



RESEARCH ARTICLE

IMPACT OF NUTRITIONAL KNOWLEDGE ON FOOD CONSUMPTION BEHAVIOUR AMONG  
TERTIARY STUDENTS IN KENYA

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ABSTRACT

This paper focuses on nutrition knowledge and its impact on consumer behaviour of tertiary students living and studying in Nairobi, Kenya. This survey was carried out in Nairobi, Kenya to find out the impact of nutrition knowledge on the consumption behaviour of tertiary students living and studying there. Consumer behaviour, with regard to nutrition knowledge, has been made a bit easier by people targeting seasonal foods while they are still cheap and easily available. The data collection tool was a self-administered questionnaire. The study involved 395 participants. The data was analysed using SPSS for descriptive statistics, including frequencies, cross-tabulations and correlations. The results showed that the students had some basic nutrition knowledge of food and they used their knowledge when buying food for consumption. The results showed that many of the students do not mind spending money on a balanced meal. The amount of pocket money per term was the main determinant of what food they purchased and whether they bought ready-made food or prepared it. Recommendations were made for the food industry to address the factors influencing food purchase and consumption when strategising on how to attract new and maintain old customers from the student body.

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INTRODUCTION

The foregoing study sought to determine and analyse the impact of Kenyan students' knowledge of nutrition based on their behaviour of food consumption. These are the students living and studying in the capital city of Kenya, Nairobi. This study was carried out because previous research done in other countries with similar approaches focused on school children. So far, many studies have been carried out in Kenya, but none emphasized on college students' food consumption behaviour, more so those studying and living in the capital city, Nairobi. Consumers involve their feelings and actions, as they perform consumption, which can be measured and observed (Peter and Olson, 2002). This is especially true of tertiary students whose food choices are influenced by many factors for particular consumer behaviour in food selection and consumption. These include their demographic and nutritional factors. Demographic factors include various aspects of an individual's environment. Things like "ethnicity; the subcultures which have different practices: climate which may have a direct or indirect influence on one's consumption patterns, education, as well as social class"; these and other factors will be analysed in the study to find out how they influence the student's food choices, thus the consumption behaviours (Mooij, 2004). However, Brown, McIlveen and Strugnell (2000) state that, food choice and individual preference start at an early age.

Their food preferences are influenced by either their families' home practices or by simply wanting to make an individual choice; it may be a nutritionally informed choice. This is related to the study in that, in the case of this study, the adolescent has now gone to college. When making food choices one decides what to eat, when to eat, and even whether or not to eat in highly personal ways often based on behavioural or social motives which can be healthy ones, but nutrition knowledge guides people to make the right choices (Whitney and Rolfes, 2002) before any purchase is made. Thus food consumption behaviour is influenced by many food choice factors, such as "personal preference, habits, ethnic heritage or tradition, social interactions, availability, convenience and economy, food associations, values among others (Whitney *et al.*, 2002).

In a college situation, students have various "social interactions" which may influence their food choices hence; "Influence of peers", for example, can lead to imitation or to social conformity (Frewer and Trijp, 2007). Personal preference is another factor which determines consumption behaviour in college. The students can be nutritionally informed, although in most cases they are not. This is supported by "individualistic" statements. These are statements about who they are and what they believe in through the food choices they make (Senauer *et al.*, 1998). In addition, affordability and availability of the food items influences the choices people will make: hence, given a range of food choices, one will not necessarily eat or choose all of them; the choice will be determined by the acceptability of

food to them and its availability (Barasi, 2002). In regard to ethnic heritage or tradition, Kenya is endowed with many ethnic groups all of which have their own staple foods. Yet, the whole country shares common food items such as *Ugali* and *sukumawiki*. What stands out most is the cultural background of each Kenyan, where majority of them eat what they grew up eating. For example, it can be said generally that the Luo of Kenya eat mostly fish and the Luhya love chicken. This can also be linked to habit because tradition is its major influence, thus someone has a tendency to eat something just because they have always had that particular food at particular times (Whitney and Rolfes, 2002). Finally, values; these are more intertwined with religious affiliations which have different values and beliefs about their dietary plans and consumption behaviours. For example, Muslims do not eat pork while Christians cannot eat meat during the period of Lent (the period leading to Easter); and both make dietary related food choices which do not collide with their religious practices (Cataldo, Debruyne and Whitney, 2003). Young adults are the propellers of the new marketing trends and are the mainline consumers of most foods being marketed by the big and small scale hospitality and hospitality related industries. There is a need to find out how nutrition knowledge influences their consumer behaviour.

### **Nutrition Knowledge and Factors Influencing Food Choice and Consumption**

How well one eats not only depends on the various food selection made but also on the selection of many different foods at numerous meals over days, months and years (Whitney and Rolfes, 2002). This does not depend on whether a consumer is choosing from a restaurant menu or preparing a meal at home. Sizer and Whitney (2008) state that thousands of food variety line market shelves, ironically this abundance always makes it difficult rather than easier, to plan a nutritious diet. Thus the key to wise diet choices are the basic foods, such as milk and milk products, meats, fish and poultry, vegetables and dried peas and beans, fruits and grains. Furthermore, food intake has a biological aspect to it in meeting the nutrient and energy needs of the body, it is also apparent that the nature of food intake is shaped by a wide variety of geographical, social, psychological, religious, economic and political factors (Fieldhouse, 1995). However, in this study the researcher is going to focus on factors that influence food choice, including individual, cultural, and economic, as well as the ones related to food itself taking into consideration other factors that impact the four mentioned.

#### **Individual Factors**

Food preferences are believed to start at the time of conception and develop when children grow up, particularly after they are being weaned to foods other than breast milk. As they improve mental changes throughout childhood they develop their self image, learn how to cooperate with others and gradually develop independence from their parents (Christian and Greger, 1988). Familiarity is an important aspect in people's food selection. Depending on exposure to various foods while they were growing up and developing, children have various ideas about what is appropriate or not as well as what tastes good and what food items complement each other and also those which are detrimental to their health.

Whitney and Rolfes (2002) state that people select food for a variety of reasons, but whatever the reasons, these food choices influence health. One factor impacting food selection involves the individual and relates to personal preference. It is obvious that not everyone eats the same foods and there is an immense diversity in the various ways that people meet their nutritional needs (Blades, 2001). According to Whitney and Sizer (2008), college students often choose to eat at fast food and other restaurants to socialise, to get out, save time, or to date; while not always being conscious of the need to obtain nutritious food. Hence food becomes a trademark and a source of personal satisfaction and attachment (Fieldhouse, 1995). Finally, men and women tend to exhibit different eating patterns. In particular, women are more likely to engage in compensatory eating-making up for deficiencies such as lack of social contact or depression by eating (MacInnis, 2004).

#### **Colour and Food Quality**

Colour plays an important role in product selection and purchase. Garber *et al.* (2000), as cited in Funk and Ndubisi (2006), state that until recently, marketers failed to recognise the impact of colour on consumer decisions. In food consumption, many customers choose certain colours of food which may be signifying freshness and crispiness of the product. For example, customers may go for bright red meat as a sign of freshly cut or butchered animals. Fresh vegetable products, still green and without spots at the time of purchase are assumed fresh. Products have varying colours, but the underlying fact is that, for example, if kale is yellowing then no customer will purchase it unless there is a food crisis. The same applies to meat products in supermarkets or at the butchers, if they show signs of browning, some people may not buy it because they are not deemed fresh. Apart from that, most foods which show decolourisation have developed some sort of odour to it, thus the smell and colour change put off customers from purchasing the product. Nevertheless at times individual colour choice may be changed under the influence of their peer group, family or friends (Funk *et al.*, 2006). When customers make certain purchases, they have the tendency to buy food items that are similar in colour to those their family deem fresh, to taste good when combined with certain foods or when served in a particular way. Imram (1999) states that initial product appearance and also consequent participatory factors like product flavour and texture dominate the point of consumption. Furthermore, in a restaurant setting, a person may choose food products whose combination provides an attractive presentation or when the menu has pictures of food items or when in the supermarket setting, the display of food affects a person's food choice and purchase. The food products chosen for display and sale by caterers are selected for their colour and appearance attributes. These attributes attract the customer and later influence in the decision on whether or not to buy the food. In a food choice situation, products with the greatest visual appeal are often chosen first. Thus colour plays an important role in the initial judgement of food, ultimately influencing acceptance or rejection of the food (Imram, 1999). In addition, the texture of the food impacts on selection. For example, if a food item is hard by nature but at the point of purchase a customer finds it in a soft state the customer sees it as a sign that the food is not fit for consumption. To summarise, the qualities of food

flavour, appearance, texture and odour have an effect on whether a food is eaten or not.

### **Product Labelling and Nutritional Information**

Also product packages give information about the nutritive values of its contents. Shoppers read and compare the labels of comparable food items which have the same product line but have varying nutritive information and provide different nutrients. The one that has more to what the student customer wants will be purchased; hence reading labels helps in knowing which product is superior compared to another nutrition-wise. Another contributing factor is if the student has allergies, then reading labels of products saves them from having volatile reactions depending on their food allergies. The food label may have nutritional information, as already mentioned, and serving portions as well as ingredients used in the manufacture of the food product. The daily food guide pyramid illustrates the relative proportions that make up a nutritious, well balanced diet (Whitney, and Rolfes, 2003, p. 37). In knowing the basic food choices, individuals can easily make informed decisions and purchase and consume food in a nutritious manner. Tertiary students living and studying in Nairobi can also use this as guideline in balancing their cultural, religious and daily needs for the food they buy and consume.

### **Gender and Age**

Clearly, males and females can differ in traits, attitudes, and activities that can affect consumer behaviour (McInnis, and Hoyer, 2004). Gender is associated with some modest differences in food preferences. Weight concerns relate to dieting and food choice (Frewer *et al.*, 2007). Female college students may eat certain foods they perceive to help in controlling body weight. They perceive these foods to improve their physical appearance and avoid those they believe are detrimental (Whitney, and Rolfes, 2002). On the other hand, some may not consider this, while most male counterparts have no worries about what they eat. In most cases, one will find neither group concerned about their health status rather they will be checking their physical appearances and compare it against their diets. In addition, sometimes females have a tendency to binge on junk-food to avert their mood-swings or they have calorie-rich food when they are hungry. Once conscious of the amount of food eaten, they will again check the calories and will start to starve themselves for having had mood averting calorie rich foods. This has not been found to impact many Kenyan female students and has not led to eating disorders such as anorexia. There is little or no mention of eating disorder cases in the country other than malnutrition where people genuinely lack enough nutritious food for good body health maintenance. However, there may be a few cases of overweight as well as obese people in some instances, but this is as well not so rampant.

### **Convenience and Availability**

People are much more likely to choose foods that require minimal effort between the point of selection and consumption (Frewer *et al.*, 2007). In that, a student may choose to prepare his or her own meal depending on the amount of time available to do so. If time is not available, they end up going for a quick sandwich or takeaway food as well as for ready to

eat foods available in the supermarkets and which require minimum handling and preparation in order to save time. Whitney and Rolfes (2002) affirm that consumers in recent years consider convenience as important and are willing to pay more than half their food budget on meals that require little, if any further preparation. Thus they take into consideration what is easily available in their immediate setting and is easy to prepare in the shortest and fastest ways for consumption. According to Whitney and Sizer (2008), availability is related to products which are available in the immediate environment. Thus many people take advantage of this and develop a meal from the natural resources available locally. In most Kenyan regions, there are various products which are home grown or brought closer to the consumer by the retailer in the local markets. People take advantage of this and create meals with ingredients they get from the local markets or the groceries or supermarkets.

### **Cultural Factors**

Mooij (2004) defines culture as the glue that binds people together. It entails shared beliefs, attitudes, norms, roles and values found among speakers of a particular language (p. 26). In every society, there are usually unwritten rules, which specify what palatable food is and what is not. According to Brown *et al.* (2000), the home environment is considered as one of the most prominent influences on young consumers' development of food behaviour. If parents hold negative attitudes towards nutritionally balanced diets, it will be automatically passed on to their children. This starts as early as conception of the child and may continue well through life of the child through to college where this may or may not change. Hence this is referred to as ethnic diets, food ways and cuisines typical of national origins, cultural heritages, races, or geographical locations (Cataldo, and Rolfes, 2002). Every region or community has its traditional foods on which it bases its diet. This can be observed in Kenya, which is a diversified nation with many tribes and hence a variety of cultural practices. Moreover, the country has a staple meal which is *Ugali* and *sukumawiki* normally accompanied by any protein source, depending on the family's income and means of obtaining any. Though many other staple foods can be noted within the country, it is either one source of a nutrient or two. For example the Kikuyu people have potatoes, which they combine with green peas and pumpkin leaves for a meal. Another strong influencing social factor of food choice is religion. Religion is a fundamental belief system which includes myths and explanations of the social and religious order which is carried out by its members (Fieldhouse, 1995). For example, Jewish law sets forth an extensive set of dietary rules while many Christians forego meat during Lent. Other faiths prohibit some dietary practices and promote others (Cataldo, and Rolfes, 2002). This also adds to the various factors that influence the tertiary student when making food choices prior to consumption.

Some people maintain the habits they have been practising throughout their lives. For example, having a sandwich for dinner or drinking only juice for breakfast. While some associate food with happy occasions, or tokens, others may associate food with bad or sad occasions. An individual may prefer sweet to bitter foods, another may prefer hot peppers or spiciness of Indian cuisine. Some flavours of food items may have a positive or negative impact, in that they are eaten by

people one likes, which may be a symbol of status in the group or they remind you of fun, hence positive. On a negative aspect, the particular food may have been forced on someone making the person sick while or after eating them (Whitney, and Sizer, 2008). In agreement with the above statement, Brown *et al.* (2000) state that food preference habits of young consumers can alter depending on the environment within which they are present, either, home, school, and/or social. To concur, Whitney and Sizer (2008) state that cultural traditions are not stagnant. They keep changing as people move learn about new foods and teach each other their cultures.

### **Economic Factors**

Food choices are also affected by the cost and availability of food. According to Brown (2002), researchers have found that college students on a prepaid meal plan have better diets the entire term than those who pay at each meal. In Kenya some colleges have pre-paid meal plan for their students included in the tuition fee or pay-as-you-eat system which is common in many public universities in the country. Hence those with a meal plan have better planned diets while those with no meal plan bring personally prepared food or buy food in the restaurants near their colleges.

Whitney and Rofles (2002) state that people eat food items that are accessible, quick and easy to prepare, and are within their financial means (p. 3). Many consumers today value these general aspects of foods in that in today's busy schedules of class work, lectures and a huge pile-up of paper work and assignments, students have a tendency to go for something they consider quick and will give them the energy needed to do particular school work while saving a lot of time for other things which they have to do. Rich family background allows some students to spend more on costly food, while those with middle class status background limit their expenditures to what they can afford, and those who can barely get a meal on the table survive from hand to mouth basis. As in work to get the little food or at least a meal per day, while doing small jobs to get some little money to be able to afford it.

### **Consumer Behaviour and Factors Influencing Food Purchase and Consumption Habits**

In relation to the definition given for consumer behaviour, one can deduce several aspects. This includes factors like need satisfaction and use of experiences as guidelines in product selection and use. Hence, dynamics of consumer behaviour; meaning that the consumer is constantly evolving over time. They use interactions between environmental events, cognitions and behaviours as well as exchanges between themselves as guidelines in making food choices (Peter, and Oslon, 1993). This can be divided into various aspects more so demographic, cultural and economic diversity (Senauer, Asp and Kinsey, 1998). The demographic aspects in a way influence and affect many areas surrounding the consumer. These include factors like gender, education level, economic status of an individual as well as culture and the environment. When a person is making choices and deciding on what food items to purchase, she/he tends to take these factors into consideration before the purchase is made which in turn leads to the consumption of the product or the service being paid for.

Peter *et al.* (2002) state that there are many underlying factors, such as decisions of where to eat include, time of day, time available to eat, and the price of the food items. In the past, people used to eat when food was ready, but today it is a matter of speed and convenience, not the food itself. However, in this research the author focuses on cultural, individual and economic factors while taking into consideration other influencing factors.

### **Food Selection Factors**

According to Senauer and Elain (1991), an individualistic lifestyle allows consumers to make statements about who they are and what they believe in through their food choices. Many consumers may seek and develop their own individual food preference behaviour, particularly apparent through the numbers and styles of meals eaten outside the home and within the school and social environments (Brown *et al.*, 2000). Others may ascribe to having expensive exotic meals making food an item of conspicuous consumption, such that the more exotic the meal, the more prestigious the status associated with it (MacInnis, and Hoyer, 2004). Some may prefer take-out (take-away or to-go meals) while some prefer a family setting dinner at home where everyone is present for the meal. In addition, age gender and household play important roles in consumer behaviour. Age is a key factor in that people within the same age group have the same life experiences, needs, symbols and memories which may lead to similar consumption patterns (MacInnis *et al.*, 2004). Most college students belong to the same age group and thus have tendencies to either emulate their peers who they think have better taste in food choice and consumption or simply to do what they practise at home. In recent research, it has become evident that "fast-food" is preferred over "proper food", which encompasses a meal shared at dinner or lunch (Brown *et al.*, 2000). This can be observed by the way students are having their meals to save time, since they are far from home and select fast-food over proper food so as to save time to go home. In addition, the urban family, with college students in their midst and both parents working, promotes this because of lack of time to plan and make a proper meal consisting of a protein carbohydrate and a vegetable. Though eating behaviour and nutrition knowledge literature is contradictory, physiological needs, body image, food preferences, parental practices, peer pressure, media, social norms, fast food and personal experiences have a major impact on tertiary students food choice and consumption behaviour (Pirouznia, 2001).

### **Culture**

Culture is the typical or expected norms, behaviours, and ideas that characterise a group of people; it can have a powerful influence on people or not, hence clearly affecting decision-making (MacInnis *et al.*, 2004). There is evidence that traditions, beliefs and values are amongst the main factors influencing preference, mode of food preparation, serving and nutritional status. The best way to know an individuals' food preference is to ask them what their culture is (Frewer *et al.*, 2007). Tertiary students exhibit these trends among themselves. Since most of them come from a variety of mixed cultures and ethnicities, they are prone to show their food preferences and may assimilate other cultures to bond with their college-mates. Brown *et al.* (2000) surmise that young consumers are reluctant to have healthy and nutritious food

because of fear of appearing “weird” within a group situation or among friends.

### Economic Influences

There are many factors that influence the economic status of families, individuals and their children. This includes income, employment or unemployment, recession and political stability. Money/income is an important aspect in people’s lives because it determines what an individual can afford for a meal for her/himself or for the family to share. According to Peter *et al.* (1993), income gives people the power to purchase many things for their daily life. It is also used to approximate social-class standing. The low income families are more inclined to a family meal than going out, since it is cheaper to cook than going to a restaurant. While the middle and upper-class families or individuals may occasionally or frequently dine out because they can afford it. This is transferred to their children in terms of pocket money, which they use to have meals in college or in the local restaurants or in the exotic restaurants to sample the delicacies of other countries. Most tertiary students in Kenya come from families with dual incomes while a very small percentage comes from single parent families and a substantial number from single income families. Generally, families have a traditional outlook on life in the Kenyan setting, many still have the lady concerned with the family’s livelihood and at the same time they can afford to dine out or simply have some convenient foods. Thus college students spend their money depending on the income level of their families, make food choices and form consumption patterns in relation to the economic status of their families.

## MATERIALS AND METHODS

The foregoing study used interpretivism and subjectivism philosophies to examine the Kenyan tertiary students’ specific nutrition knowledge in relation to food choice and consumption behaviour. These were used in combination with a deductive approach. Furthermore, the research embraced an exploratory stance; because, it sought to explain the impact of nutrition knowledge on consumer behaviour of Kenyan tertiary students in their food selection and the factors that influence them. The data collection tool employed was the self-administered questionnaire. The target population of the research was the tertiary students in Kenya living and studying in Nairobi. The research used SPSS for data analysis. In addition, the author used descriptive statistics to analyse the collected data. Cross-tabulations were done to find out which of the variables of nutrition knowledge had a great impact on consumer behaviour and if the vice versa tests were done. Finally, paired tests were also run in order to find out if two tests mean values were different or the same, as well as the correlation of consumption behaviour of tertiary students in relation to their nutrition knowledge.

## RESULTS AND DISCUSSION

**The Typical Respondent:** Cross-tabulation was used to identify the survey’s typical respondents. Males accounted for 231 or 58% of the study compared to 162 females (42%) in the survey. In the age group category, most of the participants were in the 20-25 age group which had a total of 262 participants. Majority of the participants had pocket money of

CHF 41 and above, with a total of 159 participants and the second highest was from below CHF 20 with 136 participants and a total of 100 had CHF 20-40 to spend per term. Protestants participating in the survey were a total of 216 while Catholics followed closely with 148 participating and other religions had a representation of 31 participants. To sum up, many of the survey participants were enrolled in Diploma and Higher Diploma courses and others in the Certificate and Higher Degree courses. Those in the Diploma and Higher Diploma courses represented a total of 263 of the participants, while Certificate programme and Higher Degree were 132 participants. Since the research was on tertiary students living and studying in Nairobi, Kenya, the author had to take into consideration their ethnic backgrounds. Most came from Central, Nairobi and Rift Valley Provinces, all totalling 164, while those from Nyanza and Western Provinces were 115 and finally from Coast, Eastern and North Eastern Provinces were a total of 103, making it a well distributed diverse group.

To relate the demographic aspects of the study to the research concepts, nutrition and consumer behaviour, the author did cross-tabulation tests to find out the factors that influenced tertiary students most. The male participants of the research understood what it meant to have a balanced diet than the females. This could be noted by the number of males who “strongly agreed” (100) and “agreed” (86) to the statement compared to 79 for females who “strongly agreed” and 60 who selected “agree”. In the religion category, more Protestants knew the definition of nutrition compared to Catholics. Male participants had more knowledge of source of Vitamin C compared to their female counterparts who were quite unsure on it source. Ten participants from the male participants strongly disagreed and disagreed, compared to 13 female participants. This showed no big marginal difference, in the opinions to the statement. For the cross-tabulation of consumer behaviour and demographic factors, the author did a cross-tabulation of pocket money and meal expenditure to check how the pocket money influenced the spending power of the students. Most of them did not mind spending more money to have a balanced diet. They were for spending money to get a balanced diet and most preferred cooking their own food than buying; although this was like a split of a quarter to three quarters of the participants. In the table below, students knew what they were having and knew the definition of nutrition except for the 133 who had no comment to the definition.

**Table 1: Cross-tabulation of Definition of Nutrition with College Programme**

		College programme		Total
		Certificate and higher degrees	Diploma and Higher diploma	Certificate and higher degrees
Definition for nutrition	A state of well being	36	85	121
	Having a balanced diet and all nutrients in moderation	15	35	50
	All of the above	25	65	90
	No comment/I do not know	55	78	133
	5.00	1	0	1
Total		132	263	395

Source: Authors statistics

In addition, most of the participants knew about nutrition and were using their knowledge to have balanced diets. The author did some tests by cross-tabulating the consumer behaviour rating questions with a demographic factor to see what motivated the tertiary students to purchase foodstuff from the nearby food sellers. This could either be from the supermarket, kiosks, fast-food places and/or restaurants. The following tables show the test results.

determine if they would be accepted or rejected. These were the stated hypotheses:

- $H_0$ : Nutrition knowledge has an impact on consumption behaviour of Kenyan tertiary students of food products purchase and consumption.  
 $H_1$ : Nutrition knowledge has no impact on

**Table 2: Cross-tabulation of Gender and Cheap Seasonal Food**

		Cheap seasonal food					Total
		Strongly agree	Agree	neutral	Disagree	Strongly disagree	
Gender	female	54	49	26	26	7	162
	Male	67	71	42	37	14	231
	3.00	0	1	0	0	0	1
	4.00	0	1	0	0	0	1
<b>Total</b>		<b>121</b>	<b>122</b>	<b>68</b>	<b>63</b>	<b>21</b>	<b>395</b>

Source: Authors statistics

**Table 3: Cross-tabulation College Programme and Meal Expenditure**

		Meal expenditure					Total
		Strongly agree	Agree	neutral	Disagree	Strongly disagree	
College programme	Certificate and higher degrees	54	36	19	18	5	132
	Diploma and Higher diploma	84	81	39	44	15	263
<b>Total</b>		<b>138</b>	<b>117</b>	<b>58</b>	<b>62</b>	<b>20</b>	<b>395</b>

Source: Authors statistics

**Table 4: Correlations of Consumer Behaviour and Nutrition Knowledge**

		Consumer Behaviour	Nutrition Knowledge
Spearman's rho	consumer behaviour	Correlation Coefficient Sig. (2-tailed) N	1.000 .438(**) 395
	nutrition knowledge	Correlation Coefficient Sig. (2-tailed) N	.438(**) .000 395

\*\* Correlation is significant at the 0.01 level (2-tailed).; Source: Authors statistics

**Table 5: ANOVA (b)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.141	1	20.141	84.037	.000(a)
	Residual	94.189	393	.240		
	Total	114.330	394			

a) Predictors: (Constant), nutrition knowledge; b) Dependent Variable: consumer behavior; Source: Authors statistics

These tables show the cross-tabulation of the consumer behaviour and food purchase of the research participants. It can be noted that many students bought products for freshness and good quality which could be seen in the products colour. They also went for seasonal food because it was cheap to obtain from the market. In addition, they did not mind spending more money to get the balanced diet they required.

### Analysis of Key Research Concepts

The author ran tests to check the main concepts of the research stated in the research objectives and statement of research problem, which are mainly nutrition knowledge and consumer behaviour. This was done to test the research hypotheses and

consumption behaviour of Kenyan tertiary students of food products purchase and consumption.

To support these findings, the author did more tests for correlation of the independent variable influencing food consumption. All rating questions dealing with nutrition knowledge were added up together and the total sum divided by the number of rating questions added; the same was done for consumer behaviour questions. The independent variable nutrition was correlated with the dependent variable, consumer behaviour and it was found to be significant at the point of 0.438 for both variables, as shown in the table below.

The author later did more tests for regression analysis of the research concepts. This was compared to the dependent variable (consumer behaviour) and correlation factor of the independent variable (nutrition knowledge) as well as a nutrition related question. This confirmed the above findings and support for the hypothesis; that there was a significant relationship between nutrition knowledge and consumer behaviour. This supports the null hypothesis stating that: 'nutrition knowledge has an impact on consumption behaviour of Kenyan tertiary students of food products purchase and consumption.' The author further did non-parametric correlations of the main research variables; consumer behaviour and nutrition knowledge, rating questions to check on which influencing factor in the rating questions on nutrition impacted most on their consumption behaviour. The results showed that nutrients had the most impact with a result of 0.420(42%), while nutrition and health came second with 0.292(29%) and finally, food nutrients with 0.246(24%). The rest had a minimum impact on the consumption behaviour patterns of the students. Additionally, the author later did more tests with regression analysis to test for possible cause and effect relationship between the research concepts. The table above shows the significance level of both research concepts when the regression test was done. In regressing nutrition knowledge with consumer behaviour, the main research concepts, the results showed nutrition knowledge accounted for 42% of the consumer purchase behaviour patterns of the students.

## CONCLUSIONS

The major differences between the demographics, was the number of male participants compared to female. Also mentioned was the religious groups' knowledge of nutrition compared to each other, where the results showed Protestants were well versed with nutrition definition among other aspects. The results of the cross-tabulation showed that the participants did not mind spending money on either ready-made food, which they could buy from fast-foods, from the restaurants, or from the supermarket, as well as cooking for themselves. The money spending went both ways. This showed that they were spending on fast-foods and restaurants as well as ready-made foods when they did not have more time to cook for themselves agreeing with Whitney and Rofles (2002) who state that people eat food items that are accessible, quick and easy to prepare, and within their financial means (p. 3); although there was a difference of this statistic among the females and males. More males knew what a balanced diet was compared to females; this was noted in many of the nutrition related where more males were a versed to strongly agreeing to the statements than their female counterparts.

## RECOMMENDATIONS

Recommendations were provided to the food sellers in Nairobi and also for the academia both in Kenya and in other countries.

### *Recommendations to Food Sellers in Nairobi*

Based on the survey results and the reviewed literature, food product developing and selling markets should spend more money on the development of nutritious diets, affordable to

the students, so that they (students) can have more balanced meals. This is in terms of freshness, proper packaging and labelling to avoid people getting the wrong information on the product labels hence leading to allergic reactions. In addition, these stakeholders should keep up the good work of bringing fresh green products to the market near the students every season, to help the students obtain cheap seasonal food. By understanding the nutritional needs of tertiary students, the general food market will benefit in selling appropriate foodstuffs to students which sell fast and they do not suffer losses due to perishability. The food sellers should also keep up the good work of selling a variety of foods and blending in the diverse cultural needs of the student body of Nairobi, Kenya, since many are blending in cultures of their fellow students and getting to sample a variety of different foods made differently by other cultures. This can be seen by the variety of restaurants lining the streets of Nairobi, from Western cultures to more of traditional such as Chinese, Brazilian and many more.

### *Recommendation to Academia*

The Ministry of Higher Education in Kenya should sensitize people on research to make it easy for future researchers to carry out research in tertiary institutions in obtaining permission to carry out surveys and the students to be able to participate willingly. This saves time spent going from college to college explaining what the research is about and having to wait for three days or more to be granted permission to carry out a research. In addition, future researchers should allocate more time to obtaining permission for carrying out the survey in institutions, because some colleges and universities take time in responding to requests for permission. This will ease on the pressure and work load of having to spend more money (transport costs) and more time in convincing the institution heads to grant permission and time is of essence.

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