysis

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	.862	.141	6.109	.000
Pleasure and Soundness (PP)	.135	.019	6.985	.000
Convenience and Variety (CO)	.125	.025	4.938	.000
Cost/Inexpensive (IE)	.129	.024	5.357	.000
Attractiveness (AT)	.091	.034	2.726	.000
Food Value (FV)	.013	.027	.495	.620
Taste and Image (FI)	.026	.039	.675	.500

Conclusions

This study aimed at identifying the factors affecting the habits of the people eating street foods in Dhaka city. This study identified six factors that influence the habits of the people eating street foods in Dhaka. The factors are pleasure and soundness, convenience and variety, cost, attractiveness, food value, & taste and image of the food. The study show that street food eating habits of the people of Dhaka City is significantly influenced by the pleasure and soundness of the eaters, convenience and variety of foods, price and attractiveness to the foods. However, factors like food value and taste and images are found not significant. The reasons might be attributed by the seriousness of the customers about the food value and the images of the foods. This study suggests that the tastes and variety, accessibility and convenience, price and attractiveness of the street foods should be emphasized by the policymakers of this sector to increase the attraction of the street foods to the people of Dhaka City and making them healthy and hygienic to the consumers. This study only covered few groups of people who are the frequent eaters of the street foods in Dhaka. However, there is an ample scope to come up with more realistic conclusions regarding the street food eating habits of the people of Dhaka city by taking more samples into consideration.

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