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## OVERVIEW ON ORGANIC PRODUCE AND THE POTENTIAL DEMAND IN ESWATINI (SWAZILAND)

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### Abstract

*Organic produce is a growing phenomenon that is booming in the global markets. Its hard entry into the market has sparked a new interest among consumers due to various reasons. In the current situation, the changing behavior and adoption of organic produce by the buyers in comparison to traditional marketing approach is alarming for traditional food growers and suppliers. This study aims to determine the socio-economic characteristics of buyers of organic food in Eswatini and also highlights their opinions and their willingness for organic foods. This study used primary data from a survey which was conducted through administering questionnaires to buyers. Primary data collected was analyzed through appropriate techniques. The results revealed that most buyers of organic produce are women (82.8%), middle aged respondents (56.3%) and respondents who earn a high salary (69.0%). Additionally, results revealed that income has a significant relationship to willingness to pay for organic produce while gender and age do not have a significant relationship to willingness to pay. Organic food buyers are also facing challenges about regular supply and fresh produce.*

*Keywords: Eswatini, Organic produce, demand, buyers, willingness to pay*



## INTRODUCTION

Organic farming as stated by the FAO, (1999) is “a holistic production management system which inspires and improve agro-ecosystem health condition, including biodiversity, biological cycles, and soil biological activity” [1]. It strictly excludes the use of fertilizers, herbicides or genetically modified organisms to improve the development of plants. Organic farming allows to grow as naturally and environmental friendly. It is possibly in order to obtain the healthy produce without diminishing the soil’s natural properties. The concept of organic farming is based on sustainability and development, as (Kristainsen, 2006) states that modern agriculture’s placement with the wider environmental drive has resulted in values that have a stronger environmental motivation [2]. Organic farming aims to ensure that the soil’s resources are not exhausted and all nutrients taken from production are swapped. The applications of manufactured chemicals are not acceptable in organic farming as these chemicals are harmful to the soil as well as health. There is a growing attention in organic farming products like fruits, meat, cereals and canned foods. Consumers are switching from the normal conventional produce to organic produce due to their various beliefs which is mostly that organic produce is a more better and healthier in comparison to traditional produce. This growing interest affects the demand causing a current effect on the supply and prices on organic and traditional farm produce.

### **Overview on globally organic produce:**

Organic food is food produced by using a set of agricultural practices in which no artificial fertilizers, hormones, pesticides, or herbicides are used. It uses strictly natural methods and no chemicals. The emergence of the growing organic food industry is attributed to soil sustainability and health reasons [3]. As there was increase in use of pesticides, herbicides and fertilizers farmers wanted to find an alternative that World serve a similar purpose to the chemicals but returned nutrients back to the soil. Both farmers and consumers believe that organic food is healthier than conventionally produced food because of the prohibited use of chemicals. According to Vogt (2007), organic farming started in Germany in the period between the end of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century [4]. It was initiated to produce healthier food with a high nutrient content while preserving the soil or minimizing its degradation. It is based in the law of return which essentially means that if nutrients are taken from the soil, they must be replaced to ensure that the soil retains its fertility. Pioneers of organic food realized that if organic material like crop residue and animal waste are composted, they work significantly better than chemical fertilizers forming a healthy soil eco system while producing the fresh and most healthy yield, Myers [5].

As much as organic farming is a common phenomenon, it is not widely practiced especially in the underdeveloped countries. According to (Organic world, 2022), only 71 514 583 hectares of the 48 million hectares of world's agricultural land is strictly for organic farming, this is only 1.6%. Most organic farming is practiced in the continents of Europe and Oceania and is least practiced in Africa [6]. According to Krylov et al. (2018) organic products are produced in 178 countries of the world, the global organic food market in 2016 was worth US\$89.7 billion, and the top producers and consumers of these organic products are Europe [7]. Continents like Africa and Asia produce mostly to sell in the European countries as there is little or no consumption in their own countries market. Currently, in order to export organic produce globally, certification is required that ensures that the products are produced under the conditions that are specified by standards set by the international federation of organic agriculture movements [8]. It is done to make sure that the produce being sold is 100% organic and has zero chemicals.

### Organic farming in Africa

According to the Parrott, (2006), the formal organic sector in Africa remains relatively underdeveloped and statistics concerning its status are often difficult to come [9]. Most of organic agricultural farming in Africa is subsistence farming. It is generally in small scale and started for the consumption of households or for local sale. It is also small scale due to lack of awareness, low income levels, lack of local organic standards and infrastructure of local market. In Africa, most of the farming land in the period between 2005-2006 was used for non-organic farming. Table 1 highlights the how less than a quarter of most farming land was used for organic farming.

Table 1: Africa: Main land use categories in organic farming [10]

Arable land (ha)	76 961
Share of arable crops of total organic land	8%
Permanent crops (ha)	298 598
Share of permanent crops of total organic land	29%
Permanent pastures (ha)	31 861
Share of permanent pasture of total organic land	3%
Certified land, use not known (ha)	618 477
Share of land with unknown use of total organic land	60%
Total land under organic management	1 025 898

(Source: FiBL-Survey 2005/ 2006)

In Africa organic land is practiced in 2 million hectares of agricultural land, it mostly used to grow permanent crops like olives, nuts, coffee, cocoa and medicinal plants and arable crops like sesame, cereals, oilseed and cotton [6]. It takes place in mainly two forms, smallholder groups which are individual farmers who have small scale farms and large farms under single ownerships. Organic farming records lowest production in Africa, this is mostly due to the fact that most or the organic produce is uncertified. Willer (2004) mentioned that the organic produce in agriculture is not certified and will remain so in the near future [11]. This means that there is an opportunity to develop and sustain a local market within African countries for uncertified products and to find alternative forms of standards and certification that will work specifically for the African countries. The table below shows the different types of certified organic products that are produced in various countries in Africa.

Table 2: Organic produce from Africa (by type and country)

Product / Produce	Countries
Fresh Vegetables	Egypt, Kenya, Madagascar, Malawi, Morocco, South Africa, Tunisia, Uganda, Zambia
Bananas	Cameroon, Ghana, Senegal, Uganda
Citrus Fruits, Grapes (including wine)	Egypt, Morocco, South Africa
Tropical fruits (fresh) Avocados, mangoes, pineapples, papaya etc.	Cameroon, Egypt, Ghana, Madagascar, Senegal, South Africa, Tanzania, Uganda
Dried Fruits	Algeria, Burkina Faso, Egypt, Madagascar, Morocco, Tanzania, Tunisia, Uganda
Coffee	Cameroon, Ethiopia, Kenya, Madagascar, Tanzania, Uganda
Tea	Tanzania, Uganda
Cocoa	Cameroon, Ghana, Madagascar, Tanzania, Uganda
Sugar	Madagascar, Mauritius,
Cotton	Benin, Egypt, Senegal, Tanzania, Uganda
Coconut Oil	Mozambique
Palm Oil	Ghana, Madagascar Tanzania
Olive Oil	Tunisia

Table 3: Organic produce from Africa (by type and country)

Organic produce from Africa (by type and country)	
Ground Nuts (peanuts)	Zambia
Tree Nuts (cashew, shea)	Kenya, Malawi, Morocco, Tanzania
Sesame	Burkina Faso, Uganda, Zambia, Zimbabwe
Herbs (culinary)	Egypt, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Morocco, Mozambique, South Africa, Tunisia, Zambia, Zimbabwe
Spices (culinary)	Cameroon, Egypt, Ethiopia, Madagascar, Malawi, Mozambique, South Africa, Tanzania, Uganda, Zimbabwe
Medicinal / Therapeutic Herbs and Spices	Egypt, Morocco, Namibia, Tunisia, Zambia
Essential Oils	Madagascar, Tanzania
Honey	Algeria, Malawi, Tanzania, Tunisia, Zambia
Other Forest Products	Uganda, Zambia, Zimbabwe
Cereals	Egypt

Source: <http://www.orgprints.org/516> [12]

Most of the organic farming that takes place in Africa is for exports, the market for organic produce is very small, as the most countries there have low income per capita. South Africa is one of the few countries with a reasonable demand for organic produce and various income levels are willing to pay for these organic produce, so their produce is for both local and international consumption. South Africa has 69175 hectares of organic land and about 250 organic farms [13].

### Demand for organic produce

Organic food is relatively widely found in most shops and records a high number of sales but it has a very small market share throughout the world. According to Thompson (2000), the market share is low because most sales happen outside of shops where they can be tracked; they are also not barcoded to differentiate them from the conventional produce [14]. This makes it difficult to calculate accurate figures for the retail sales or the market share. From the table below we can see that the United States constitutes the single largest market for organic foods followed by Germany and Japan, the reason for this may be organic food commands a higher price as compared to conventional food, so higher sales will be observed in countries with high income. The table also shows that countries with a high gross national product also have a higher per capita expenditure on organic food; this means that countries with higher income afford to spend money on organic food.

Rouse (2020), economic outcome is an economy dependency on the marketing, pricing and selling of produce and facilities based on results of producer for customers [15]. It is the results of economic activity that is probable but not certain to happen, it is more of an estimate than a real occurrence. There are several factors influencing economic outcomes in terms of price, demand and supply. According to Schmiegel (1993), in the long run income elasticity of demand is low the markets for goods will lose the significance in relative terms. The current elasticity of demand can be used to forecast future price changes as if elasticity is low the price of the product will ultimately become low too [16]. Schmiegel (1993), technical progress in commodity production reduces production costs and strengthens competition and it applies a long-term downward pressure on commodity price [16]. According to Mankiw (2008), demand is how much buyers are willing to buy and how much they can afford to buy produce [17]. Demand is volatile and it is affected by a number of factors like income, prices of related goods, taste, expectations and the number of buyers [17]. Mankiw (2008) also mentioned that willingness to pay is the maximum price a buyer is willing to pay for a product [17].

Willingness to pay is a measure of the maximum amount of money that a consumer is willing to pay for a good or service. It gives the producer an idea of how much to charge for a product and to be able to predict the demand for the product. Mankiw (2008) concluded that willingness to pay is equal to the price in the demand curve, the price at a specific quantity in the demand curve is equal to the willingness to pay of the consumer so the demand curve can essentially be the willingness to pay curve [17]. There are various methods that can be used to measure willingness to pay. Breidert *et al.* (2021) classify them into two methods revealed preference methods which is data obtained from actual data derived from experiments or market data and stated preference methods which is data derived from individuals like surveys [18]. Revealed preference methods require large sets of historical market data, which makes them less popular because accurate data is difficult to come by. However, they are not limited to historical data but they can also be done through field or laboratory experiments.

Breidert *et al.* (2021) also reported that stated preference methods are the most used mostly for the reason that they are cost effective, they include surveys both direct and indirect [18]. They require a lot of time to collect the primary data because individual respondents are surveyed at a time. Bateman *et al.* (2002) explain that a stated preference method that is used is the contingent valuation method, which is a survey based economic technique used to obtain preferences of respondents in monetary values [19]. It provides data in terms of willingness to pay and willingness to accept compensation. It works better when valuing the provision of goods sequentially for programs with more than one attribute.

In a previous study done by Canavari and Olson (2007) consumers are willing to pay more money for organic produce are those that earn a high income and are regular organic produce buyers [20]. Most of them do not mind paying a higher price premium because they can afford it. Regular organic food buyers are willing to pay more because they are used to consuming these products so a higher price premium is more of a payment for the convenience. Most studies have found both positive and negative relationships between socio-economic characteristics. The results of research in previous studies have conflicting results as in some studies socio-economic characteristics do have a relationship with the preference and willingness to pay while others are conflicting [21]. This may be due to the different study areas and different characteristics of people. Hughner *et al.* (2007)'s study also concluded that the reasons or motives for buying organic produce include the belief that they are healthier than most conventional foods, this is because of the use of strictly natural inputs [21]. Another reason cited by the study is curiosity, buyers are interested in trying new things and testing out the difference between organic and conventional products. Better taste of organic food is another reason why buyers prefer organic food, they believe that organic food tastes better or more natural than conventional food. Lastly another reason why buyers demand organic produce is food safety, organic products are believed to be free from any artificial additives or preservatives which conventional products are packed with. The most common reason for not buying organic produce was the low stock or unavailability of the produce, this discouraged people to buy it because there is no consistency and they prefer buying products they know will always be available.

Organic farming in Eswatini is slowly becoming more familiar, according to the Training center for organic farming [22]. Agencies like the Africa Cooperative Action Trust run research centers in organic farming and organizations also organize training programmes for smallholder farmers and organizations working on organic farming in Eswatini. They actively involve farmers in collecting information on organic produce. The enough information helps the farmers start with their organic farming. Information on organic agriculture farming in Eswatini is difficult to come by and a few, if not enough studies have been conducted and completed on organic farming.

There is a rising demand for organic food attributed to environmental, food safety, soil preservation and benefits of producing organic produce. As mentioned by (Commission of the European Communities, 2004), "management practices generally used by organic farmers such as growing catch crops to reduce nitrate leaching, wider and more varied crop rotations, and mixed grazing to reduce mono-specific overgrazing, all help to protect the soil. Increasing supply of organic produce will result in changes in buying patterns of consumers [23]. In the



current scenario, the changing behavior and adoption of organic produce by the buyers in comparison to traditional marketing approach is alarming for traditional food growers and suppliers to maintain the balance. This is a problem in that it changes demand directly linked to change in supply, which in turn affects the prices of the goods. Prices may reduce significantly as many suppliers may enter in the new markets making supply abundant and consumers spoilt for choice or as more consumers are buying organic food, prices of these products may sky rocket as producers may want to take advantage and make as much profits while the trend is ongoing, and since only a few farmers are well versed in growing organic produce there might not be much competition and supplier may take advantage and charge exorbitant prices. The above-mentioned possibilities will cause the inefficient allocation of good and services or market failure. Therefore, it is important to analyze these changes to find out the characteristics of buyers, opinions, demand patterns for these organic products and their impression and severity in order to make better economic choices like level of supply and pricing. Further, there is need to ascertain whether consumers are willing to pay for organic products. This information will be used by farmers to make better marketing decisions and by policy makers to make policies that will make sure that the market forces adjust prices and there is no market failure.

#### **METHODOLOGY:**

This study is a quantitative research that explores the characteristics of organic food buyers, their opinions on organic food and their willingness to pay for organic food. As Wiersma (2009) explains research questions that are concerned with the interrelations among variables, the predictability of certain outcomes, and the comparison of specific groups are likely to require for quantitative research designs [24]. It is guided by two questions; who are the buyers and what are their opinions on organic produce. The study is also mentioned an overview of international publications and an analysis on implications. The research is a quantitative research because its core thesis is about the amount of change in the buying of conventional food to organic food, and the socio-economic status of the buyers of organic produce. Quantitative research is research that is analyzed by using numbers or statistics and it is used to quantify the problem by way of generating numerical data or data that can be transformed into usable statistics. The research design that is used in this study is the descriptive study design. The objectives were achieved through the collection of primary data in the form of a survey where questions were asked to a group of respondents in the form of a questionnaire. The study was conducted in Mbabane which is under the Hhohho region in the Kingdom of Eswatini. It is in the north western part of the country and it also the capital city. It has a



population of about 70 000 people which are about 6% of the country's population (integrated development plan, 2019 - 2024)

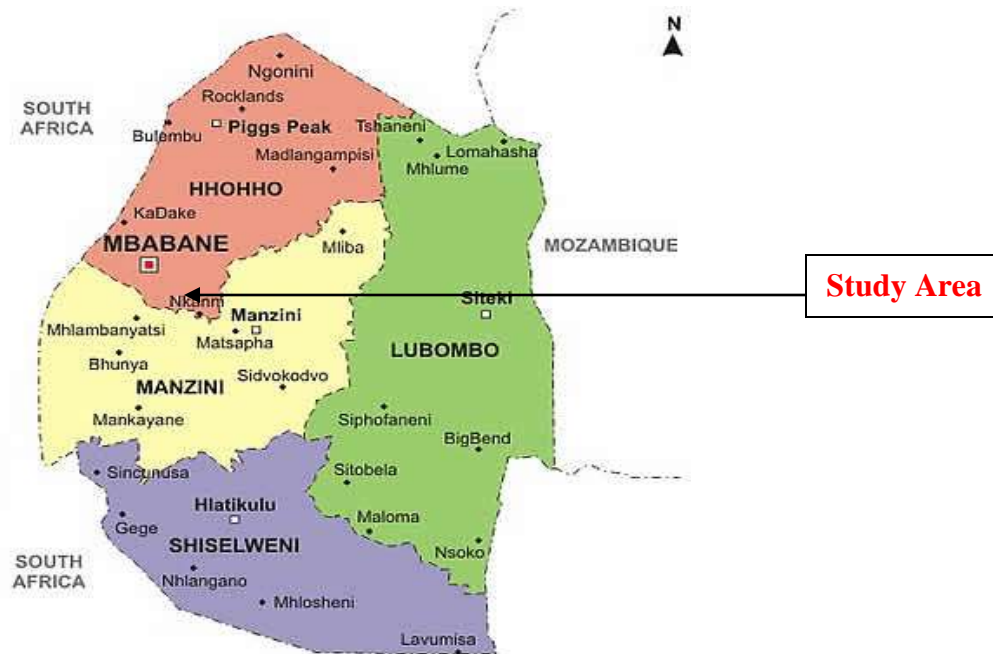


Figure 1: Geographical map of Eswatini

Source: Map of Eswatini from google.

The figure above shows the geographical map of Eswatini and the arrow points to the exact research or study area which is the city of Mbabane in the Hhohho region, Eswatini (Swaziland).

### Sampling method and data collection

The purposive sampling method was used for the collection of data from a subset of the population. Wiersma (2009) defines the target population for a survey as the entire set of units for which the survey data are to be used to make inferences [24]. Thus, the target population defines those units for which the findings of the survey are meant to generalize. Target populations must be specifically defined, the definition determines whether sampled cases are eligible or ineligible for the survey. The geographic and temporal characteristics of the target population need to be delineated, as well as types of units being included. The target populations for this study were people who buy organic produce whether fresh, canned or processed in Eswatini, however the accessible population which is the population from which the results of these study are based on are people who live in Mbabane, Eswatini that purchase organic produce. A questionnaire was designed to provide the necessary data according to the

objectives of the study. Questionnaires were made to be as brief as possible and used general terms that can be understood with minimal education. Closed format questions were used which according to Kabir (2016) are questions which respondents are required to give their answers based on presented options, they cannot come up with their own [25]. Questionnaires were checked for validity through face validity by a lecturer in the department of agricultural economics. The sample size is calculated using the Glen, 1992 [26-27]:  $n = \frac{N}{[1+N(e)^2]}$ ,

Where:

n= sample size

N -= population size of Mbabane

e = margin of error

Sample Size ( n ) at 90% confidence level and a 10% margin of error.

Sample Size ( n ) =  $70000 / [1+70000 (0.1)^2]$  = 99.8.

The estimated sample size (n) is 100 and thus, 100 questionnaires were distributed to buyers among three retail shops which sell organic produce; Picknpay Mbabane, Woolworth's food Mbabane, and Spar Mbabane. These were found through a telephonic and face to face survey of buyers of organic produce. First, permission was requested from the shop managers to conduct the survey in their shops. Consumers or sample units were approached as they were shopping in the organic products section in the shop and request to participation in the research survey. Some were able to fill out the questionnaire on the spot while others requested to leave the questionnaires in the various shops after they had filled them out. However, only 87 questionnaires were completely filled.

## Data analysis

To achieve the research objectives, completed questionnaires were collected, and entered in to the computer in preparation for analysis. Both quantitative and qualitative data were collected. Quantitative data variables collected were the ages, income range and price consumers are willing to pay for specific organic foods. Qualitative data collected included the opinions of buyers on the organic produce, the factors that persuade them to buy it and the advantages of buying organic food. Descriptive statistics were used to summarize the results of the socio-economic characteristics of respondents. The results were presented in tables for the different socio-economic variables, frequency and percentages were used to analyze the data.

To identify the determinants of consumers' willingness to pay for the organic products in the study area, a binary logit model was used. It only consist data coded as 1 or 0. The aim of binary logistic regression is to find the model which describes the relationship between

characteristics of dependent variables and a set of independent variables. It requires the dependent variables to be binary and each observation to be independent [28]. Following Emukule, Ngigi and Guliye (2011), the binary logistic regression model is expressed mathematically as follows [28]:

$$Y = \sum_{i=1}^n \alpha_i X_i + \varepsilon_i \dots \dots \dots (1)$$

Given that the binary  $\ln Y = \ln \left\{ \frac{P(y=1)}{1-p(y=1)} \right\}$ , therefore

$$\ln \left\{ \frac{P(y=1)}{1-p(y=1)} \right\} = \alpha_0 + \sum_{i=1}^n \alpha_i X_i \dots \dots \dots (2)$$

Where P is the probability that Y = 1 if the consumer is willing to pay for the organic product and 0=otherwise, and  $X_i$  = explanatory variables that include both dichotomous and continuous variables. Empirically equation 2 can be expressed as follows;

$$WTP = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \varepsilon_i \dots \dots \dots (3)$$

Where Y = binary dependent variable of Willingness to pay for organic products (1 = yes, 0 = otherwise),  $X_1$  = Gender (0 = male, 1 = female),  $X_2$  = whether consumer has knowledge about organic products (0 = no, 1= yes),  $X_3$  = age of the consumer (years),  $X_4$  = incomes of the consumer (Emalangeni).

**RESULTS AND DISCUSSION:**

A survey was done conducted and a total number of 100 questionnaires were administered, out of the 100 administered 5 of them had some data which was not filled in, and 8 of them had not been returned to the retail shop, meaning the total usable questionnaires were 87.

**Socio-economic characteristics of organic food buyers**

Data presented in the table 1 below show the socio-economic characteristics of the sampled organic food buyers used in the study.

The results of the survey as per the table below show that only 17.2% of males and 82.8% of women buy organic produce. This means that most buyers of organic produce are female. The table also shows that the most common age group that buys organic produce is the 31\_40 age group as more than half (56.3%) of the respondents were found to be from that age group. Income is also proven to be a factor that contributes to the decision of buying organic food. Lower earning respondents were on a 2.3% and those who mostly buy the produce earn a significantly higher salary. As the table shows, respondents who buy organic food earn more than E5000.

Table 4: Socio-economic characteristics of respondents

Socio – demographic characteristics	Category	Number of respondents	Percentage
Gender	Male	15	17.2
	Female	72	82.8
Age	< 20	4	4.6
	21-30	30	34.4
	31-40	49	56.3
	> 40	4	4.6
Mean age		31.89	
Standard deviation		5.75	
Monthly income	< E100	02	2.3
	E1000-E5000	25	28.7
	> E5000	60	69.0
Mean income		7813.22	
Standard Deviation		5668.08	

### Organic food purchasing behaviour of buyers

The table below shows the purchasing behaviour of the respondents:

Table 5: Summary statistics for food purchasing behaviour

Variable	Response	Organic food purchasing	
		Frequency	Percentage
<b>Buyers of organic food</b>	Yes	87	100
Purchase frequency	Once a week	8	9.2
	Twice a week	3	3.4
	Daily	0	0.0
	Monthly	31	35.6
	Other	45	51.7
Buyers Preferred location	Woolworths	33	37.9
	Pick n pay	14	16.1
	Spar	29	33.3
	Other	11	12.6

### Opinions of buyers on organic food

For the past few years, the sales for organic produce have been increasing rapidly as more and more people are discovering its benefits. There are many reasons that justify why people are suddenly interested in buying organic produce. The sample population was asked to give reason as to why they buy organic produce, able shows a breakdown of the reasons why buyers prefer organic food.

Table 6: Summary statistics on reasons for buying organic produce  
(frequency of yes responses)

Variable	Description	Frequency	Percentage
Nutrition	Organic food has a higher nutritional value compared to conventional	74	85.1%
Taste	Organic food tastes better than conventional food	15	17.2%
Price/Standard	Organic food is cheaper than conventional food	2	2.2%
Prescription	Organic food was medically prescribed	10	11.5%
Pesticides	Organic food has less pesticides	32	36.7%
Convenience	Organic food is easier to find than conventional food	1	1.1%

The above Table 6 shows the reasons why respondents purchase organic produce. The most common or shared reason is believe that it has higher nutritional value compared to conventional or non-organic food. The least common reason for buying organic produce is the convenience, only 1.1% of the respondents buy organic food because it is easier to find in the shops.

As much as it is a fact that organic produce demands a higher price premium as compared to conventional food, the increasing demand for this produce is resulting in a significant decrease in prices. There are more farmers venturing into organic farming and this means that supply is ample.

In Eswatini, there are quite a few suppliers of organic food and most of the organic produce is exported to neighboring countries. More than half of the citizens live below the poverty line so there is not much demand from them as they cannot afford the prices of these products hence the exports. However, some of the citizens who do not afford to buy from retail stores resort to growing their own organic produces in their subsistence farms.

Table 7: Preference of organic food

Type of preferred food	Frequency	Percentage
1. Fresh produce	49	56%
2. Canned products	5	6%
3. Processed products	9	10%
4. Both 1 & 2	3	3%
5. Both 1 & 3	12	14%
6. Both 2 & 3	5	6%
7. All (1,2,3)	4	5%

Table 7 shows the type of organic food buyers prefer organic food to buy. The survey showed that most buyers in Mbabane prefer buying fresh produce as 56% of respondent bought

it. Some buyers prefer buying a combination of organic foods instead of one specific type of food. 14% of the respondents preferred buying both fresh produce and processed products.

Table 8: Problems or challenges

Experienced challenges	Frequency	Percentage
Yes	81	93%
No	6	7%

Table 8 shows the problems that organic food buyers encountered while buying the organic food, the results show that 93% of buyers experienced various problems when buying organic food, the problems are discussed further in the table below.

Table 9: Problems experienced

Problem	Frequency	Percentage
1.Low stock	9	11%
2.Very expensive	19	23%
3.No variety	11	14%
4.Problem 1 & 2	4	5%
5.Problem 1 & 3	31	38%
6.Problem 2 & 3	7	9%
7.Problem 1, 2 & 3	0	0%
Total	81	

The table 9 explains the problems or challenges faced by organic food buyers. Some buyers experienced the problem of unavailability of produce or low stock, 11% of respondents experienced this problem. The most common problem encountered by the respondents was both low stock and lack of variety or choice of products to buy from. 36% of the respondents experienced these problems.

Table 10: Willingness to pay more for organic produce

Willingness to pay more	Frequency	Percentage
Yes	73	84%
No	14	16%

The table 10 shows the frequency of respondents that are willing to pay more for organic produce. The results show that 67 of the 87 respondents were willing to pay a higher price premium for food if it is organic.

Table 11: Importance of Gender, Age and Income on willingness to pay more money for organic produce.

Socio-Economic Factor	Yes (%)	No (%)	Total
<b>Gender</b>			
Male	13 (86.7)	2 (13.3)	15
Female	60 (83.3%)	12 (16.7)	72
<b>Age Group</b>			
< 31	24 (70.6)	10 (29.4)	34
31- 40	47 (95.9)	02 (04.1)	49
> 40	03 (75.0)	01 (25.0)	04
<b>Income Group</b>			
< 1000	00	02 (100.0)	02
1000 - 5000	15 (60.0)	10 (40.0)	25
>5000	59 (98.3)	01 (01.7)	60

The table 11 clearly indicates that gender, age and income have significant role on willingness to pay more money for organic produce than conventional food.

Table 12: Gender and knowledge about the organic produce

Gender	Knowledge		Total
	No	Yes	
Male	03 (20.0)	12 (80.0)	15
Female	13 (18.1)	59 (81.9)	72
Total	16 (100.0)	71 (100.0)	87

The table 12 indicates that females have more knowledge about the organic produce in comparison to male.

Table 13: Determinants of willingness to pay for organic products

Logit model	Coefficient	Std. error	z-value	p-value
<b>Variable</b>				
Gender (0=Male, 1=Female)	-1.041788	1.03539	-1.01	0.314
Knowledge (0 = No, 1= yes)	2.436044***	0.784273	3.11	0.002
Age (Years)	-0.0987951**	0.042867	-2.30	0.021
Incomes (Emalangeni)	0.0006355***	0.000216	2.94	0.003

Number of obs = 87

Wald  $\chi^2(4)$  = 23.91

Prob >  $\chi^2$  = 0.0001

Log likelihood = -27.30403



Marginal Effects After logit	Marginal effects (dy/dx)	Std. error	z-value	p-value
Gender (0=male, 1=female)	-0.0376647	0.03253	-1.16	0.247
Knowledge (0 = No, 1= yes)	0.2458006*	0.14348	1.71	0.087
Age (Years)	-0.0047111**	0.00235	-2.01	0.045
Incomes (Emalangeneni)	0.0000303***	0.00001	2.77	0.006

(\*) dy/dx is for discrete change of dummy variable from 0 to 1

Table 13...

Note: \*\*\*, \*\*, \* represents significance at 1% , 5% and 10% level, respectively.

The logit model results presented in table 13 indicate that the buyers who have knowledge about organic products are more likely willing to pay for the products since the variable related to knowledge is positively related to the binary dependent variable of either the farmer is will to pay or not will to pay. However, older buyers are less likely to pay for organic products since the variable related to age of the buyer had a negative and significant relationship with buyers' willingness to pay for such products. The more income the higher the probability that the farmers' willingness to pay for the organic product.

## SUMMARY

This study was conducted in the capital city of Eswatini, Mbabane which is in the Hhohho region. The study engaged organic food buyers in that region to fulfill its objectives. There were three objectives for the study, the first one being to identify the socio demographic characteristics of organic food buyers, the second was to study the opinions of buyers which includes; the challenges and advantages of buying organic food and lastly to study the preference and willingness to pay for organic products in the study area by buyers. The collection of data was implemented using primary data from questionnaires.

The socio-economic characteristics of organic food buyers were determined in the study area. This was achieved through descriptive statistics, frequencies and percentages the results revealed that most organic food buyers are women as 82.8% of the respondents were female. The majority of the buyers were between the ages of 31-40 years old and 68.9% of them earned above E5000.

The study also showed that the most common reason why buyers prefer organic food is that it has a higher nutritional value compared to conventional food, 85.1% of the buyers cited this reason for their purchase. Other reasons included better taste, cheaper price, medical prescription and convenience to buy. The study also reported that the least preferred type of

organic product are the canned products as only 3% of the respondents usually opt for them. 81 of the 87 respondents reported to have encountered challenges when buying organic produce, these problems included low stock or availability of products, no variety or choice of products and high prices of the produce. Some respondents reported to have encountered more than one problem.

A further analysis of the data collected was done through the use of STATA which is a statistical packaging software to run a logit model and results indicate that age of the buyer, buyers knowledge about organic product, and monthly incomes earned by the consumer significantly influence buyer's probability to willingly pay for organic product.

## **CONCLUDING REMARKS**

### **Conclusions**

The organic food market is still relatively new in Eswatini but more and more buyers are warming up to it, it has a potential to thrive and be the most demanded type of products in the country. While buyers are showing interest in buying organic produce, they still face a number of challenges. Determinants of consumer's willingness to pay for organic products in the study area included age of the consumer, knowledge about organic products and amount of incomes the consumer earn. Therefore companies, organizations and individuals promoting organic products should target young people, endowed with some knowledge related to organic products and with relatively more purchasing power enough to afford buy these branded organic products. Further to widen their markets, companies/organizations and individuals selling organic products need to create awareness of the benefits of organic products.

### **Limitations & Further Studies**

The present study was limited by the availability of secondary information or literature related to the study, as most of the data available was either old or not applicable to Eswatini. The timing of the study was also limiting because it was in the middle of the covid pandemic and most organic food buyers and suppliers were reluctant to take part in the research study actively. Hence, the researchers had to put more effort to convince the participants for the collection of information. As a result, the population sample was limited and the results could not be more generalized across the board. Further studies which cover even more communities and population are required to understand the deep-lying patterns and to identify any outlier perspectives.

## Recommendations

Suppliers should develop the system where they can track their stock availability in the stores, so that they can restock it in time to avoid situations where the produce is in demand but there is no available fresh produce.

Information about the advantages of organic produce can be made available in stores and also social media campaigns to increase consumer awareness especially among males and the older age group of above 40 years as they showed the least interest or demand for organic produce. If more farmers start producing organic products, they can bridge the gap between high demand and low supply. Farmers can produce more products to maintain the supply, freshness and price of the produce. Suppliers can also target low income earners; low-income earners who are interested in organic produce but cannot afford it due knowledge and price.

Results also indirectly indicate that Government should also intervene through trainings on how to produce, market, standardize and certify organic produce as there is information asymmetry in the organic food market. Producers or suppliers have no information on the market yet, and there is a huge gap between the demand and the supply of these organic products. Government can also intervene through offering economic incentives like subsidies to encourage more farmers to venture into organic farming to increase the organic food supply.

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