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Research article

ENSURING FOOD SECURITY BY ASSESSING PREFERENCE OF ORGANIC AGRICULTURAL PRODUCTS AMONG THE STAFF OF FEDERAL UNIVERSITY OF AGRICULTURE, ABEOKUTA, OGUN STATE, NIGERIA

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ABSTRACT

Tremendously, food security has become a global talk growing considerably over the years; several literatures have assessed the effect and importance of organic agricultural products on health. However, only little fraction of farmers practice this method in their day to day farming system. Research has shown that the choice faming system (organic or inorganic) adopted by farmers affects food security, and invariably affects our wellbeing. For this reason, this study assessed the preference for the organic agricultural product within the staff of Federal University of Agriculture Abeokuta, Ogun State. This research identified the organic agricultural products the respondents have purchase and consumed, identified the level of preferences for organic agricultural product among respondents; ascertained the level of perception on preference for organic agricultural product over inorganic agricultural products among the respondents and to examine the factors influencing the preferences for organic agricultural products over inorganic agricultural product among the respondent. A simple random sampling technique was used to select 131 staff in the study area and data was collected using a well structured questionnaire and interview. Descriptive and inferential statistics were used to analyse the data and the result were presented using frequency, percentage and mean. The result showed that 61.1% of the respondents were men, 64.1% were aged between 31-40years with a mean age of 38years. The average year of service among respondent was 10 years. Majority (96.9%) of the respondent were aware of organic agricultural products on campus via various sources available to them; awareness on the benefits of organic products was found to be highest with 49.2%. The study revealed that mainly 85.5% were willing to pay for the products irrespective of the price. Better taste was ranked the highest among the

indicator of rank preferences with a mean value of 7.02among the respondent while market availability was ranked least with a mean value of 6.41. The regression result shows that age, educational qualification, working experience and willingness to pay for the product irrespective of the price were the factors influencing the preferences for organic agricultural product in the study area. Conclusively, the research showed that there is proper awareness of the product on the campus as shown by majority of the respondent indicating their awareness of the product and high level of preference for organic product.

Keyword: Assessing, preference, organic, agricultural, product.

INTRODUCTION

Food security relics is an issue growing alarm in sub-Saharan Africa (Romero-Aranda, Jurado, & Cuartero, 2006), and in the drive to prevail over this challenge, the similarity of governments in the area have to formulate policies and programmes to call the awareness of farmers into high-input technology (Niggli et al., 2014). Nonetheless, the applications of agrochemicals are now fetching an observable part of modern agriculture production systems in Nigeria (Elemike, Uzoh, Onwudiwe, & Babalola, 2019). For illustration in Nigeria, about 125,000 to 130,000 Mt of pesticides are practice yearly for agricultural pest control, the highest in West Africa (Owoeye, Toluwase, & Sekumade, 2017).

An extensive variety of agrochemicals exist, which all are potentially detrimental and have been related to unhelpful human health conditions and environmental problems (Zhang, Wang, & Zhou, 2019). Some developed countries, stern laws and regulations on agrochemical use exist, and obedience is strictly enforced. On other hand, in most SSA countries, these edict are either fictional or fruitless and, environmental pollution and other linked problems look to continue unabated (Niggli et al., 2014). This is predominantly true in the outlook of Nigeria, where the extent of pollution of the agrarian communities (which comprise over 60% of the population) by agrochemicals cannot be precisely projected, as there are neither comprehensive research on the extent of environmental and health impact nor any valuable monitoring procedure in place (Jessop, Wilson, Bardecki, & Searcy, 2019).

Organic Agriculture is considered as one of the approach that meets the objectives of sustainable agriculture. It is a holistic production management system that avoids the use of synthetic chemicals, growth hormones, antibiotics and gene manoeuvring, while promoting improved exact standards of production that are socially and economically sustainability (Parajuli, 2020).The organic food industry has grown noticeably over recent years on a universal basis and has been the subject matter of much media interest over the past decade. However organic produce or foodstuffs are those produced which are processed through environment friendly techniques, non-chemically treated, fresh or minimally processed, non-pesticide, free from genetically modified organism, having organic certificates, traditional / indigenous products, herbal product and naturally grown (Mervin & Velmurugan, 2013). The holistic production systems have been gaining more consideration from the agricultural producers and a intensifying demand from the society due to increasing health concerns. Whereas it is legitimate for urbanized countries, it is also gaining attention in developing countries as well. The market of organic products is rising as the number of people eager to eat organic food and attitude towards organic food products is increasing. The consumers' acquaintance with organic vegetables generally influences them to be willing to pay premium on the vegetables. Thus, this study area been a scholars environment, more is to be expected about the knowledge of organic product and a high level of preference. Thus, this study will proffer answers to the following research questions;

- Highlighting the socio economic characteristics of the respondents in the study area?
- What are the organic agricultural products the respondents have purchased and consumed in the study area?
- What are the respondents ranking of their preference for the organic agricultural product(s) that has purchased and consumed?

- What is the respondents level of perception on preference for organic agricultural products over the inorganic agricultural products
- What are factors influencing the preference for organic agricultural products over inorganic agricultural product among the respondents?

The rest of this paper is organized as follows: **Section II** describes the existing literature on food security, benefits of organic and inorganic farming, and possible future directions towards ensuring sustainable food security, **Section III** presents the methodology of the research, **and Section IV** presents our analysis and results, while **Section V** concludes.

II LITERATURE REVIEW

Organic farming is an agricultural technique of naturally producing quality crops, vegetables, or animals, without harming the environment; the people; the animals as well as other microorganisms that are living around(Timsina, 2018) . It is an application of modern eco-friendly farming practices that works in concurrence with nature. Does it mean going back to the ancient and traditional methods of farming? Not inevitably. What organic agricultural does is to pertain the very bests of these past techniques in combinations with modern knowledge of science and technology. Organic farming is comprehension intensive unlike traditional farming. In the simplest terms, farming organically implies that the farmer uses real natural means rather than using petro-chemicals artificial hormones; antibiotics, vaccines; pesticides and herbicides in his or her agricultural productions.. Organic farming not only excludes synthetic inputs-pesticides, herbicides and fertilizers but also focuses on sufficient biological processes such as composting and other measures to maintain soil fertility, natural pest control, diversifying crops and livestock. Organic agriculture gives priority to long term ecological health, such as biodiversity and soil quality, contrasting with conventional farming, which concentrates on short term profit (Timsina, 2018). National Organic standards Board of the USA (Migliorini, 2017) defined organic farming as an ecological production management system that promote and enhance biodiversity, biological activity. Organic farming system recognize background as an unit, which has value in its own rights; human-beings have a moral responsibility to steer the course of agriculture so that the cultivated landscape makes a positive contribution to the countryside.(Chandrashekar, 2020), analysis natural cultivation as holistic creation organization systems (for crops and livestock) emphasizing the use of management practices in preference to the use of off-farm inputs. This is accomplished by using, cultural, biological and mechanical methods in preference to synthetic materials. However, in the context of this paper, organic agriculture is agricultural production without the use of synthetic chemicals (fertilizers, pesticides, antibiotics,). However For farming, natural resources such as compost and fertilizers are made used to preserve soil organic matter and as sources of nutrients. Further, the incorporation of soil management techniques such as mulching, inter-cropping and crop rotation are integral components of an organic farming system. Another important characteristic of an organic farming system is the use of agro- forestry system. An organic cultivation method is intended to labor beneficially with likely organic cycles and to operate with minimal external inputs. In order to ensure that the organic system is efficient and sustainable in the long term, sustainable crop rotations, nutrient recycling, encouragement of a rich biodiversity and other management practices are necessary prerequisites. According to (Chandrashekar, 2020), nevertheless an organic farming system have the following objectives: increase soil biological activity; maintain long-term soil fertility; recycle waste of plant and animal origin in order to return nutrients to the land; minimize the use of non-renewable resources; rely on renewable resources in locally organized agricultural systems; promote the healthy use of soil, water and air, in other to diminish varieties of pollution which may result from agricultural practices; handle agricultural products with emphasis on careful processing methods in order to maintain the organic integrity and vital qualities of the product at all stages; established an existing farm through a period of conversion; the appropriate length of which is determined by site-specific factors such as the past record of such land , also the kind of cultivation practice in it .

Problems of Organic Farming in Nigeria

1. Lack of Awareness

It is an actuality that several farmers in the country have only indistinguishable ideas about organic farming and its advantages as compared to conventional farming methods. Use of bio-fertilizers and bio-pesticides requires consciousness and motivation on the part of the farming community. Knowledge about the availability and usefulness of supplementary nutrients to augment the soil is also crucial to increase productivity(Agegnehu, Srivastava, & Bird, 2017)

2. Output Marketing Problems

(Meek & Anderson, 2019) Organic farmers are of the estimation that marketing and distribution of organic produce is challenging, disparate in the developed countries. It is found that prior to the beginning of the cultivation of organic crops, their marketability and distribution at a top over the conventional produce has to be guaranteed. One has to get guarantee before his good is sold. Lack of ability to obtain a first-class price, at least during the period necessary to achieve the productivity levels of the conventional crop will be a hindrance. More prominence is usually placed, by government on policies to increase food production with little or no contemplation on how to allocate the food produced resourcefully and in a approach that will augment increased productivity. Furthermore , food promotion by farmers and the household , mainly in the immediate post-harvest phase usually involves a lot of costs and in Nigeria these costs are so high that lowering the costs through efficient marketing system may be as important as increasing agricultural making(Journal, Doi, & Doi, 2020)

3. Shortage of Bio-mass

Recently many specialists are well informed farmers are not sure if all the nutrients content required quantities can be made available by the organic materials. They are also of the scrutiny that the obtainable organic matter is not simply enough to meet the requirements(Morthen & Analysis, 2020). The crop residues valuable to prepare a high grade natural, organic fertilizer are separated after harvest from the farms. And they are used as fodder and fuel. However if some are left over on the farms insects and other pest will destroy them. The small and trivial cultivators have hitches in getting the organic manures compared to the chemical fertilizers, which can be bought easily, if they have the financial ability to procure them. Nevertheless, they have to either produce the organic manures by utilizing the bio-mass they have or they have to be collected from the locality with a least effort and cost. Increasing pressure of population and the desertion of the common lands as well as the wastes and government lands make the task complex (Swami, 2020)

4. Inadequate Supporting Infrastructure

In spite of the recent pronouncement by the African Union to assist in the development of organic agriculture in the continent, the Federal and state governments are yet to formulate policies and a credible mechanism to implement them. NOAN is creating awareness to the administration to produce policy on Organic Agriculture, accreditation and certification for organic produce. Until now no agency, NGO yet to normalize or guarantee conformity with international organic invention system. The trade channels are yet to be formed and the infrastructure facilities for verification leading to certification of the farms are inadequate (Adaobi, Nwankwo, Frank, Uche, & Gabriel, 2020)

5. High Input Costs

The minute and irrelevant farmers in Nigeria have been practicing a kind of pre-organic farming in the form of the habitual husbandry system.. However, the costs of the organic inputs are now higher than those of industrially produced chemical fertilizers and pesticides including other inputs used in the conventional farming system. According to an commerce source cocoa , groundnut cake, palm karnel , pure fertilizer,, cow dung, other manures, etc. applied as organic manure are increasingly becoming costly making them exorbitant to the small cultivators (Atreya, Subedi, Ghimire, Journal, & No, 2020)

6. Non-availability of farm Inputs

(Ogunleke, 2020) Bio-fertilizers and bio-pesticides are yet to become trendy in the country. There is a need of marketing and distribution network for them because the retailers are not attracted to deal in these products, as the demand is low. Bio fertilizers are not marketed by retailers in most parts of Nigeria. The erratic supplies and the low level of awareness of the cultivators also add to the problem. High limits of earnings for chemical fertilizers and pesticides for vending, heavy advertisement campaigns by the manufacturers and dealers are other major problems affecting the markets for organic inputs in Nigeria.

7. Lack of appropriate Agriculture Policy

Promotion of organic agriculture both for export and domestic utilization, the wishes of food security for millions of the poor, national self-sufficiency in food production, product and input supplies, etc. are very important issues which will have to be dealt with in a fitting agricultural policy in Nigeria. These are serious issues that necessitate being resolved with consistent efforts. Formulation of an appropriate agricultural guiding principle that will take care of these density is essential to uphold organic agriculture in a big way Nigeria(Swami, 2020)

8. Lack of Financial Support

Nigeria has to design a overabundance of national and regional standards in tune with those of the developed countries. The adoption and maintenance of such dogmatic outline and its implementation will be costly. The cost of certification, a major section of which is the review inspections carried out by the certifying agencies, which have freedom to mend the timing, type and number of such scrutiny appears to be taxing for the small and upcoming farmers. Regardless of contributing 45 per cent to Nigeria's Gross Domestic Product, agriculture, which ahead of the discovery of oil was the country's peak revenue earner, is still plagued by subsidy issues. Supports from the States and the Federal government for the marketing of the organic products are not imminent (Barad, Fletcher, & Hillbruner, 2020)

9. Low production

Conventional agriculture has shown to produce more yield than organic agriculture. A 2006 study recommended that converted organic farms have lower pre-harvest yields than their conventional counterparts in developed countries (92%) and those organic farms have higher pre-harvest yields than their low-intensity counterparts in developing countries (132%) (Stanhil,1990). In several cases the farmers occurrence some loss in yields on leaving synthetic inputs during exchange of their farming methods from conventional to organic. Restoration of full biological activity in terms of growth of beneficial insect populations, nitrogen fixation from legumes, pest suppression and fertility problems will take some time and the reduction in the yield rates is the result during the changeover period. It may also be feasible that it will take years to make organic production possible on the Nigerian farms. Small and marginal farmers cannot take the risk of low yields for the initial 2-3 years during the conversion to organic farming. There are no schemes to compensate them during the adjustment period Nigeria (Barad et al., 2020)

10. Political and Social Factors

Agriculture in Nigeria is focus to political interventions with the objectives of providing favors for electoral reimbursement. Subsidies and other supports from both the Federal and state governments inhibited prices of inputs like chemical fertilizers, the public sector units' dominant role in the production of fertilizers, government support/floor prices for many agricultural products. Correspondingly, supply of inputs like power and water either without cost or at a subsidized rate, etc. are the tools often used to attain political objectives. Any movement for the promotion of organic farming in Nigeria will have to counter opposition from the sections who promote from such policies in the conventional farming system Nigeria (Mdee, Ofori, Chasukwa, & Manda, 2020)

Empirical Review on determinant of Organic Agricultural Products consumption

The literature review emphasizes important variables to examine the consumers' attitude towards Organic food products like health concern, environmental concern, animal welfare, food safety, sensory variables, prestige, organic food knowledge, ethical concerns, price premium and socio-demographical factors (Mdee et al., 2020).(Rana & Paul, 2017) have found that Environmental and animal rights issues had a strong influence on

attitudes towards organic food. He also established that the more people are concerned about ethical issues, the more positive attitude they have towards organic food, and the more likely it is that they will consume organic food. (M & R, 2011) in research work reported that positive assessments of organic production referred to 'better taste', 'healthier', 'no artificial additives', and 'no chemical synthetic pesticides', 'limited use of antibiotics' etc. (Swami, 2020)spot out that organic food is often related to definite lifestyles that include healthy eating, vegetarianism, alternative medicine, religious or societal considerations etc. Overall, more positive attitudes towards organic food have been detected in women as opposed to men (Alzahrani, 2020).

III METHODOLOGY

Study Area

The was carried out at Federal University of Agriculture, Abeokuta (FUNAAB).The University is located next to Ogun-Osun River Basin Development Authority (OORBDA), along Osiele- Abeokuta road, off Abeokuta-Ibadan road in the north Eastern end of the city at Alabata and is from the city center of Abeokuta which lie approximately on latitude 70 30' N and longitude 30 54' E. It lies within the humid lowland rain forest region with two distinctive seasons. The university has ten colleges; College of Agricultural Management and Rural Development(COLAMRUD), College of Environmental Resources Management (COLERM), College of Animal Science and Livestock Production(COLANIM), College of Food Science and Human Ecology (COLFHEC), College of Plant Science (COPLANT), College of Physical Science (COLPHYS),College of Biological Science (COLBIOS) College of Management Science(COLMAS) College of Veterinary Medicine(COLVET), and College of Engineering (COLENG).

Population of the Study

The population of the study were selected staff (both teaching and non-teaching staff) across the ten colleges and centres in Federal University of Agriculture, Abeokuta.As at September 2019,information obtained on the number of staff academic planning unit, the total number teaching staff in the institution was 655 and non-teaching staff of 1273 across various colleges and center. Thus a total of 1928 staff

Sampling Procedure and Sampling Size

Simple random sampling techniques were used to select 131 staff (teaching and Non-teaching staff) across Colleges and Centres in the university.

Method of data collection

Primary data was used for this study. Data's was collected through administration of questionnaires. The questionnaire consists of open ended and closed ended questions designed to elicit specific responses for qualitative and quantitative analysis respectively. The questionnaires were administered purposeful to the sampled respondents.

Measurement of variables

A .Socio economic Characteristics of employees

Employees' personal characteristics will be identified and measured as follows;

Sex: measured nominally (Male=1 and Female=2)

Age: measured at using interval scale

Marital status: measured in nominal scale (Single=1, Married=2 Divorced=3),

Educational qualifications: measured in ordinal scale (Primary=1, Secondary=2, Tertiary (OND HND BSC/BA) =3, MSC/MA=4, and PHD=5)

Religion: measured at nominal scale (Islam=1, Christianity=2, Traditional=3)

Working experience: was measured at interval.

B. Ranking of preference for organic agricultural products:

The ranking of the preference for organic agricultural product was be measured using 8 point hedonic scale. The scale ranges from Dislike Extremely=1 , Dislike very much=2, Dislike Moderately =3, Dislike slightly=4, Like slightly=5, Like moderately=6, Like very much=7, and Like Extremely=8.

C. Preference for organic agricultural product over the inorganic agricultural products:

This was measured using a four point likert scale rating.4- point scale of Strongly Agree (SA) =4, Agree (A) =3, Disagree (D) =2, Strongly Disagree (SD) =1.Set of statement consisting of awareness, health and benefit and quality of organic agricultural product was presented to the respondents.

Method of Data Analysis

The data was classified, tabulated and summarized using descriptive measures such as percentages, frequency distribution, means and standard deviations. Also, inferential statistics that is chi square test and correlation coefficient test was used. Tables and graphs were used for presentation of findings.

IV RESULT

Socio economic characteristics of respondents (n=131)

This involves the analysis of various socio-economic characteristics of the respondents. Table 1 show that 61.1% were male while 38.9% were female. There are predominantly male staffs in the institution than female staff. Also, 11.5% of the respondents were within the age range of 21-30 years, 64.1% of them aged between 31-40 years, 17.6% aged between 41-50 years while 6.9% were within 51-60 years. This indicates that majority of the staff of the institution are still in their active age as shown by majority (64.1%) and supported by the mean age of 37.5 years. The table also shows that 15.3% of the respondents were single, 81.7% were married, and 0.8% was divorced while 2.3% was widows. Religion distribution of the respondent shows that 68.7% were Christians, 30.5% was Muslims while just 0.8% was Traditionalists. The educational qualification of the respondents; secondary school education (11.5%); tertiary (universities, polytechnics and colleges of education) (22.1%); M.Sc. (46.6) while Ph.D. (19.8 %). Majority (97.7%) of the respondents have working experience of less than 20 years with the institution. Finally, majority (77.9%) of the respondents surveyed were senior staff of the institution.

Table 1: Distribution of Socio-Economic Characteristics of Respondents (n=131)

Variable	Frequency (%)	Mean	Standard Deviation
Sex			
Male	80 (61.1)		
Female	51 (38.9)		
Age(years)		37.5	2.02
21-30	15 (11.5)		

31-40	84 (64.1)		
41-50	23 (17.6)		
51-60	9 (6.9)		
Marital status			
Single	20 (15.3)		
Married	107 (81.7)		
Divorced	1 (0.8)		
Widow	3 (2.3)		
Educational level			
Secondary school education	15 (11.5)		
Tertiary education	29 (22.1)		
M.Sc.	61 (46.6)		
Ph.D.	26 (19.8)		
Religion			
Islam	40 (30.5)		
Christianity	90 (68.7)		
Traditionalist	1 (0.8)		
Working Experience (years)		9.6	1.5
1-5	26 (19.8)		
6-10	50 (38.2)		
11-15	44 (33.6)		
16-20	8 (6.1)		
>20	3 (2.3)		
Position			

Junior staff	29 (22.1)
Senior staff	102 (77.9)

Organic agricultural product information

Awareness, Sources of awareness and willingness to pay for organic agricultural product on campus

Table 2 reveals that majority (96.9%) of the respondents are aware of organic agricultural products. This is expected because the institution is an agricultural university and the propagation of organic products should be spear headed from the university. Table 3 indicated that about 49.2% of the respondents were informed of the produce by organic farmers; 25.8% came to awareness of the produced through the college. Only 14.8% were informed through the FUNAAB radio. Also, Table 4 shows that majority 85.5% were willing to pay for organic agricultural products irrespective of the price. The internet is the least of all the sources of awareness of organic agricultural product from Table 5, this support the finding of Yesuf *et al*. (2018) that only few of respondents get to know among organic vegetable via the internet.

Table 2. Distribution of respondents by awareness of organic agricultural products on campus

Awareness	Frequency	Percentage
Yes	127	96.9
No	4	3.1
Total	131	100.0

Table 3. Distribution of respondents by source(s) of awareness of organic agricultural products

Source(s) of awareness	Frequency	Percentage
College	33	25.8
FUNAAB radio	19	14.8
Participant trained by WELP	7	5.5
Organic farmers	63	49.2
College and WELP Training	1	0.8
College and Organic farmers	1	0.8
Internet	3	2.3

Table 4. Distribution of respondents by willingness to pay for organic agricultural product irrespective of price

Willingness to pay	Frequency	Percentage
Yes	112	85.5
No	19	14.5
Total	131	100.0

Respondents Distribution by organic product(s) they have purchased and consumed

The table 2 below shows the various combinations of organic agricultural products that the respondents at one time or the other have purchased and consumed. The (Okra, Leafy vegetable, Cucumber, Tomato, Maize Yam and Chicken) and (Maize, yam and chicken) combination is the highest with 9.9% each. The information on table 2 shows that variant of organic agricultural products have been purchased and consumed which shows to a level the availability of those products to the respondents in the study area. The result affirms Dipeolu *et al*. (2009) that in the event of extensive cultivation of organic vegetable, there is a ready market in the south western part of Nigeria but more education should be given on the distinction between certified and non-certified organic food.

Table 5. Distribution of Respondents by organic product(s) they have purchased and consumed

Organic product(s)	Frequency (%)
Okra	2 (1.5)
Leafy vegetable	8 (6.1)
Cucumber	8(6.1)
Groundnut	1 (0.8)
Tomato	2 (1.5)
Orange	1 (0.8)
Maize	1 (0.8)
Yam	3 (2.3)
Poultry product(chicken)	1 (0.8)
Leafy vegetable ,Cucumber, Yam and Chicken	6(4.6)
Leafy vegetable ,Maize and Yam	12(9.2)
Leafy vegetable ,Cucumber, Maize and Yam	5(3.8)
Leafy vegetable, Groundnut and Maize	2(1.5)
Cucumber, Maize and Chicken	6(4.6)
Cucumber, Groundnut and Chicken	3(2.3)

Okra, Cucumber, and Chicken	8 (6.1)
Okra, Cucumber, Yam and Chicken	4(3.1)
Okra, Leafy vegetable, Cucumber, Tomato, Maize Yam and Chicken	13(9.9)
Tomato and Maize	3(2.3)
Leafy vegetable and cucumber	1(0.8)
Leafy vegetable ,cucumber, maize and chicken	3(2.3)
Leafy vegetable, maize, yam and chicken	6(4.6)
Cucumber, yam and chicken	5(3.8)
Leafy vegetable, cucumber, orange , maize and yam	2(1.5)
Leafy vegetable, cucumber, maize yam, and chicken	3(2.3)
Leafy vegetable, Groundnut, orange , maize and yam	2(1.5)
Okra, Groundnut and chicken	2(1.5)
Cucumber, groundnut, maize and yam	2(1.5)
Maize, yam and chicken	13(9.9)
Leafy vegetable, cucumber, groundnut, orange, maize, and yam	3(2.3)

Respondents ranking of preference for the organic products they have purchased and consumed

Table 6 below shows the ranking of organic products amongst the respondents based on the nine indicators on the products presented to them. Majority 67.2% indicated that they like the products very much based on food safety indicator; majority (51.1%) like the product very much based on health consciousness indicator; this supports the findings of Bonti and Yiridoe (2005) who reported that concern for human health and safety is a key factor that influences consumer preference for organic food. This is consistent with observed deterioration in human health over time and, therefore, motivates consumers to buy organic food as insurance and investment in health. While majority 54.2% like the product very much base on food quality. From the respondents ranking of the product on a 8 scale, it could be seen that only few percentage dislike the products from one indicator or the other ; for instance only 3.8% dislike the product based on price affordability while just 0.8% dislike extremely based on health consciousness. Also, it is shown that better taste ($\overline{X}$=7.02) was ranked highest among the indicators; followed by health consciousness ($\overline{X}$=6.89); Market availability ($\overline{X}$=6.41) was ranked the least among the indicators

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Table 6. Distribution of respondents by rank of preference for the organic products they have purchased and consumed

Indicator	Dislike Extremely	Dislike very much	Dislike Moderately	Dislike slightly	Like slightly	Like moderately	Like very much	Like Extremely	Mean $\overline{x}$	Standard deviation	Rank
Health consciousness	1(0.8)	-	1(0.8)	1(0.8)	10(7.6)	16(12.2)	67(51.1)	35(26.7)	6.89	1.08	2nd
Food Safety	-	-	1(0.8)	-	7(5.3)	19(14.4)	88(67.2)	16(12.2)	6.84	0.76	3rd
Food Quality	-	-	-	1(0.8)	5(3.8)	31(23.7)	71(54.2)	23(17.6)	6.84	0.78	3rd
Perishability	-	3(2.3)	0.8(1)	4(3.1)	6(4.6)	43(32.8)	54(41.2)	20(15.3)	6.50	1.18	6th
Price Affordability	-	-	5(3.8)	3(2.3)	13(9.9)	37(28.2)	56(42.7)	17(13.0)	6.43	1.14	7th
Market Availability	2(1.5)	-	4(3.1)	5(3.8)	17(13.0)	29(22.1)	45(34.4)	29(22.1)	6.41	1.42	8th
Convenience to Prepare	1(0.8)	-	3(2.3)	4(3.1)	13(9.9)	24(18.3)	56(42.7)	30(22.9)	6.62	1.26	5th
Better taste	-	-	-	1(0.8)	2(1.5)	24(18.3)	71(54.2)	33(25.2)	7.02	0.75	1st
Environmentally friendly	2(1.5)	1(0.8)	1(0.8)	1(0.8)	4(3.1)	25(19.1)	73(55.7)	24(18.3)	6.75	1.17	4th
Group Mean									6.70		

Distribution of respondents by perception on preference for organic agricultural product over inorganic agricultural products

The result in Table 7 shows consumers' perception on preference for organic agricultural product over inorganic agricultural products. Consumers prefer organic product because of environmental friendliness ($\overline{X}$=3.64), Nutritious ($\overline{X}$=3.55), free from synthetic chemical ($\overline{X}$=3.47), natural quality ($\overline{X}$=3.40) over the inorganic products. Only few (13.7%) strongly disagrees that there is no difference between the organic agricultural products and the inorganic/conventionally grown products. The result showed overall general positive response on perceived preference of organic product over inorganic agricultural product.

Table 7. Distribution of Consumers' Perception on preference for organic agricultural product over inorganic agricultural products

Statement	S.A	A	D	S.D	Mean	SD	Rank
	F (%)	F (%)	F (%)	F (%)			
Production of organic agricultural product is environmental friendly	89(67.9)	39(29.8)	1(0.8)	2(1.5)	3.64	0.58	1st
Organic agricultural product is more nutritious than chemically grown products	80(61.1)	44(33.6)	6(4.6)	1(0.8)	3.55	0.62	2nd
Organic agricultural product is free from any synthetic chemicals	67(51.1)	59(45.0)	5(3.8)	-	3.47	0.57	3rd
I prefer organic agricultural product because it is of better and natural quality	58(44.3)	67(51.1)	6(4.6)	-	3.40	0.58	4th
I do not see any difference between organic produce and chemically grown produce	36(27.5)	44(33.6)	33(25.2)	18(13.7)	2.75	1.01	11th
Any preference should not be given to organic produce	42(32.1)	60(45.8)	19(14.5)	10(7.6)	3.02	0.88	10th
I prefer inorganic products because organic product are expensive to purchase	51(38.9)	56(42.7)	14(10.7)	10(7.6)	3.13	0.89	9th
Organic products do not carry pesticides residues	58(44.3)	53(40.5)	13(9.9)	7(5.3)	3.24	0.84	6th
Organic product are rich in fibers and roughages than inorganic crops	49(37.4)	69(52.7)	7(5.3)	6(4.6)	3.23	0.75	7th
Organic products are grown according to government	54(41.2)	61(46.6)	14(10.7)	2(1.5)	3.27	0.71	5th

standards							
Organic products are Genetically Modified Organism free	48(36.6)	66(50.4)	15(11.5)	2(1.5)	3.22	0.71	8th
Organic product have a high quality taste than the conventional agricultural products	47(35.9)	72(55.0)	8(6.1)	4(3.1)	3.24	0.70	6th
Group Mean					3.26		

Factors influencing the preference for organic agricultural products over inorganic product among the respondents

The result in table 8 below shows the factors influencing the preference for organic agricultural products among the respondents, As shown, age is significant ($p<0.1$), Educational qualification is significant ($p<0.1$), working experiencing is significant ($p<0.1$) and willingness to pay for organic agricultural products is also significant ($p<0.1$), while the rest of the variables are insignificant to the preference of the respondents.

Table 8. Factors influencing the preference for organic agricultural products among the respondents

Variable	Coefficient	Standard error	t-value	p-value	Decision
Sex	0.008	0.064	0.094	0.925	Not Significant
Age	0.315	0.050	-3.154	0.002	**Significant**
Marital status	-0.009	0.075	-0.087	0.930	Not Significant
Educational qualification	0.344	0.042	3.319	0.001	**Significant**
Religion	-0.061	0.063	-0.741	0.460	Not Significant
Working experience	0.246	0.041	2.321	0.022	**Significant**
Position	0.031	0.101	0.271	0.787	Not Significant
Awareness of organic product on campus	-0.049	0.180	-0.570	0.570	Not Significant
Willingness to pay for organic product irrespective of price	0.165	0.085	1.978	0.050	**Significant**

Test of hypothesis

Chi-square test was used to test for the relationship between the respondents' socio economic characteristics and preference for organic agricultural product. The results shows that there is relationship between Age ($p<0.05$),

Educational qualification ($p<0.05$), Religion ($p<0.05$), working experience ($p<0.05$), position ($p<0.05$), and the preference for organic product in the study area. Thus, the null hypothesis of no significant relationship between socio economic characteristic of the preference for organic agricultural product was rejected.

Table 9: Test of hypothesis

Variable	$\chi 2$	Degree of freedom	p-value	Decision
Sex	11.57	3	0.83	Not Significant
Age	79.19	9	0.01	Significant
Marital Status	61.34	9	0.15	Not Significant
Educational Qualification	72.42	9	0.03	Significant
Religion	144.86	6	0.00	Significant
Working experience	101.30	15	0.01	Significant
Position	30.99	3	0.02	Significant

V CONCLUSION AND RECOMMENDATION

The study concluded that there is proper awareness of the product on the campus as shown by majority of the respondent indicating their awareness of the product and also the willingness to pay for the product as indicated by the respondents' shows that there is ready market available for the products.

Recommendation

From the findings of the study, the following recommendations are put forward;

1. Age being a factor, influenced the preference for the product due to health challenges that comes with old age; the health benefit of consuming the organic agricultural products should be more emphasized among aged people in various training and advertisement of the product organised by the University.
2. The willingness of the staff to pay for the product irrespective of the price should be explored as a means to create a larger market for the product on campus by the Directorate of university farms.

VI. REFERENCES

Adaobi, J., Nwankwo, P., Frank, O., Uche, R., & Gabriel, E. (2020). The Effect of Institutional Factors in Marketing of Agricultural Products by Cooperative Farmers, *9*(1). https://doi.org/10.5430/bmr.v9n1p43

Agegnehu, G., Srivastava, A. K., & Bird, M. I. (2017). The role of biochar and biochar-compost in improving soil quality and crop performance : A review. *Applied Soil Ecology*, *119*(April), 156–170. https://doi.org/10.1016/j.apsoil.2017.06.008

Alzahrani, F. A. (2020). Knowledge of and attitudes towards stem cells and their applications : A questionnaire-based cross-sectional study from King Abdulaziz university, *3*(1), 18–21. https://doi.org/10.5455/ajms.31

Atreya, K., Subedi, B. P., Ghimire, P. L., Journal, A. I., & No, P. (2020). Author ' s Complementary Copy A review on history of organic farming in the current changing context in Nepal Archives of Agriculture and Environmental Science.

Barad, R., Fletcher, E. K., & Hillbruner, C. (2020). Leveraging existing household survey data to map livelihoods in Nigeria. *World Development*, *126*, 104727. https://doi.org/10.1016/j.worlddev.2019.104727

Chandrashekar, H. M. (2020). PRODUCERS PARTICIPATORY APPROACH TOWARDS ORGANIC IN MYSORE DISTRICT, *VII*(26), 11–24.

Elemike, E. E., Uzoh, I. M., Onwudiwe, D. C., & Babalola, O. O. (2019). applied sciences The Role of Nanotechnology in the Fortification of Plant Nutrients and Improvement of Crop Production. *MDPI, Applied Sciences*, *4*, 1–32. https://doi.org/10.3390/app9030499

Jessop, A., Wilson, N., Bardecki, M., & Searcy, C. (2019). Corporate Environmental Disclosure in India : An Analysis of Multinational and Domestic Agrochemical Corporations, 8–10.

Journal, I., Doi, J., & Doi, A. (2020). No Title, *6*(9), 66–80. https://doi.org/10.46654/ij.24889849

M, R. M., & R, V. (2011). Consumer‟s preference towards organic food products. *Journal of Management and Science*, *1*(1), 19–23. https://doi.org/10.26524/jms.2013.3

Mdee, A., Ofori, A., Chasukwa, M., & Manda, S. (2020). Neither sustainable nor inclusive: a political economy of agricultural policy and livelihoods in Malawi, Tanzania and Zambia. *Journal of Peasant Studies*, *6150*. https://doi.org/10.1080/03066150.2019.1708724

Meek, D., & Anderson, C. R. (2019). Scale and the politics of the organic transition in Sikkim ,.

Mervin, R., & Velmurugan, R. (2013). CONSUMER ‟ S PREFERENCE TOWARDS ORGANIC FOOD, *3*(1), 19–23.

Migliorini, P. (2017). Converging and diverging principles and practices of organic agriculture regulations and agroecology . A review.

Morthen, F., & Analysis, B. (2020). Valuation of VOW ASA, 1–169.

Niggli, U., Baker, B. P., Rahmann, G., Cuoco, E., Möller, C., Hossain, S. T., … Qiao, Y. (2014). Technology Innovation Platf orm of IFOAM (TIPI) Organic Farming Research, (October).

Ogunleke, S. (2020). HOUSEHOLDS ’ CONSUMPTION AND QUALITY PERCEPTIONS OF LOCAL (OFADA) RICE IN SOUTH-WEST NIGERIA By : Ayodeji ’ Seun Ogunleke.

Owoeye, R. S., Toluwase, S. O. W., & Sekumade, A. B. (2017). Willingness to Pay for Organic Vegetable in Ado-Ekiti Metropolis , Ekiti State , Nigeria, *7*(4), 1–8. https://doi.org/10.9734/ARJA/2017/38250

Parajuli, S. (2020). Organic farming in Nepal : A viable option for food security and agricultural sustainability, *5*(2), 223–230.

Rana, J., & Paul, J. (2017). Consumer behavior and purchase intention for organic food: A review and research agenda. *Journal of Retailing and Consumer Services*, *38*(June), 157–165. https://doi.org/10.1016/j.jretconser.2017.06.004

Romero-Aranda, M. R., Jurado, O., & Cuartero, J. (2006). Silicon alleviates the deleterious salt effect on tomato plant growth by improving plant water status. *Journal of Plant Physiology*, *163*(8), 847–855. https://doi.org/10.1016/j.jplph.2005.05.010

Swami, S. (2020). Soil health management under organic production system, *8*(2), 330–339.

THE WTO AGREEMENT ON AGRICULTURE. (2019), (July).

Timsina, J. (2018). Can Organic Sources of Nutrients Increase Crop Yields to Meet Global Food Demand ?, 1–20. https://doi.org/10.3390/agronomy8100214

Zhang, J., Wang, J., & Zhou, X. (2019). Farm Machine Use and Pesticide Expenditure in Maize Production : Health and Environment Implications, 8–12.

