

Antecedent Factors Influencing Students Usage of Food Servicescapes in Colleges of Education in Ghana. A Case Study among Female Students of Presbyterian Women's College of Education, Aburi

J. Dzeagu-Kudjodji¹, S. V.K. Adjibolosoo^{2*}, I.P Agbeko³

¹. Home Economic Department, Presbyterian Women's College of Educa, Aburi

^{2,3}Physical and Applied Science Department, Presbyterian Women's College of Education, Aburi.

Abstract: Introduction:Regular usage of food servicescapes (popularly refers to as dining halls in colleges of education) have been found to be crucial to students' health and academic performance as it promotes effective defense against food and water-borne diseases as well as environmental contaminants. Surprisingly, students of College of Education eat food served in the dining hall outside the hall. This behaviour can be detrimental to their health and academic work. **Objective:**The objective of this study is to explore the antecedent factors influencing students to eat the dining hall food outside the servicescapes and discuss potential interventions to address existing barriers to regular usage of the food servicescapes. **Method:**Self-reported data were collected from 257 female students using mixed methods—questionnaires, focus group discussion, interview, and checklist observation. Descriptive statistics, Chi-Square test, students t-test and ANOVA test were applied to the data to ascertain if there are significant differences in reasons why students eat their food outside the servicescapes. **Results:**The results of the study showed that students attitudes, subjective norms, cultural beliefs, poor taste of foods and inadequate foods served in the hall coupled with the absence of handwashing kits constitute the most important reasons why they eat food served in the dining hall outside the hall. Interestingly, Chi-Square test indicated statistically significant association between these reasons cited by students for eating food served in the dining hall outside the hall ($\chi = 54.721$, $df = 14$, $p < 0.05$). A student t-test further revealed statistically significant difference between the mean reasons why students eat food served in the dining hall outside the hall ($t=51.820$, $df=665$, mean difference=8.423, $p < 0.05$). **Conclusion:**Taken together, these results provide important insights into the reasons why students eat food served in the dining hall outside the hall. **Recommendation:**The study recommends that management should ensure that the quality and quantity of food served in the dining hall meet students tastes and preferences. They should also provide handwashing kits in the dining hall for students use to safeguard infection of water and food borne diseases.

Keywords:Colleges of Education; food servicescape; students usage; barriers.

I. INTRODUCTION

Dining halls are important social centers in every institutions of higher learning and are the focus of much of the social life of the students. They serve as important places where students can eat and talk in comfort and share ideas. Studies suggest that the physical setting of the dining halls may influence the individual's ultimate satisfaction with the service (Bitner 1990; Harrell, Hutt, and Anderson 1980). Students satisfaction with food service and servicescapes play an important part in the overall quality of life of a student on a university campus, therefore university food service directors need to be knowledgeable regarding the trends in providing for students' meal experience requirements (Gramling, Byrd, Epps, Keith, Lick, (2005); Klassen, Trybus and Kumar (2005); Kim, Ng and Kim (2009).

Several factors can influence college students' choice of eating in the food dining hall provided in the colleges of education. Those factors considered in this study include preference for food served, choice of food, perceptions of service quality, conditions in servicescape, knowledge of nutrition intervention, meal menu, attitude and choice of servicescapes, subjective norms, cultural beliefs and values, demographic factors, quantity and quality of food served, attitudes of cooks and pantries, and physical size of the food servicescape. These variables were gathered from diverse literature sources and therefore provided theoretical grounding for this study and again serves as a strong base for focused propositions.

Preference and Choice of Food

Individuals have preference for food. It is important to consider the type of food served in the dining hall for consumption because differences in food served in the dining halls can influence students' choice of eating in the hall. A study by Conklin *et al.*, (2005) shows that increased awareness of nutrition positively affects food choice among college students. This suggests that food served in the dining hall at the colleges of education can influence students' choice of either eating in the servicescapes or not.

Generally, students tend to select foods based on taste, convenience, time limitations, health, weight control, and physical environments (Buscher *et al.*, 2001). These factors can all contribute to the students' interests to use the dining hall. Students who are time sensitive for example, will usually select whatever food is fastest for them to eat in the dining hall. These foods tend to be prepared and served, and subsequently high in calories.

Service Quality and Conditions in Servicescape

Interactions between cooks and pantramen attitudes and behaviours can influence students' perceptions of service quality (Singh, 2000). Service employees who are portrayed as attentive, pleasant and responsive to students' needs, would in turn, leads to better students service (Dienhart *et al.*, 1992). Estepa *et al.* (2005) conducted a study in Midwestern University foodservice operation discovered that attributes related to service delivery were ranked the highest expectations by students in the choice of food joints. This suggests that the attitudes and behaviour of cooks and servicescape pantramen could largely influence students' affiliation and commitment to the use of the dining hall.

The overall atmosphere inside the foodservice facility, which is ambience, space, artifacts (items inside the facility), layout, design, cleanliness, lightening, other matron's behaviour, and cooks appearance can influence students preference for eating in the dining hall (Bitner, 1992; Hoffman and Turley, 2002). Bitner (1992) also refers to 'servicescape' as physical factors that can be controlled by the firm to enhance or constrain employee and customer actions. The significance of a comfortable atmosphere is growing with time (Dulen, 1998). Bee Lia *et al.* (2010) further clarified that servicescape can influence customer behaviours of the food service industry and should not be overlooked. This is because customers do evaluate their environment in relation to their satisfaction. A study conducted among students of Texas University revealed that social environment and atmosphere constituted the two attributes they are most satisfied with their campus foodservice venues (Choi *et al.*, 2011).

According to Mutum (2015), servicescape affects both the individual's emotional and behavioural responses in service settings. Booms *et al.*, (1981) further demonstrated that servicescapes impact on the customer's service experience.

Environmental psychologists suggest that individuals react to places with two general, and opposite, forms of behaviour: approach and avoidance (Mehrabian and Russell 1974). Approach behaviours include all positive behaviours that might be directed at a particular place, such as desire to stay, explore, work, and affiliate (Mehrabian and Russell 1974) put in different perspective the behavioural experiences associated with good servicescape include affiliation –willingness to become a regular user of the servicescape and commitment –formation of intention to become brand advocate, to provide positive recommendations about the servicescapes. On the other hand, negative behaviours associated with poor servicescape include avoidance characterize by a desire to ignore the service environment, and feelings disappointment with the service experience. This suggests that the physical environment greatly influences the life style of people and their agency to choose healthy habits.

Knowledge of Nutrition Interventions

Students' food choices can be positively influenced by knowledge of nutrition interventions (Humpel *et al.*, 2002; Kicklighter *et al.* 2011; Freedman and Connors, 2010). Several studies have reported that increased awareness and knowledge of healthful foods among students can lead to improved food choices (Chu *et al.*, 2009). Several studies have also demonstrated that approximately 50% of college students use the information provided in nutrition interventions when making food choices, and the other 50% do not consider the information when making food choices (Marietta *et al.*, 1999). Students who do use nutrition interventions tend to do so for general knowledge, concern about overall health, or concern about a specific nutrient (Davy *et al.*, 2006). According to Estepa *et al.* (2005), university students perception on tangibles and food are directly proportionate to customer satisfaction.

Ruetzler and Meyer (2005) had emphasized that there is an urgent need for continual and integral improvement of campus servicescape operations in order to compete in the fierce foodservice market. All things considered, students' perceptions and expectations of service delivery, servicescape, product, and technology are integral in maintaining the loyalty of these captive customers.

Food Menu

Another factor that could influence students' choice of eating in the dining hall is food menu or meal plan. Food menu or meal plan refers to specific food to be taken as breakfast, lunch and supper within the day and this meal spans weekly, monthly or even yearly. Since students come from varied cultural background can affect their eating habits. In the college students can be dissatisfied with the flexibility of the current meal plan structure and desire greater flexibility in terms of when, where, and how they can use their meal plan swipes. Reducing restrictions around how meal swipes can be used may increase satisfaction in this area.

A study by Driskell *et al.*, (2008), revealed that nutrition interventions can positively influence food choice of college students in a given setting and at a time. If changes are not made to college students' meal plan structures the choice of eating outside the college dining hall will continue to exist and its associated health problems could continue to rise. Developing students' interest through creation of awareness of the importance of meal plan can hasten students' interest and choice of eating in the dining hall.

Attitude

Attitude in contemporary research refers to an internal psychological tendency, which is expressed by the evaluation of some entity with some degree of favour or disfavour (Eagly & Chaiken, 1993; 1998). Attitude does not exist until the individual responds evaluative towards an entity with affect, cognition, or behaviour. Attitude thus develops as a result of evaluative responding (e.g. approval or disapproval, favour or disfavour, liking or disliking, approach or avoidance, attraction or aversion), which produces a psychological tendency to respond with a particular degree of evaluation when encountering the attitude object. The research tradition in environmental psychology strongly suggests that the physical environment can influence behaviours in several ways. Therefore the first step in the purposeful design of the servicescape is to identify the attitudes and behaviours of desirable users and the strategic goals that the organization hopes to advance through its physical facility.

Subjective Norms

Subjective norm refers to the influence important others have on us, such as family, friends, and other people, whose opinion we value as important. Norm also encompasses personal norm which comprises the perceived moral obligation, which represents personal beliefs about what is right and wrong (Schwartz & Tessler, 1972). Ajzen (1991) defined subjective norms as the social pressure to which an individual is subjected to perform, or not to perform, a specific behaviour. The social or subjective norm thus captures the perception of what important others expect the individual to do.

In terms of this study, subjective norms are represented by subjective views of others that have the ability to exert a significant influence on students' decision-making process to eat in the dining hall. Examples of such influencers are: family members, close friends, peers and tutors.

Subjective norms, as an important determinant of behavioural intention, have been well researched in numerous frameworks in psychology and consumer behaviour (Cherian & Jacob, 2012; Chen & Chai, 2010; Savita & Kumar, 2010). In the framework of choice of eating environment, when significant referents think that eating in the dining hall is an appropriate behaviour, the individual's perceived social pressure to eat in dining hall would increase with the individual motivation to conform to this norm. A study by Al-Swidi *et al.* (2014) indicate that subjective norms have a direct and significant impact on an individual's choice intentions. Voon *et al.*, (2011) and Chen (2007) also corroborated these findings, indicating the importance of subjective norms in the framework of the making choice intentions of consumers. Additionally, subjective norms were found to have a moderate relationship in terms of behavioural factors and intentions, as well as a moderate relationship in terms of attitudes and environmental behavioural intentions (Al-Swidi *et al.* 2014).

The moral norm is therefore said to play the role of anticipated feelings in decision-making: that is negative feelings as a result of breaking these personal norms, and positive feelings as a result of behaving in accordance with these personal norms. Personal or moral norms are believed to originate in social norms or group norms, but they have become internalized, and as such influences individual thoughts, feelings, and behavior independently from the social context (Manstead, 2000). Stern *et al.* (1995) emphasized both general values and internalized moral norms in the process of deriving attitudes on specific issues. Based on the above, it was hypothesized that students' choice of eating outside the dining hall is influenced by their subjective norms.

Cultural Belief and Values

Understanding and predicting the influence of culture beliefs system of individual is central to consumer behaviour (Hofstede, 1980; Schiffman & McCarthy & Shrum, 2001). As cultural diversity exists among college students various dimensions were proposed to describe cultural orientations such as people's relationship to food servicescape primary type of activities; and their orientation in time and space (Triandis, 1989).

Values have traditionally been regarded as core aspects of the self-concept (Rokeach, 1968; Sherif & Cantril, 1947), and as such a form of 'basic truths' about the reality. Many researchers have recognized the importance of understanding the relations that exist between evaluation of the more abstract and the more concrete (Eagly & Chaiken, 1993). In this context, people's cultural values help to form environmental beliefs/values predict preferences for environmentally friendly behaviour. Therefore, it is important to understand culturally determined values related to the food servicescape, which in the colleges refers to as dining hall.

Demographic Factors

Demographic factors have been vital in understanding behaviour when it comes to personal preference and choice. Three demographic factors that have been identified in literature as key factors affecting behaviour include sex, age, religion, and levels of education.

Age is a demographic factor that has been studied extensively in individual behaviour towards environmental actions (Fisher, Bashyal & Bachman, 2012; Meyer & Liebe, 2010). These studies reported that individual age has a high level of importance, and is a determinant of environmental behaviours. This finding is an indication that age has been a topic of much speculation in the analysis of the environmental behaviours of people. Literature indicates that older individuals are more likely to be accepting of and adapting to choosing a product, and the experiencing of services that are rewarding (Zhao, GAO, Wua, Wanga & Zhua, 2013).

The impact of gender on behaviour is extensively recognised in psychology and consumer-behavioural studies. The predominant focus in these studies is to understand gender differences in intention, perception and behaviour (Zhao *et al.* 2013; Anderson & Hansen 2004). Reports from these studies indicate that females are more likely to be aware of the environmental impact of their purchase choices than their male counterparts. In support of this finding, Zhao *et al.* (2013) also found out that gender played a significant role in predetermining environmental behaviour towards choice of products, primarily exhibiting a stronger positive attitude towards eco-friendly behaviour for females, than for males. Zhao *et al.* (2013) assert that male and female attitudes have been found to significantly differ due to prominent gender-role differences—females seem to show a greater environmental concern than males do. Based on the above, it was hypothesized that students' choice of eating outside the dining hall is influenced by demographic factors.

The literature available on the level of education in relation to environmental concern is seemingly limited. Previous studies, however, found that there is a positive relationship between education and the knowledge of environmentally friendly activities and products (Do Paco *et al.* 2009; Roberts, 1996). Results of these previous studies showed that individuals with a higher level of education are more likely to display environmentally friendly behaviours. However, Laroche *et al.* (2001) in a study found that there was no significant difference between people with different levels of education. Based on the above, it was hypothesized that the choice of eating outside the dining hall is influenced by one's level of education.

Perception of Conditions of Environment

The physical environment greatly influences the life style of people and their agency to choose healthy habits. The ecological model proposed by Sallis *et al.*, (2006) showed that the practice of physical activity and the adoption of healthy diets are complex behaviours and that behaviour change also depends on the characteristics of the environment. The model proposes levels of influence and interaction between respective aspects, perceptions of the environment and broader aspects such as neighborhood facilities and public policies.

Two studies reviewed found an association between various environmental factors and different types of physical activity (Humpel *et al.*, (2002). The positive association of access to adequate facilities and practice of leisure physical activity was also confirmed by studies that objectively analyzed the environment (McCormack *et al.*, 2007). This suggests that unpleasant environments that are also high in arousal (lots of stimulation, noise, confusion) are particularly avoided. For example, Hui and Bateson (1991) found that in the context of environmental crowding, increased perceptions of personal control are related positively to increased pleasure. Based on the above, this study hypothesized that students' choice of eating food served in the dining hall outside the hall is influenced by perception of conditions of environment.

The perceived servicescape may also affect people in purely physiological ways. Noise that is too loud may cause physical discomfort, the temperature of a room may cause people to shiver or perspire, the air quality may make it difficult to breathe, and the glare of lighting may decrease ability to see and cause physical pain. All of these physical responses may in turn directly influence whether or not people stay in and enjoy a particular environment. For example, it is well known that the relative comfort of seating in a particular environment influences how long people stay. When they become uncomfortable sitting on a hard surface in food servicescape, most people leave within a predictable period of time (Riley and Cochran 1984).

Physical Size of the Food Servicescape

The sizes of the physical surroundings of the food servicescape include all of the physical factors that can be controlled by the servicescape authorities to enhance or constrain consumers' actions. Those factors revealed by extensive literature reviewed include an endless list of possibilities, such as lighting, colour, quality of materials, style of furnishings, layout, wall decor, temperature, and so on. These factors can influence consumer behaviour regarding the use of the servicescape.

According to Holahan (1982), environmental psychologists contends that people respond to their environments holistically. That is, though individuals perceive discrete stimuli, it is the total configuration of stimuli that determines their responses to the environment. In this perspective, though the physical size of the servicescape are defined independently here, it is important to recognize that they are perceived by people as a holistic pattern of interdependent stimuli. Studies show that human behaviour is influenced by the physical setting in which it occurs (Darley & Gilbert 1985; 1986; Russell & Ward 1982; Stokols and Altman 1987).

II. METHODOLOGY

The study was a college based survey which sought to explore the antecedent factors influencing students' use of the college food servicescape. Food servicescape as used in this study refers to students dining hall and the food served in the hall for students. The research design used was both qualitative and quantitative methods. The quantitative design was employed because it offers rich descriptive reports of participants' perceptions, attitudes, beliefs, views and feelings as well as the meanings and interpretations of the issue under investigation (Creswell, 2012). Qualitative study design allows the participant to express their thoughts more accurately, because the researcher does not have to adhere to a concrete study design. In addition, it also produces detailed description of participants' feelings, opinions, and experiences; and interprets the meanings of their actions (Denzin, 1989; Richardson, 2012).

Conducting quantitative and qualitative study could potentially provide information for determining what intervention components college authorities found most helpful to employ to encourage students to use the college food servicescape. New interventions strategies could also be discovered that will be specifically tailored to college students' motivation towards the use of college servicescape. Therefore, the current study was conducted using qualitative and quantitative research design. Using the mixed method could potentially provide adequate information for determining the antecedent factors influencing students' use and barrier to the use of the college food servicescape.

Self-reported data on preference for food served, choice of food, perceptions of service quality, conditions in servicescape, knowledge of nutrition intervention, meal plan or menu, attitude towards choice of servicescapes, subjective norms, cultural beliefs and values, demographic factors, quantity and quality of food served, attitudes of cooks and pantremen and physical environments were collected from 257 randomly selected female students aged between 18—35 years (mean age=2.6265; SD = 0.54536; and range= 3.0; variance = 0.297). The sample size was calculated from the population frame of 563 female students—total enrolment of the college. Structured questionnaire (SQ), focus group discussions (FGD), interview (I) and checklist observation (CO) were employed to collect the data.

The items on the SQ were adapted from semantic 5-point Likert-type response format developed by Taylor & Todd, 1995; Ajzen and Fishbein, 1980. These included (5 = strongly agree; 4 = agree; 3 = don't know; 2 = disagree; and 1 = strongly disagree).

Twenty measures on the SQ were used to capture the various latent constructs. Also, twenty-four measures on the FGD guide were used to capture latent constructs. Latent constructs on the interview guide were captured using six measures. Finally, nineteen measures on the CO guide were employed to capture latent constructs. We then included the items in a questionnaire in no defined order. Construct analysis of the results guided final revisions of constructs on the instruments.

In addition, respondents were asked to respond to some descriptive questions including sex, age, religion and education level. The instruments were validated after initial development through extensive literature review and discussions with behavioural experts and colleague tutors. Several redundant items were eliminated through interviews with 15 students and 8 colleagues' tutors, and the first draft of the instruments were pilot-tested across all the measures. The research team finally applied item judgment to maximize the questionnaire validation—clarity, readability and content validity of items.

The SQ was then administered to the 257 randomly selected respondents by the research team within the period of four weeks spanning from 1st—30th June 2019. The FGD, and the checklist observation instruments were also administered within the same period.

Ten FGD were held with 76 respondents randomly selected from students who reported to have eaten their food served in the dining hall both inside and outside the hall. On average, each FGD comprised 5-10 female students and data was collected to the point of saturation. English was the main language used during the FGD as all of the students spoke English as a second language. The FGD sections were audiotaped using digital audio-recorders with participants consent. On average, each FGD session lasted between 40-50 minutes.

The interview was conducted with 40 female college students to explore their opinions and views on factors that influence them to eat inside or outside the college food servicescape. Each interview session lasted between 15-20 minutes and was audiotaped. The study participants were encouraged to provide detailed answers to the research questions. This design allows the researchers to create a rich, thick description of the data, and this consequently enhances better understanding of the main research question.

Ethical issues such as consent for photographing, audio recording of participants' voices and opportunity to opt out of the survey, were strictly adhered to throughout the data collection periods.

Data Analysis

Quantitative data collected using the Likert scale type questionnaire were collated, cross-checked against the items on the instruments used, coded and entered into SPSS and analyzed using SPSS Version 21. Descriptive statistics, Chi-square test, student t-test, and One Way Anova test were used to analyse the quantitative data.

Descriptive statistics was used to determine both the percentage distributions of variables in the sample and the mean, standard deviation of variables in the sample. Participants mean age, standard deviation and the range were also determined using the same descriptive statistics. Chi-Square test was conducted to determine the association between reasons why students eat foods served in the dining hall outside the hall. Further, student's sample t-test was used to ascertain if there are statistically significant differences in reasons why students eat their food outside the servicescape by both age and level of education. The influence of students' attitudes and subjective norms on choice of eating food served in the dining hall outside the hall and knowledge and perceptions of students of the implications of eating food served in the dining hall outside the hall were equally determined by submitting the data to ANOVA Test. The analysis was conducted at 0.05 significance level (95% CI). The results of the quantitative data analyses were presented using appropriate tables and figures to ensure easy interpretation by audience.

The qualitative data obtained from interview and FGDs were analysed using thematic content analysis procedures. The data were first transcribed verbatim into Microsoft Word and then analyzed against thematic content ordering and interpretation to identify antecedent factors that could positively or negatively influence students' behaviours of interest. Relevant illustrative quotes that reflected group opinions and views were identified and used to support the detailed descriptive analyses of the final themes. The checklist observation results were also reported according to pre-determined themes included on the checklist observation guide.

Test items reliability and internal consistency were determined using Cronbach's alpha statistics (Cronbach, & Richard, 2004).

III. RESULTS

The objective of the study was to explore the antecedent factors influencing students' usage of college food servicescape and discuss potential interventions to address existing barriers to regular usage of the food servicescape. This section describes all the test results of the analyses including participants' demographics, basic descriptive results, reliability of all measurement items, and the validity of the measurement structure, and structural relations between the dependent and independent variables. The calculated values of Cronbach's alpha for test reliability and internal consistencies were greater than 0.8 indicating that items on the instruments have sufficient internal consistency (Pallant, 2011; Cronbach & Richard, 2004). Hence the alpha value (0.85) obtained in this study for all the 20 items used was good. The results of the analyses are presented below using appropriate tables and figures.



Table 1: Results of Chi-Square Test of Association

Constructs/Variables	Mean	SD	χ	df	p-value	Association Decision
Participants Demographic Profile						
Age	2.6265	.54536	243.467	3	< 0.5	Supported
Religion	1.0233	.17522	484.490	2	< 0.5	Supported
Education	1.5720	.84530	130.887	2	< 0.5	Supported
Choice of eating place.	1.2724	.44605	53.265	1	< 0.5	Supported
Participants Knowledge and Perception						
Eating food served in the dining hall outside is harmful.	2.8016	1.35335	46.482	4	< 0.5	Supported
Eating outside the dining hall is bad practice.	3.0973	1.36440	56.210	4	< 0.5	Supported
Eating in the dining hall causes one to be infected with diseases of others?	2.6965	1.37830	31.852	4	< 0.5	Supported
Participants Attitudes						
I feel comfortable eating outside the dining hall.	3.6031	1.28013	21.4712	5	< 0.5	Supported
Feeling comfortable by eating outside the dining hall is desirable.	3.5370	3.63463	214.712	5	< 0.5	Supported
I enjoy adequate privacy by eating food served in the dining outside.	3.5214	1.31121	152.280	4	< 0.5	Supported
Enjoying adequate privacy by eating food served in the dining hall outside is desirable.	3.3580	1.22644	100.451	4	< 0.5	Supported
I enjoy adequate ventilation if I eat outside the dining hall.	3.6187	1.19346	152.280		< 0.5	Supported
Reasons for eating food served in the dining hall outside.	8.4234	4.19498	54.721	14	< 0.5	Supported
Participants Subjective Norms						
I eat outside the dining hall because people whose opinion I take also do it.	2.4319	1.42940	146.494	5	< 0.5	Supported
People I am important to think that I should eat outside the dining hall.	2.6576	2.42212	181.167	6	< 0.5	Supported
People who are important to me think that I should eat outside the dining hall.	2.4708	1.19901	67.416	4	< 0.5	Supported
Participants Cultural Beliefs						
Shared dining hall is associated with evil spirits and therefore should be avoided.	2.7276	1.32720	20.062	4	< 0.5	Supported
Eating with others in the same hall is a taboo?	2.0700	1.16716	139.518	4	< 0.5	Supported
Eating in public causes one to be possessed by evil spirits.	2.0700	1.16716	39.089	4	< 0.5	Supported
Girls who are in their menstrual periods are not supposed to eat with others.	2.0156	1.22145	145.749	4	< 0.5	Supported

Mean Difference and χ Test are Significant at 0.05 (95% CI).

Table 2: One-Sample Test for Reasons of Students Eating Food Served in the Dining Hall Outside the Hall

	Test Value = 257					
	t	df	p-value	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
REASON	51.820	665	.000	8.42342	8.1042	8.7426

Mean difference significant at 0.05(95% CI).

Table 3: Descriptive Statistics and Inter-construct of influence of Students' Attitudes on Eating Food Served in the Dining Hall Outside the Hall

Descriptive Statistics (N=257)		Variables	Test Value = 257					
Meam	Std Deviation		t	df	p-values	Mean Difference	95% Confidence Interval of the Difference	
							Lower	Upper
3.6031	1.28013	I feel comfortable eating outside the dining hall.	45.122	256	**	3.60311	3.4459	3.7604
3.5370	3.63563	Eating outside dining hall Is desirable.	15.600	256	**	3.53696	3.0905	3.9834
3.3580	1.22644	Enjoying adequate privacy by eating outside the dining hall is desirable.	43.893	256	**	3.35798	3.2073	3.5086

*Mean difference is significant at 0.05 (95% CI).

Table 4: Descriptive Statistics and Inter-construct of Influence of Students' Subjective Norm on Eating Food Served in the Dining Hall Outside the Hall

Descriptive Statistics (N=257)		Variables	Test Statistics					
Meam	24.319		t	df	p-value	Mean Difference	95% Confidence Interval of the Difference	
Std Deviation	14.2940						Lower	Upper
		I eat outside dining hall because people Whose opinion I take also do it.	27.275	256	< 0.05	2.43191	2.2563	2.6075
		People I'm important to think that I should eat outside dining hall.	17.590	256	<0.05	2.65759	2.3601	2.9551

Mean difference is significant at 0.05 (95% CI).

Table 5: Descriptive Statistics and Inter-construct of Knowledge and Perception of Students on Implications of Eating Food Outside the Hall

Descriptive Statistics (N=257)		Variables	Test Statistics					
Meam	Std Deviation		t	df	p-value	Mean Difference	95% Confidence Interval of the Difference	
							Lower	Upper
2.8016	13.5335	Eating outside dining hall Is harmful.	33.186	256	< 0.05	2.80156	2.6353	2.9678
3.0973	1.36440	Eating outside dining hall Is bad practice	36.392	256	<0.05	3.09728	2.9297	3.2649
2.6965	1.37830	Eating outside dining hall may cause one to get disease.	31.363	256	< 0.05	2.69650	2.5272	2.8658
3.5370	3.63463	Eating outside dining hall is desirable.	15.600	256	<0.05	3.53696	3.0905	3.9834

Mean difference is significant at 0.05 (95% CI).

Table 6: ANOVA Statistics of Knowledge and Perception of Students on Implications of Eating Outside the Dining Hall

	Sum of Squares	df	Mean Square	F	p-value
Between People	1592.472	256	6.221	203.803	.000
Between Items	11053.742	19	5.818		
Within People	13884.758	4864	2.855		
Residual	24938.500	4883	5.107		
Total	26530.972	5139	5.163		

Grand Mean = 2.9023 Mean square significant at 0.05 (95% confidence level).*

Table 7: Descriptive and Inter—construct of Cultural Factors that Influence Eating Outside the the Dining Hall

Descriptive Statistics (N=257)		Variables	Test Statistics					
Meam	Std Deviation		t	df	p-value	Mean Difference	95% Confidence Interval of the Difference	
							Lower	Upper
2..7276	1.32720	Shared dining hall is associated with evil spirits and should be avoided.	32.947	256	< 0.05	2.72763	2.5646	2.8907
2..0700	1.16716	Eating with others in the same hall is a taboo.	28.432	256	< 0.05	2.07004	1.9267	2.2134
2.4981	1.35244	Eating in public causes one to posses evil spirits.	29.611	256	< 0.05	2.49805	2.3319	2.6642
2.0156	1.22145	Girls who are in their menstrual period are not supposed to eat with others	26.454	256	< 0.05	2.01556	1.8655	2.1656

**Mean difference is significant at 0.05 (95% CI).*

The data presented in Table 1 above showed positive association between dependent and independent variables. There is also statistically significant difference between the reasons why students eat their food served in the dining hall outside the hall by age and level of education (Table 1). Table 2: one-sample test for reasons of students eating food served in the dining hall outside the hall.

The variables including poor tastes of food, absence of handwashing kits, and inadequate food served in the dining hall, following that order of importance, were the most important determinants of students choice of eating food served in the dining hall outside the hall. Other contributing variables to choice of eating foods served in the dining hall outside the hall included students attitudes, subjective norms, cultural beliefs system. Among the cultural factors, shared dining hall, which students considered to be associated with evil spirits, was the most significant factor influencing students choice of eating outside the dining hall (t-statistics = 32.947, df= 256, p < 0.05; mean = 2.7276, SD = 1.32720). Table 7.

Descriptive statistics and inter-construct of knowledge and perception of students on implications of eating food outside the hall showed statistically significant difference between the students responses to the three variables included on measurement scale of students knowledge and perception (Eating outside dining hall is harmful (mean = 2.8016, SD = 1.5335; t-statistics = 33.186, df = 256, p < 0.05); Eating outside dining hall is bad practice (mean = 3.0973, SD = 1.36440; t-statistics = 36.392, df = 256, p < 0.05); Eating outside dining hall may cause one to get disease (mean = 2.6965, SD = 1.37830; t-statistics = 31.363, df = 256, F = 203.803; p < 0.05). These results suggest that students have adequate knowledge about the social and health implications of eating food outside the dining hall, yet they continue to eat food served in the dining hall outside the hall. Analysis of variance also showed statistically significant difference between the mean of knowledge and perception of students and implications of eating dining hall food outside the hall (mean square = 5.818, df = 19, p < 0.05). (Table 6). Comparing the students reasons for eating outside the dining hall by age produced negative statistically significant difference (t-statistics = -21.569, df = 256, p < 0.05), suggesting that no positive relationship exists between students reasons for eating food served in the dining outside and age.

Results of Focus Group Discussions (FGDs)

Ten FGDs covering 76 participants were conducted. During the each session, participants were asked to describe the conditions in the dining hall and discuss the advantages and disadvantages of eating in the dining hall. They were further asked to state their positive as well as negative feelings towards the general conditions of the dining hall. From the FGDs three major themes identified by the students relate to: (i) personal convenience and (ii) personal health (iii) food menu or meal plans. Although the focus groups identified a wide-ranging list of factors influencing their choice of eating their food outside the dining hall, for focus' sake, authors limit their discussion to the top 15 major themes that were cited by at least two-third of discussants.

Theme 1: Personal Convenience

Group narratives that related to personal inconvenience

"We suffer serious congestions in the dining hall as ten students sit on very small bench and a table. No space to eat freely" as hand movements becomes very difficult".

"There are too many flies in the dining hall and this creates a lot of nuisance to us during eating."

"A lot of time is wasted in the dining hall in making announcements" and this makes us late for the next lesson".

"Sometimes, one has to send her food out in order to avoid being late for the next lesson".

"A portion of the dining hall produces very bad smell as waste from the kitchen and the dining hall are kept there".

Lack of adequate storage capacity for the composted waste.

Theme 2: Personal Health

Group narratives that relate to personal health included the following:

"We don't have handwashing kit in the dining hall; in most cases we have to wash our hands before coming to the hall".

"The ladles we use for serving food are placed on the dining hall tables unprotected from flies and this can transmit cholera to us."

"In most cases, we provide our own logistics for cleaning the dining hall during week days".

Theme 3: Food Menu or Meal Plan

Students were also dissatisfied with the quality and quantity of food served in the dining hall. A key justification raised by discussants in support of this thinking was:

"The quality and quantity of food served is 'bad' and small respectively".

"The menu is also monotonous as throughout a semester, we eat the same food and at the same time".

We need to supplement the quantity of food served with provisions from the dormitory or canteen and also enrich the quality (taste) in the same way".

"The only common food serve for those of us place on special diet is rice; this is too monotonous."

"If they can increase the food we like and decrease those we don't like, we will like it".

Results of Interview Conducted

Respondents were asked to indicate their positive as well as negative feelings towards eating food served in the dining hall outside the dining hall. From the interview, two major themes identified related to: (i) personal convenience and (ii) personal health.

Theme 1: Personal Convenience

Narratives that relate to personal convenience:

Privacy in the dining hall was seriously identified by students as a key issue influencing them to eat their food outside the hall. Students concern and dissatisfaction with the privacy status of the college dining hall that supported their views were expressed in the following quotes:

"The ten students sitting on a small bench make it difficult for to feel comfortable during dining time".

"We cannot move our hands freely, let alone use the cutlery sets".

"I don't feel like eating in the hall when your colleagues were looking either into food or face as you eat."

"Sometimes, I don't go to the dining hall because the scent of the waste stays in my dress" when I go. I had to send my friends to collect my food for me."

Theme 2: Personal Health

Narratives that relate to personal health:

Personal health in the dining hall was also seriously identified by students as a key issue influencing them to eat their food outside the hall. The grave manner in which students were dissatisfaction with the health status of the college dining hall were expressed in the following quotes:

"I don't feel like eating in the dining hall because kitchen waste were kept in the corner where I sit". The waste kept at the corner smells a lot and you have to cover your nose with handkerchiefs in the hall".

"We need detergents for cleaning the dining". During week days, we use ording water to clean the dining hall."

"In most cases, we wash our hands before coming to the dining hall which is not good".

"We need handwashing kits or basin in the dining hall so that we can wash our hands before and after eating".

"..eating outside the dining hall can bring about diseases to us".

Results of Checklist Observation

The results of the checklist observation revealed the following which are related to personal convenience and health.

Theme 1: Personal Convenience

- Congestion of students on a table resulting from the small size of the bench and the table.
- Too many flies in the dining hall, especially during the time students were served with kenkey.
- Quantity of food served for students was insufficient.
- Quality and tastes of some of the menu (food) served do not meet students preference.
- The dustbin kept close to the entrance of both the kitchen and the dining hall attracts flies into the hall.
- Waste food from the kitchen are kept in dustbins placed in one corners of the dining hall which emanet unpleasant odour in the hall.
- There was no handwashing kits in the dining hall causing students to wash their hands before visiting the dining hall.
- Tutors do not supervise students activities such as cleaning of the hall.

Discussion

The objective of the study was to explore the antecedent factors influencing students' usage of college food servicescape and discuss potential interventions to address existing barriers to regular usage of the food servicescape. Findings from this study provide measures and interpretations for the contribution of several variables in predicting why students eat food served in the dining hall outside the hall.

The results of the study showed that the most important reasons why students eat food served in the dining hall outside the hall were poor quality and tastes of food and inadequate food served in the dining hall coupled with absence of handwashing kits in the hall (Table 1). Besides these, other contributing factors to students choice of eating food served in the dining hall outside are students attitudes and cultural beliefs and value system.

Food Quality and Food Taste

The type, quantity and quality of food served in the dining hall for consumption can influence students' choice of eating in the hall. A study by Conklin et al., (2005) showed that increased awareness of nutrition positively affects food choice among college students. This suggests that food served for students in the dining hall can influence students' choice of eating in the hall or the servicescapes where foods are served. College authorities and their professionals face challenge when it comes to serving students a variety of foods that look appealing, taste good, and are served in a pleasant environment. These challenges are ever changing as students grow because their wants, needs, and tastes change. Foodservice administrators can easily impact the menu to meet the need of providing variety to satisfy students. Other key area that administrators should be concerned with are taste and smell of food, brands offered, friendliness of staff, and time given to eat once students have been served their food. Monitoring these areas continuously, recognizing changes in student perception, and

adapting their programs are other areas of concern. Increasing satisfaction and encouraging students' participation in the school foodservice program are strategies in meeting students demands and preference (Meyer, 2005). This suggests that college administrators must adapt their program to meet students ever changing tastes and preferences. A research carried out in a university by Shanka and Taylor (2005) clarified that students' satisfaction on the university foodservice is indeed inherent in the food quality sold in its cafeterias.

Administrators are therefore challenged to provide appealing meals (adequate, good quality and good taste) to students while staying within budget constraints and adhering to quality standards and college meal regulations.

Another grave concern students raised during the FGDs was that they were dissatisfied with the meal plan structure in the college. For example, one group narrative complained: "*The menu is monotonous as throughout a semester, we eat the same food and at the same time*". This suggests that students are dissatisfied with the current meal plan structure and desire greater flexibility in terms of when, where, and how they can use their meal plan swipes. Involving students Students Representative Council (SRC) in the planning of the meal plan or menu is crucial in ensuring that students are satisfied with the meal served for them in the dining hall. The results of the present study is in congruent with one earlier research conducted by Meyer (2005) to determine the perception of meals for college students. The results of the research indicates that students were moderately satisfied with their college meal plan and nutrition programs overall, and with the factors of food quality. From the study, students who are offered the opportunity to contribute to the choice of meals plan were more satisfied with college meals than those who didn't have a choice. In addition, students were more satisfied with the service factor than with any other. Students who were given the opportunity to contribute to meal plan ranked food quality and service higher than students who were not offered the opportunity to make a choice for the meal plan.

Absence of Handwashing Kits

Generally, food borne illnesses can be prevented by washing the hands with clean running water and soap before touching food. Unwashed hands are considered the most significant pathway to pathogen transfer and food safety. However, the results of both FGDs and checklist observation revealed that the entire dining hall has no handwashing kits for students to wash their hands before and after eating. This could be very dangerous to students health and classroom attendance. A number of infectious diseases including gastrointestinal infections, typhoids, cholera, and respiratory infections, such as influenza can be spread from one person to another by contaminated hands. Proper handwashing can help prevent the spread of the germs such as bacteria and viruses that cause these diseases. Some forms of gastrointestinal and respiratory infections can cause serious complications, especially for those with a weakened immune system. Studies show that handwashing can prevent about 30% of diarrhea-related sicknesses and about 20% of respiratory infections (Ejemotet. al., 2008; Aiello et. al., (2008).

From the FGDs, the discussants also reported that a section of the dining hall produces very bad smell resulting from kitchen wastes, thus, making eating in the hall uncomfortable. This is an indication of lack of adequate facilities for storage of kitchen wastes. Odor, which refers to unpleasant smells, is considered as an important environmental pollution which has negative consequences on human health. Improving sanitation in both the dining hall and the kitchen has the potential of not only encouraging students to eat food in the dining hall but it can also promote good health and school attendance among the students.

Attitudinal Influence

Attitude refers to the evaluation of some entity with some degree of favour or disfavour (Eagly & Chaiken, 1993; 1998). Attitude does not exist until the individual responds evaluative towards an entity with affect, cognition, or behaviour. Attitude thus develops as a result of evaluative responding (e.g. approval or disapproval, favour or disfavour, liking or disliking, approach or avoidance, attraction or aversion), which produces a psychological tendency to respond with a particular degree of evaluation when encountering the attitude object.

The results presented in Table 1 above indicate that participants attitudes has significant association on their choice of eating outside the dining hall. A study by Petty & Krosnick (1995) showed that individuals with high attitude towards specific behavioural intention are generally susceptible and self-conscious to perform the behaviour. Put in another perspective, if the perceived advantages of performing the behaviour outweigh its perceived disadvantages, individuals are likely to form a favourable attitude toward the behaviour. This assertion was further supported by Cheng *et al.* (2005:481) and Lee (2005:189) who maintain that if an individual has a positive attitude towards a particular behaviour, his/her intention to behave in this way would become more likely. Conversely, if, on balance, the perceived disadvantages outweigh the perceived advantages, a negative attitude is likely to be formed which may cause the individual to reframe from an intended behaviour.

Changing students attitudes of eating food served in the dining hall outside require addressing their attitudes since their attitude was found to be contributing significantly to their choice of eating their food outside the dining hall. To do this there is the need to address the cognitive and emotional components of the students by providing them with information on the risks associated with eating outside the dining hall. Also, to be able to influence students attitudes, there is a need for strategies that are directed to more personal and interpersonal formative experiences. This can help appeal to the emotion and cognitive process of the students towards reorganization of their thoughts and consequent attitudinal change. Nevertheless, it is worth nothing that changing attitude takes time because strong attitudes involve issues of personal relevance and values and are held with great conviction (Petty 178 & Krosnick, 1995; Raden, 1985). As a result, they are assumed to be persistent over time and be resistant to attack, to influence perceptions and judgments, and to guide overt behaviour (Krosnick & Petty, 1995).

Subjective Norm Influence

Subjective norms, as an important determinant of behavioural intention, have been well researched in numerous frameworks in psychology and consumer behaviour (Cherian & Jacob, 2012; Chen & Chai, 2010; Savita & Kumar, 2010; Voon *et al.* 2011& Chen, 2007). Ajzen (1991) defined subjective norms as the social pressure to which an individual is subjected to perform, or not to perform a specific behaviour. The subjective norm thus captures the perception of what important others expect the individual to do. In terms of this study, subjective norms are represented by subjective views of others that have the ability to exert a significant influence on students decision-making process to eat in the dining hall. The result presented in Table 1 above indicates that participants subjective norms have significant influence on their choice of eating food outside the dining hall. A study by Al-Swidi *et al.* (2014) indicates that subjective norms have a direct and significant impact on an individual's choice intentions. Voon *et al.*, (2011) and Chen (2007) also corroborated these findings, indicating the importance of subjective norms in the framework of the making choice intentions of consumers. Additionally, subjective norms were found to have a moderate relationship in terms of behavioural factors and intentions, as well as a moderate relationship in terms of attitudes and environmental behavioural intentions (Al-Swidi *et al.* 2014).

In line with previous research (Cherian & Jacob, 2012; Chen & Chai, 2010), the results suggest that students who are influenced by subjective norms, are more prone to eating food served in the dining hall outside. Additionally, if students are positively influenced by subjective norms, then the likelihood that they would have positive attitudes towards eating their food outside the dining hall would be high. The results also support the relationship between subjective norms and pro-environmental behaviour. When significant referents think that eating in outside the dining hall is good or appropriate behaviour, then students would be more likely to become aware of the social pressure to do so. This would lead to an increase in the students motivation to conform.

Students Cultural Beliefs and Value System

The cultural variables considered in this study were taboos, superstitions, traditional norms and traditional values. Understanding and predicting the influence of culture beliefs is central to consumer behaviour (Hofstede, 1980; Schiffman & McCarthy & Shrum, 2001). As cultural diversity exists among college students various dimensions were proposed to describe cultural orientations such as students relationship to food servicescape primary type of activities; and their orientation in time and space (Triandis, 1989). Data presented in Table 1 above showed that participants cultural belief systems have significant influence on their choice of eating food outside the dining hall. Many researchers have recognized the importance of understanding the relations that exist between evaluation of the more abstract and the more concrete (Eagly & Chaiken, 1993). In this context, people's cultural values help to form environmental beliefs or values and values predict preferences for environmentally friendly behaviour. Therefore, it is important to understand culturally determined values related to the food servicescape. Again, college administrators and food professionals face another challenge in meeting meal preferences of their students who come to the college with varied cultural diversities and backgrounds.

IV. CONCLUSION

The objective of this study was to explore the antecedent factors influencing students' usage of college food servicescapes or dining hall and discuss potential interventions to address existing barriers to regular usage of the food servicescapes. The results of the study highlight the prominence of poor quality and inadequate foods served in the dining hall, absence of handwashing kits, students attitudes and subjective norms, coupled with their cultural belief system in the prediction of reasons why female students in the colleges of education eat food served in the dining hall outside the hall. Hence taken together, these results provide important insights into the reasons why female students in the colleges of education eat food served in the dining hall outside the hall. The study also contributes to the theoretical advancement by exploring and expanding the characteristics of colleges of education campus food service that influences students choice behaviours.

The study therefore recommendeds that college food management committee together with college principals should ensure that the quality and quantity of food served in the dining hall meet students tastes and preferences. They should also provide handwashing kits in the dining hall for students use to encourage them to eat in the dining hall or food servicescapes.

Nevertheless, this study has some limitations. The responses were collected from female students from only one college of education, so, caution is essential in generalizing the findings to cover all the accredited public colleges of education in Ghana. It is recommended that future studies should be expanded throughout the other colleges of education in the country, inclusive of private colleges, to improve the generalizability of the findings.

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Competing Interests

The authors declare that no conflict of competing interests exists.

Consent For Publication

All the authors have given their full consent for the publication of the article.

Data Abstraction

The first author transcribed the interviews, incorporated field notes and translated the section of the interview conducted in Twi to English. The second author checked all transcriptions against original voice record. Discrepancies were discussed, and a final decision was made after mutual agreement. Corrections were made after all the participants critically examined transcripts of translated voice audio for precision and accuracy of words, ideas and jargons. For proof of authenticity, all the participants endorsed signatures on the original manuscripts. Data are coded by the first author, and analyzed by the second author and are cross-checked and clarified for data analysis and representation by the third author.

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