

CONSUMERS' PERCEPTION AND WILLINGNESS TO PAY FOR ORGANIC TOMATOES IN OFORIKROM MUNICIPAL, ASHANTI, GHANA

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Abstract: *Although conventional tomatoes are often preferred by consumers, organic tomatoes are thought to be safer and healthier. This is because some customers do not fully comprehend the advantages of organic tomatoes. The purpose of this study was to investigate how customers perceive and are willing to pay for organic tomatoes. 399 systematically chosen respondents provided the data, which was collected. The data were analyzed using descriptive and inferential statistics such as the Perception Index, Contingent Valuation Method, and Tobit Regression Model. The findings indicated that the majority of respondents were familiar with organic tomatoes. A perception rating of 1.24 indicates that respondents had a favorable opinion of organic tomatoes. Organic tomato buyers were willing to spend at least GHC 9.63 per kilo. Consumers' willingness to pay for organic tomatoes was influenced by their view of the health benefits, their level of education, their income, and their knowledge of and familiarity with organic tomatoes. As a result, the study advises producers or farmers to inform their customers about the health advantages of organic tomatoes and to focus on consumers with high incomes and educational levels since these factors greatly influenced their willingness to pay.*

Keywords: *consumers' perception; organic tomato; willingness to pay*
(JEL code: Q13)

INTRODUCTION

In wealthy nations, there has been a dramatic rise in demand for organic fruits and vegetables over the past 20 years (Owusu & Anifori, 2013). The fact that organic foods typically contain higher quantities of specific nutrients, lower levels of pesticides and herbicides, and may have positive health effects for consumers, can be related to the rising trend in demand (Crinnion, 2010). According to reports, consumers' evolving tastes, preferences, and perceptions of food risks and environmental issues are driving the continued development of agriculture, and production systems must adapt to keep up with the changing trends (Skreli et al., 2017). Tomatoes that are organic are generally thought to be healthier, tastier, and safer. Mostly because of its health advantages, it is regarded as the vegetable that people eat the most globally. Because it generates revenue for the poor and the nation as a whole, tomato production has a high marginal return and benefits rural, peri-urban, and urban groups in the nation (Coulibaly et al., 2011). As a result, it helps to reduce poverty.

The recent rise in awareness of organic tomatoes has increased consumer knowledge of environmental issues in affluent economies. The low amount of domestic consumption can be explained in a few different ways. The lack of knowledge among consumers regarding the attributes and distinctions between conventional and organic tomatoes has been the first problem. Numerous studies have found that growing organic tomatoes in a greenhouse is easier than growing them outdoors because it reduces the risk of exposure to pests and diseases, makes it simple to control weeds and the microclimate, protects plants from extreme weather like drought and storms and strong winds, makes better use of available resources, and extends the growing season (Mihov & Tringovska, 2010).

The majority of customers, however, prefer to buy and consume either the traditional local tomatoes grown in an open field or imported tomatoes. Customers frequently have no idea where tomatoes were grown—whether locally or abroad—or what kinds of agrochemicals were employed (Lendel Kade Narine et al., 2013). The effects on consumer health are more severe as a result. On the other hand, taking

into account how farmers will be compensated is necessary to balance the advantages of organic tomatoes for customers. Alternative protected systems and organic farming methods alter the quality of farmers' products while gradually raising production costs (Lendel Kade Narine et al., 2013). Improved tomato producing technology are primarily to blame for this. In fact, there are other factors to consider in addition to manufacturing, such as the marketability of such products and their ability to attract customers. Examining consumer willingness to pay for organic tomatoes and perceptions of organic tomatoes is crucial to prevent the issue of needless tomato waste and associated costs to producers.

Many studies have been done on how consumers behave when purchasing agricultural products like fresh-cut products, green products, organic foods, vegetable oils, and fresh vegetables, but few have examined how consumers perceive and are willing to pay more for tomatoes from a food safety perspective (Rezai et al., 2013). It is unclear how consumers perceive and are willing to pay more for organic vegetables than for conventional vegetables. The purpose of this study is to investigate consumers' perceptions of organic tomatoes, their knowledge of them, whether they are willing to pay for them, how much they are willing to pay, and the factors that affect their decision to do so.

MATERIALS AND METHODS

The Oforikrom Municipal Assembly is the subject of this investigation. The municipal is one of the Ashanti region's 43 district assembly and is regarded as one of the most employment-focused districts. Bosomtwe district assembly to the east, Asokwa municipal assembly to the south-west, Asokore Mampong to the north, and Kumasi metropolitan assembly to the west all share borders with the Municipal. According to the 2010 population and housing census report from the Ghana Statistical Service, the municipal population was 303,016 with a 5.4% annual growth rate. Based on the 2010 population and housing census, the anticipated population for the year 2020 is 375,651, with 50.2% men and 48.8% women. The segmentation of the Municipal includes twenty (20) communities.

The Oforikrom Municipal was specifically chosen because of the diversity of income levels and the citizens' involvement in farming and trading. The appropriate place for this study is Oforikrom Municipal because of its international character. The sample size determined using Yamane's formula was 399 respondents. Based on income level and economic activity, a purposeful selection technique was utilized to choose 8 communities from the total of 20 in the Oforikrom Municipal Assembly. In the chosen 8 communities of Oforikrom Municipal, Bomso (39), Ayiyga (45), Boadi (50), Oforikrom (60), Anloga (55), Ayeduase (48), Kotei (55) and KNUST (47) were interviewed using a systematic random sampling technique, which involved interviewing one person from every two households. Both primary and secondary sources were used to acquire the data. The primary data was collected using an open-ended and closed-ended structured questionnaire administered during an in-person interview.

SPSS (statistical software for social science) and Microsoft Excel were used to examine the data. Socioeconomic traits and customers' awareness and knowledge of organic tomatoes were examined using descriptive statistics. To gauge consumer knowledge of organic tomatoes, a nominal scale of (Yes=1 and No=2) was used. The results analysis employed frequency and percentage.

Analysis of consumers' perception of organic tomatoes

The perception index of customers toward organic tomatoes was calculated using a three-point Likert scale (1=agree, 2=neutral, and 3=disagree). On a three-point Likert scale, consumers were asked to select whether they agreed or disagreed with various claims made about organic vegetables. To make it easier to grasp, the perception was broken down into categories including health, nutrition, economy, and environment. Using the perception index and mean score model for ranking of individual perception scores, it is possible to simulate the customers' perception of organic tomatoes.

Analysis of consumer willingness to pay for organic tomatoes

The readiness of consumers to pay a premium for organic tomatoes and, if so, how much, was assessed using the contingent valuation method (CVM). A base price of Ghc 9.00 was thus established, with the lowest bid being Ghc 5.00 and the highest being Ghc 12.00. Respondents were tested using discrete choice questions, which are statistically referred to as discrete dependent variables. Questions with discrete choices came in the form of Yes/Yes, No/No, No/Yes, and Yes/No statements. The willingness of consumers to pay the base price, the lowest bid, or the maximum bid was questioned.

$$\frac{\{(\sum fx_1 * 1) + (\sum fx_2 * 2) + (\sum fx_3 * 3)\}}{X}$$

Where fx_1 to fx_3 represents the respondents for each category and X is the total number of respondents.

$$\frac{m_1 + m_2 + m_3 + m_4}{M}$$

Whereby m_1 to m_4 represents the three perception themes and M is the number of perception statements.

Consumers' willingness to pay a premium for organic tomatoes

Socio-economic factors determine how much consumers in Oforikrom Municipal are ready to spend for organic tomatoes. Due to the nature of the dependent variable, tobit regression was utilized. The following empirical description of the Tobit regression model is as follows:

$$WTPOT = \beta_0 + \beta_1 Age + \beta_3 Gender + \beta_3 HHS + \beta_4 Edu + \beta_5 HP + \beta_6 NP + \beta_7 EP + \beta_8 Y + \beta_9 Attrib + U$$

Where WTPOT denotes consumers willing to pay for organic tomatoes, Age represents the age of the respondent, Sex represents the sex of the respondent (1 if female, 0 if male), HHS represent the household size of the respondent, Edu represents the educational level of the respondent, HP represents the health perception of organic tomatoes, NP represents the nutritional perception of organic tomatoes, EP represents the economic perception of organic tomatoes, Y represents the monthly average income of the consumer, Attrib represents the attributes of organic tomatoes and U denotes the error term. α_0 denotes the constant term and $\beta_1 \dots \beta_9$ are the coefficient of the postulated explanatory variables. The expected signs of the coefficients of the explanatory variables are in the table below.

Table 1. Description of variables for the Logistic regression model

Variables	Description	Expected Sign
Age	Years	-/+
Gender	1 if female, 0 if male	-/+
Household size	Number of people in the household	-/+
Education	Number of years in school	-/+
Health perception	Perception about organic tomatoes being healthier (1 if the respondent agrees, 0 if otherwise)	-/+
Nutritional perception	Perception about organic tomatoes contains vitamins (1 if the respondent agrees, 0 if otherwise)	-/+
Economic perception	Perception on I would like to purchase if they are available (1 if the respondent agrees, 0 if otherwise)	-/+
Monthly average income	GHC	-/+
Attributes	Attributes of organic tomatoes (1 if important, 0 if otherwise)	-/+

Factors affecting consumer's willingness to pay for organic tomatoes

Willingness to pay is a mathematical expression of a change in consumers' utility in relation to a commodity which is evoked by a change in the level of some attributes of that commodity (Hanemann et al., 1991). The stated preference method is considered appropriate in dealing with hypothetical products in this case organic tomatoes. To elicit customers' willingness to pay, the stated preference technique may utilize open-ended or closed-ended questions. The open-ended style has lost favor over time, even though it does not need extensive statistical analysis because the responses are straightforward and self-evident (Hanemann et al., 1991). The use of closed-ended questions provides for in-depth statistical analysis of data gathered. This study uses discrete choice questions, in which the responses are statistically defined as

discrete dependent variables. Responses from discrete choice questions are in forms, Yes/Yes, Yes/No, No/Yes, and No/No, where consumers are asked if they are willing to pay a specified amount (B). the probability that a consumers' willingness to pay be equal or greater than the amount (B) is given mathematically as:

$$\Pr(WTP \geq B) = 1 - C_d(A)$$

Where $C_d(A)$ represents the cumulative distribution of various willingness to pay.

The response of discrete choice questions being Yes/ No, we denote Yes by 1 and No as 0 therefore:

$y_i = 1$ if the i th consumer is willing to pay price B and $y_i = 0$ if otherwise

Hence, view y_i as a realization of a random variable Y_i that can take the values 1 and 0 with probabilities α and $1-\alpha$ respectively. Therefore:

$$\Pr(Y_i = y_i) = \alpha^{y_i}(1 - \alpha)^{1-y_i}$$

For $y_i = 0, 1$. If $y_i = 1$, is obtained α_i and if $y_i = 0$, then $1 - \alpha_i$ is obtained. It becomes fairly easy to verify by direct calculation of expected value and variance of Y_i .

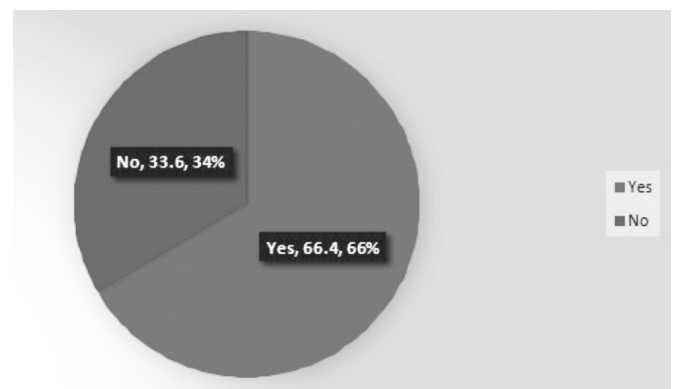
$$\text{Mathematically: } E(Y_i) = \alpha_i \text{ and } \text{Var}(Y_i) = \sigma^2(1 - \alpha)$$

RESULTS AND DISCUSSION

Consumers' awareness of organic tomatoes

The percentage of consumers who knew that organic tomatoes existed is depicted in Figure 1. The majority of those surveyed (66.4%) claimed to be familiar with organic tomatoes. 33.6% of the respondents were still unaware that tomatoes might be organic. This supports the finding of Yahaya (2008) that consumer knowledge about food safety and health issues influences their purchasing. It may be because customers are aware of the health benefits connected with its consumption.

Figure 1. Awareness of organic tomatoes

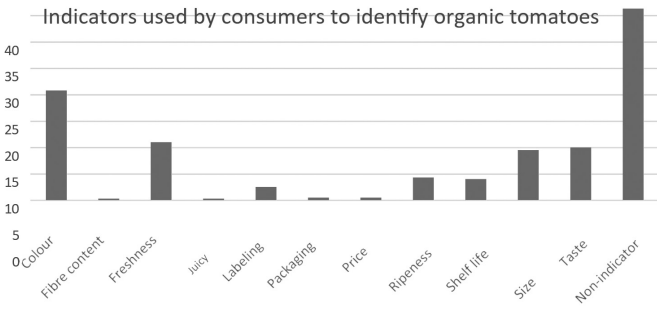


Source: Field survey, 2021

Indicators consumers used to identify organic tomatoes

The characteristics or indicators that consumers utilize to distinguish or identify inorganic tomatoes were further elicited from the 265 respondents who indicated that they were aware of organic tomatoes. Different indicators, such as color and freshness labeling, were used in response. The indicators that consumers used to distinguish organic tomatoes are shown in Figure 2. Following freshness (11%), flavor (10%), and size (9.5%), about one-fifth (20.8%) indicated they use color to identify. As the first things to be noticed and things that do not require professional verification, color and freshness were mentioned as the primary markers. The fiber level (0.3%) and juice content (0.3%) seemed to be the least indicative, and this is because consumers must conduct additional research on these indicators before they can distinguish organic from inorganic. Customers who claimed they were unaware of organic tomatoes are represented by the bar graph in the diagram labeled "non-indicator."

Figure 2. Indicators used to identify organic tomatoes

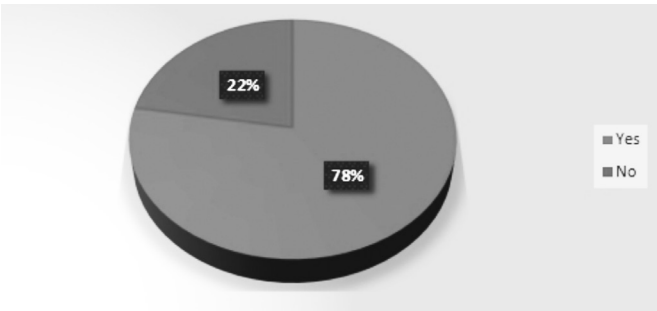


Source: Field survey, 2021

Number of consumers who like organic tomatoes

The percentage of consumers who choose organic tomatoes is shown in Figure 3. The majority of consumers (77.7%) indicated they enjoy organic tomatoes. This can be due to the advantages of organic tomatoes in terms of health. Additionally, it provides farmers who are already engaged in organic tomato production as well as those who wish to enter the industry with strong evidence of the need for organic tomatoes.

Figure 3. Number of consumers who like organic tomatoes

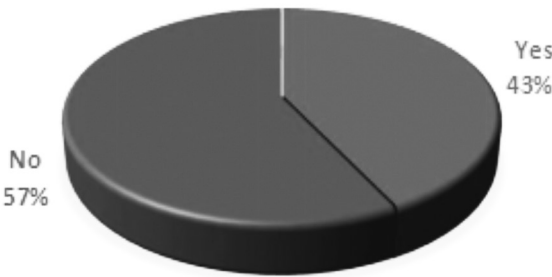


Source: Field survey 2021

Number of consumers who consume organic tomatoes

The number of organic tomato consumers in the Oforikrom Municipal Assembly is shown in Figure 4. Only 170 consumers—or 42.6%—of the overall sample—mentioned eating organic tomatoes: that is, 170 consumers. This shows that while some consumers prefer conventional and tomato paste over organic tomatoes, they still do not consume them due to their high cost, scarcity, and preference. During the administration of the questionnaires, the consumers gave these explanations.

Figure 4. number of consumers who consume organic tomatoes

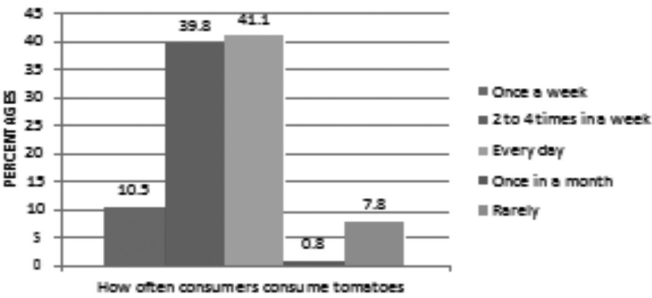


Source: Field survey, 2021

How often consumers take in tomatoes

The frequency of tomato consumption in the Oforikrom Municipal Assembly is depicted in Figure 5. The bulk of consumers (41.1%) consume tomatoes every day, followed by 39.8% who do so twice to four times per week, 10.5% who do so once per week, and 7.8% who don't. This proof demonstrates the regular use of tomatoes in meal preparation.

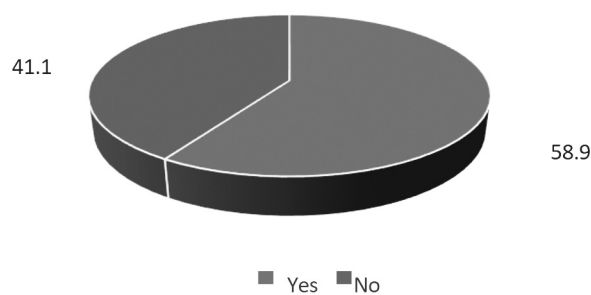
Figure 5. Frequency of consumption of tomatoes



Source: Field survey, 2021

Awareness of the benefits of consuming organic tomatoes

In the Oforikrom Municipal Assembly, tomato consumption is depicted in Figure 5 on a regular basis. It was found that the majority of consumers (41.1%) consume tomatoes every day, 39.8% do so two to four times per week, 10.5% do so once per week, and 7.8% do not. This data demonstrates that tomatoes are a common ingredient in meals.

Figure 6. Consumers awareness of the benefit of consuming organic tomatoes

Source: Field survey, 2021

Some of the benefits consumers consider in buying organic tomatoes.

Table 2 shows some of the benefits consumers consider in buying organic tomatoes. These benefits are arranged in order of importance.

Table 2. Some of the benefit stated by consumers of organic tomatoes

Benefits	Frequency	Percentage	Ranking
Healthy	132	33.1	1 st
Source of vitamins	25	6.3	2 nd
Prevention of disease	19	4.8	3 rd
Boost immune system	18	4.5	4 th
Nutritious	17	4.3	5 th
Prevention of cancer	7	1.8	6 th
Provision of strength	6	1.5	7 th
Less harmful to the body	3	0.8	8 th
Help in blood circulation	3	0.8	8 th
Delicious	1	0.3	9 th
Prevention of constipation	1	0.3	9 th

Source: Field survey, 2021

The majority of consumers (33.1%) place a high priority on health benefits, which are followed by vitamin sources (6.3%), disease prevention (4.8%), immune system support (4.5%), cancer prevention (1.8%), strength-giving (1.5%), aids in blood circulation (0.8%), less harmful to the body (0.8%), deliciousness (0.8%), and constipation prevention (0.3%).

Important attributes consumers look out for when buying organic tomatoes

Table 3 shows that freshness, size, and cost are the three main considerations for consumers when buying organic tomatoes. With a mean of 2.93, or around three (3), the majority of respondents ranked fresh as being the most important. This

supports research by Acheampong et al. (2012) and Florkowski et al. (2014) that found the majority of consumers prioritize freshness when purchasing veggies. It was also shown that price (mean of 2.79) and size (mean of 2.80) were significant factors that customers took into account while purchasing organic tomatoes. Since they were ranked in the 7th and 8th levels of the characteristics, the fiber content and FDA certification were likewise significant but not given as much weight. This suggests that any investor who wishes to get involved in the production of organic tomatoes should take these crucial factors that influence consumer purchasing decisions into account.

Table 3. Attribute consumers look out for when buying organic tomatoes

Attributes	Not important	I don't know (2)	Important (3)	Mean	Ranking
I. Fresh	9(9)	9(18)	381(1143)	2.93	1 st
II. Size	51(51)	27(102)	321(963)	2.80	2 nd
III. Price	31(31)	22(44)	346(1038)	2.79	3 rd
IV. Health benefits associated with organic tomatoes	33(33)	50(100)	316(948)	2.71	4 th
V. Free from chemicals and pesticide	46(46)	37(74)	316(948)	2.68	5 th
VI. Nutritional content of organic tomatoes	43(43)	75(150)	281(843)	2.60	6 th
VII. Fiber content	50(50)	118(236)	231(693)	2.45	7 th
VIII. FDA certification	61(61)	145(290)	193(579)	2.33	8 th
I. Fresh	9(9)	9(18)	381(1143)	2.93	1 st
II. Size	51(51)	27(102)	321(963)	2.80	2 nd

Source: Field survey, 2021

Consumers perception of organic tomatoes

Table 4 shows the result of each perception statement used in the study. Under the health statement, consumers agreed to the statement that organic tomatoes are healthier for human consumption with a mean score of 1.12 closer to one. Also, consumers agreed that organic tomatoes boost the human immune system having a mean score of 1.16 which is closer to one.

Table 4. Consumers perception of organic tomatoes

	Agree (1)	Neutral (2)	Disagree (3)	Mean
Health statement				
I. Organic tomatoes are healthier for the human consumption	363(363)	25(50)	11(33)	1.12

II. Organic tomatoes boost the human immune system	346(346))	44(88)	9(27)	1.16
III. Organic tomatoes are pesticide-free	318(318)	58(116)	23(69)	1.26
IV. Organic tomatoes are safe and help in the prevention of disease such as cancer	310(310)	68(136)	21(63)	1.28
Perception for health				1.21
Nutrition statement				
V. Organic tomatoes contain natural vitamins	339(339)	48(96)	11(33)	1.17
VI. Organic tomatoes are rich in fiber content which help prevent constipation and promotes a healthy digestive tract	314(314)	70(140)	15(45)	1.25
VII. Organic tomatoes are highly nutritious than inorganic tomatoes	333(333)	57(114)	9(27)	1.19
VIII. Perception for nutrition				1.20
Economics statement				
IX. I would like to purchase if they are available	349(349)	37(74)	13(39)	1.16
X. I am willing to pay a premium for organic tomatoes given the extra benefit for health	290(290)	87(174)	22(66)	1.33
XI. I am willing to buy if it is well packaged	320(320)	65(130)	14(42)	1.23
XII. I am willing to pay for organic tomatoes if the price is affordable	359(359)	28(56)	12(36)	1.30
XIII. Perception for economics				1.26
Environmental concern statement				
XIV. I am willing to buy if it is free from a harmful substance that affects the health of human	343(343)	43(86)	13(39)	1.17
XV. Organic tomatoes production promotes the growth of micro-organisms in the soil	250(250)	118(236)	30(90)	1.44
XVI. Perception for environmental concern				1.31
XVII. Mean perception index				1.24

Source: Field survey, 2021

Once more, consumers felt that pesticides were not present in organic tomatoes, giving them a mean score of 1.26, which is similarly near to one. The health perception index was 1.21, indicating that consumers concur with all of the aforementioned

health claims. This confirms research by Gumber & Rana (2017) and Daz et al. (2012) that shows customers' health-related concerns have a favorable impact on their purchase choices.

Consumers who agreed with the nutrition statement about the presence of natural vitamins in organic tomatoes had an average mean of 1.17, which was closer to one. The overall nutritional perception index was 1.20, which indicates a favorable relationship between buying organic tomatoes. This validates the result by Gupta (2014) that buyers think about the nutritional advantages of a product before making a purchase. Table 4's economic perception index score of 1.26 indicates a favorable correlation between price, produce availability, packaging, and customer knowledge of the advantages of organic tomatoes. This is because most consumers take their income status into account when making a purchase decision. This finding can help organic tomato growers decide how much to charge for their product, as well as how to package it and make it available on the market. Table 4's environmental concern perception result was 1.31, which suggests a favorable relationship between buying organic tomatoes and that relationship. The findings of Dáz et al. (2012) are consistent with this because consumers consider environmental concerns while buying organic tomatoes because their production does not hurt the environment. Consumers in the Oforikrom Municipal Assembly have a favorable opinion of the environmental benefits of organic tomatoes, as evidenced by the overall mean score of 1.24.

Willingness to pay a premium for organic tomatoes

According to the findings, people in the Oforikrom Municipal Assembly would buy organic tomatoes if they were offered at a competitive price with alternatives like inorganic tomatoes and tomato paste. The price for inorganic tomatoes is represented by the responses of Yes/Yes for GH12.00, Yes/No for GH9.00, and No/Yes for GH5.00. One kilogram of organic tomatoes currently costs GHC 12.00. 51.88% of consumers who said Yes/Yes were willing to pay GH12.00 for 1 kilogram of organic tomatoes. Consumers who answered Yes/No were prepared to spend GH9.00 on 1kg of organic tomatoes. This shows that GH 9.00 was willing to be spent by 27.82% of consumers in the Oforikrom Municipal Assembly for 1 kg of organic tomatoes.

Table 5. Consumers’ willingness to pay more for organic tomatoes

Response of consumers	Prices GH¢	Frequency	Percentages (%)
Yes/Yes	12	207	51.88
Yes/No	9	111	27.82
No/Yes	5	58	14.54
No/No	<5	23	5.76

Source: Field survey, 2021

The price of inorganic tomatoes was determined by the consumers' willingness to pay GH5.00 for 1 kg of organic tomatoes. This shows that, out of a total of 58 consumers in the Oforikrom Municipal Assembly, 14.54% were willing to pay

GHC 5.00 for 1 kg of organic tomatoes. The 5.76% of consumers who said No/No indicated that they would not pay any bid price. When asked why they would not pay more for organic tomatoes, respondents gave a variety of responses, including that the product is already available at a lower price and that organic tomatoes are too expensive. These remarks seem to support prior research findings that even food products with important and proven health benefits may not be appealing to consumers if they are too expensive to justify buying. Munene (2006) made this observation.

Amount consumers are willing to pay and the determinants

Table 6 shows the average amount consumers were willing to pay for organic tomatoes with a maximum of GH¢12 and minimum amount of GH¢4.

Table 6. Consumers' willingness to pay more for organic tomatoes

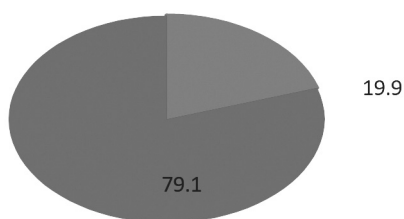
Mean	Maximum	minimum	Standard error
9.63	12	4	0.1925

Source: Field survey, 2021

Determinants of WTP for organic tomatoes

The dependent variable (WTP for organic tomatoes) at GHC 9.00 of the base price at the supermarket was divided into two groups, with 316 respondents (or 79.1% of the sample) answering "Yes, Yes, and Yes, No" and 83 respondents (or 19.9% of the sample) responding "No, Yes, and No, No" (Figure 7). According to the study, the majority of consumers would be prepared to pay the current price for organic tomatoes and even more.

Figure 7. Willingness to pay



Source: Field survey, 2021

The elements in Table 7 that affect customers' willingness to pay for organic tomatoes include socioeconomic characteristics, awareness and knowledge, and perception. When using a logistic regression model, a binary dependent variable (1=WTP GHC 9.00 or higher and 0=otherwise) was used. Table 7 provides the coefficient, standard error, t-value, odds ratio, and significance of these variables. The average income was determined to be 10%, which was favorable and noteworthy. This indicates that a respondent's willingness to pay for organic tomatoes will likely grow by around 1.002 times

for every unit increase in income. Consumers who believe organic tomatoes are better for human consumption were 4.292 times more willing to spend than their counterparts, according to favorable and substantial research at the 5% level. This is corroborated by the conclusion of Narine et al. (2009) that consumers' health consciousness affects the wholesale price of organic tomatoes.

Table 7. determinants of organic tomatoes

VARIABLE	B	S. E	SIGN	EXP (B)	95% CI LOWER	UPPER
Constant	-2.552	1.166	0.029	0.078		
Age	0.007	0.023	0.747	1.007	0.963	1.054
Years of For. Educ.	-0.023	0.037	0.525	0.977	0.909	1.050
Household	0.058	0.089	0.514	1.060	0.890	1.263
Gender	-0.114	0.340	0.737	0.892	0.459	1.736
Average	0.002	0.001	0.056	1.002*	1.000	1.004
Org. Tom. are healthier	1.457	0.595	0.014	4.292**	1.338	13.765
Pesticide 1	0.352	0.368	0.338	1.422	0.692	2.924
FDA certification	0.592	0.332	0.074	1.808*	0.943	3.466
Size of tomatoes	0.490	0.387	0.206	1.632	0.764	3.486
Extra benefits	0.758	0.324	0.020	2.133**	1.129	4.030
Highly nutritious	0.794	0.432	0.066	2.212*	0.949	5.153
Cont. vitamins	0.708	0.455	0.120	2.030	0.832	4.953
Percep. that Org. pesti. free	-1.119	0.482	0.020	0.327**	0.127	0.841

Source: Field survey, 2021

FDA certification of organic tomatoes was favorable and significant at 10%, implying that customers are 1.808 times more likely to pay for certified organic tomatoes than uncertified ones. Given the additional benefits, I am willing to pay a premium for organic tomatoes. This result was also positive and significant at 5%, indicating that there is a likelihood of about 2.133 times greater for a respondent who agrees with the statement than for a respondent who disagrees.

It was also significant at 10% with a positive association that organic tomatoes are more nutrient-dense than inorganic tomatoes. When compared to consumers without this view, they were 2.212 times more likely to pay. Pesticide-free organic tomatoes were shown to be unfavorable and significant at 5%. This suggests that a person's WTP will fall by 0.673 times for every unit higher in their impression that organic tomatoes are pesticide-free. This is due to the fact that organic items (such as tomatoes) are recognized to be pesticide-free; therefore, if farmers make any effort to boost this view, it may appear that the product has been adulterated, which will lower their WTP.

CONCLUSION

Only 33.6% of respondents to the study were unaware of the existence of organic tomatoes, the study found. It was discovered that customers distinguish organic tomatoes from conventional ones using cues like color, freshness, and taste. Juiciness and fiber content were the least important characteristics. The majority of survey participants also concur that organic tomatoes are better for you, more nutrient-dense, have a nicer flavor and better taste, and contain fibre that help reduce constipation in people. Consumer perceptions of organic tomatoes are favorable in terms of health and nutrition, according to a health perception rating of 1.21. The nutrition perception score of 1.20 showed that the majority of consumers believe organic tomatoes to be nutrient-dense. The average perception score, which was 1.24, indicates that customers in the Oforikrom Municipality have a favorable opinion of organic tomatoes.

According to the study, 51.88% of consumers were willing to spend the highest bid (GHC12.00) for 1 kg of tomatoes, 27.82% were willing to spend GHC9.00 for 1 kg, 14.54% were willing to spend the lowest bid (GHC5.00) for 1 kg of organic tomatoes, and only 5.57% were not willing to spend any of the bid prices but a sum that was lower than the lowest bid for 1 kg of organic tomatoes. Overall, GHC 9.63, which is higher than the lowest bid but less than the highest bid, was the average price paid. Additionally, it was discovered that factors like income, knowledge of and awareness of health perception, nutritional perception, economic perception, and their decision to pay for organic tomatoes based on size affect the amount consumers are willing to pay as they significantly influenced the willingness to pay for organic tomatoes.

The study makes the following recommendation: Producers should advertise and promote the product to increase consumer knowledge of and awareness of the health benefits of the product in order to increase consumer willingness to pay, as increased consumer willingness to pay is correlated with increased consumer perception of the health benefits of organic tomatoes. Producers should take into account variables like average monthly income, age, educational attainment, perceptions of the health, nutritive value, and economic value of organic tomatoes in order to enhance sales of organic tomatoes in Oforikrom. These variables have an impact on consumers' purchase decisions. Since consumers are prepared to pay an additional GHC 9.63 for organic tomatoes, the government and investors should engage in their production. As a result, there is a favorable opinion of the product's price.

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