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Original Research Article

Modelling consumer behaviour on organic vegetable purchases in Chegutu, Zimbabwe

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ABSTRACT

Background: Organic food consumption contributes significantly to health and environmental benefits, positioning it as a critical component of sustainable consumption and production (SCP). Yet in many developing contexts such as Zimbabwe, research has emphasized production over consumer behaviour, slowing sectoral growth. This study investigates what motivates consumers in Chegutu, Mashonaland West Province, to choose organic vegetables.
Methods: A mall-intercept survey was conducted with 200 participants in Chegutu. Data were collected via mobile devices. Given that the decision to purchase organic vegetables is binary (yes or no), binary logistic regression was employed to identify the factors influencing consumer choice.
Results: Results show that belief in health benefits and exposure to information about organic foods through in-store advertisements or handouts significantly increase the likelihood of purchasing organic vegetables. In contrast, having attained secondary education and having stronger perceptions of environmental benefits are associated with lower likelihood of purchasing organic vegetables.
Conclusions: To stimulate growth in Zimbabwe's organic food sector, policy and industry stakeholders should focus on increasing both availability and visibility of organic products. Health-oriented awareness campaigns and point-of-purchase educational materials are likely to be effective. Also, further research is needed to understand why greater environmental concern or secondary education might reduce organic purchasing, to better target interventions.

Keywords: Logitic regression, Organic foods, Credence foods, Chegutu, Sustainable consumption and production

INTRODUCTION

Globally, there has been clarion calls to shift towards healthier living and environmental sustainability leading to changes in food consumption patterns. Different scientific disciplines have increasingly sought to find how the adoption of organic practices will help in lessening the impact of climate change and reverse the deleterious climate change effects that have been globally experienced over the past years.[1] Organic vegetables embody both health consciousness and environmental concern. Notwithstanding this rising awareness, organic food markets in the Global South, including Zimbabwe, remain underdeveloped. It has been remonstrated that galvanising the development of organic agriculture hinges on synchronisation of consumption with production.[2] Understanding what motivates consumers in developing regions to purchase organic vegetables is imperative to promote sustainable consumption and

production pathways for private and public benefits. Chegutu, in Zimbabwe's Mashonaland West province, offers an insightful microcosm for exploring these consumer behaviour dynamics.

While consumers who represent the consumption aspect of sustainable consumption and production (SCP) make purchasing decisions, producers respond by supplying goods. It is vital to understand what drives consumers' choices. By identifying the main influences behind the purchase of organic foods, the study reveals how sustainability can be integrated into consumer decisions. Promoting sustainable consumption through organic food purchase requires a deeper understanding of consumer behaviour vis-à-vis organics. Analyses of consumer behaviour towards novel product, of which organic foods are part, permit substantiating diverse and often intricate economic, cultural and socio-psychological factors that influence them from a scientific standpoint.[3]

The evidence of pesticides and chemicals in fresh and processed food products from conventional farming systems has accelerated the demand for organic foods. For Africa, the second biggest continent, total organic agricultural land contributes only 3% to global agricultural land and only 0.2% of Africa's total agricultural land is under organic agriculture.[4] Therefore, SCP in general and organic agriculture in particular have largely been supply-driven rather than demand-driven due to low level of awareness.

Organic food production has been linked to sustainable consumption through the provision of environmentally sustainable, healthy and safe foods. Various researchers note that consumers who buy food products that are environmentally friendly and protect their health, prioritise food safety and health.[5-9] Global organic production encompasses many pulses, cereals, vegetables, cash crops (such as cotton) and many animal products.[10]

Coupled with rising levels of education, awareness, personal disposable incomes and global exposure, the organic food industry has the capacity to expand in developing countries. As such, the call to understanding consumer behaviour towards organic foods from a Zimbabwean perspective requires a renewed urgency.

This study adopts the patterns, inhibitors, facilitators (PIF) model propounded by Ukenna and Nkamnebe to reveal the behaviour of consumers in purchasing organic vegetables.[11] The model incorporates facilitating factors such as health benefits and effective information and inhibiting factors such as high prices and limited availability. Further, it posits that health benefit perception and retailer-provided organic information encourage organic purchases and negative price perceptions and environmental benefit perceptions may act as inhibitors. This duality is critical for interpreting the surprising finding that some consumers who are more environmentally conscious may not purchase organic foods due to perceived barriers. These factors influence consumer intentions consequently affecting purchasing patterns. Therefore, the PIF model provides a comprehensive understanding of sustainable consumption decisions by clearly separating facilitators and inhibitors yet considering their concurrent influence. This is especially critical for credence goods in this case organic foods where behaviour is shaped by trust and information asymmetry.

The modern demand theory or Lancaster's attribute model, unlike the traditional demand theory stresses that consumers value the attributes or charecteristics embodied in goods not the price.[12,13] This better explains preferences for premium-priced organic vegetables over cheaper conventional alternatives.

In developing regions, organic foods have become integral due to concerns about chemical residues, pesticide exposure and foodborne illnesses associated with conventional food systems.[14] However, challenges such as limited availability, higher prices and deficiency in consumer awareness have hugely impacted the organic food markets in these regions remain underdeveloped.[15,16]

Consumer behaviour towards organic vegetables as documented by studies in different contexts have been influenced by a combination of health consciousness, environmental concerns and socio-economic factors.[7,17,18] In Ghana, freshness, taste and health benefits were identified as primary motivators. On the other hand, price and limited distribution channels served as significant barriers.[5,19] Price remains a critical factor inhibiting the purchase of organic vegetables usually since carry higher prices than conventional. This has limited access of organic foods by low and middle-income earners.[20,21]

Higher income has generally been found to positively correlate with organic food consumption. For education, the effect has been not only been complex but also dependent on the contexts.[17,22] Some studies suggest secondary education alone may not be sufficient to drive purchases unless couples with adequate knowledge.[22] Some studies have also shown that age, gender, and cultural factors also influence consumer behaviour. In other developing contexts, younger and more urban consumers show greater interest and openness toward organic foods in developing countries.[17]

METHODS

Data was collected through digital questionnaires administered using the Open Data Kit (ODK) on mobile devices. The survey which was conducted from July to September 2023 targeted adults responsible for groceries in Chegutu, at local supermarkets and grocery stores utilizing a convenience sampling approach through mall-intercept surveys. This approach enabled access to adult grocery shoppers and therefore timely collection of data cost effectively. 200 participants were interviewed about

their purchasing habits, awareness, attitudes and socio-demographics.

Multi-item Likert scales adapted from validated instruments in prior consumer behaviour research were used to operationalise key constructs affecting organic food purchase behaviour.[23]

Environmental benefit perception

Measured with two statements assessing beliefs about environmental impacts of organic vegetables (for example "Products grown organically are obtained from sustainable resources and emit less polluted discharges into air, water and soil than grown conventionally". Respondents rated their level of agreement or disagreement on a 5-point scale (1=strongly disagree to 5=strongly agree).

Health benefit perception

Health benefit perception comprised three items capturing perceptions that organic vegetables are healthier or safer (for example "Organic products have more nutrients than conventional products such as vitamins and minerals").

Price perception

Price perception included two items evaluating affordability and value considerations (for example "Price of organic products is a barrier to decision to buy").

Convenience

Comprised three items assessing availability and ease of access (for example "Organic products do not have a wide range of choices compared with conventional products"). Respondents rated their level of agreement or disagreement on a 5-point scale (1=strongly disagree to 5=strongly agree).

Data was analysed using SPSS software. Chi-square and independent samples *t*-tests were used in descriptive statistics to separate the purchasers from non-purchasers of organic foods. The logistic regression was used to analyse the factors affecting purchase decisions of organic foods. Both the categorical variables and some summated scales were used to model the behaviour of respondents with regards to purchase decisions for organic products.

Hosmer-Lemeshow goodness-of-fit test yielded $\chi^2(8)=7.45$, $p=0.49$, indicating an adequate fit of the model to observed data. Additionally, Nagelkerke pseudo-R^2 value of 0.32 suggests that 32% of the variance in purchase behaviour is explained by the model predictors. Lastly, overall correct classification rate was 84.5%, with sensitivity for purchasers at 58% and specificity for non-purchasers at 93.3%.

Internal consistency reliability (Cronbach's alpha) for the scales were environmental benefit: $\alpha=0.80$; health benefit: $\alpha=0.70$; price perception: $\alpha=0.82$; convenience: $\alpha=0.61$.

Demographic profile of respondents

The demographics provide contextual background for understanding consumer behaviour vis-à-vis organic vegetable purchases.

Age

Respondents ranged from 18 to 60 years, with an average age of 34.2 years (SD=9.8).

Household size

The average household comprised of 5 members (SD=1.7).

Monthly household income

Approximately 60% reported low income (<USD $100), 30% medium income (USD $100–300), and 10% high income (>USD $300).

Education level

About 40% had attained secondary education, 35% tertiary education, and 25% had primary or no formal education.

RESULTS

Supermarkets shoppers were more likely to purchase organic foods than those who bought their household groceries in grocery stores and farmers' markets. Buyers had a stronger perception of organic foods' nutritional and chemical benefits and were more knowledgeable about what "organic" means. This finding is consistent with several studies including. However, Alshammari found out that knowledge of organic foods was not a significant determinant of organic food purchase.

Most bought the organic foods from the farmers' market, direct from the farmer and supermarkets as on Figure 1. Reasons cited for purchasing from the preferred outlet varied from cheaper prices, support local/smaller farmers, convenient location, variety, buying most groceries there and convenience.

On reasons for buying, most purchasers showed that they bought organic foods because they are healthier in line with previous studies. They also showed that buying from these outlets support smaller/local farmers, taste better, stock GMO-free and pesticide-free produce. Most respondents showed that they will buy more organic foods if prices decrease and availability and evidence of quality of organic standards improves.

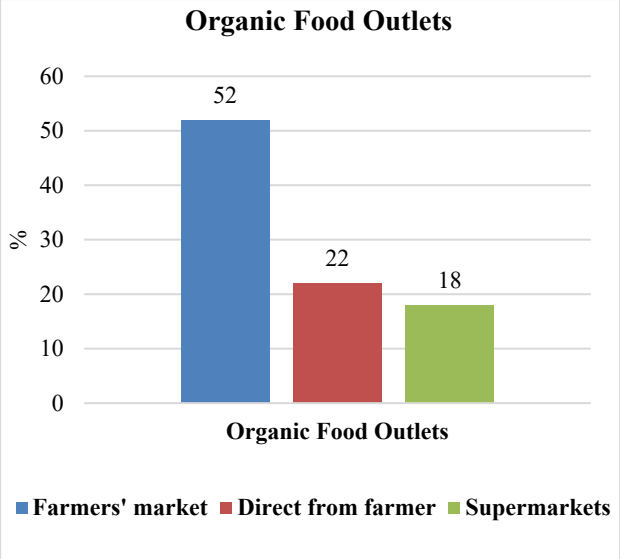

Figure 1: Major organic food outlets.

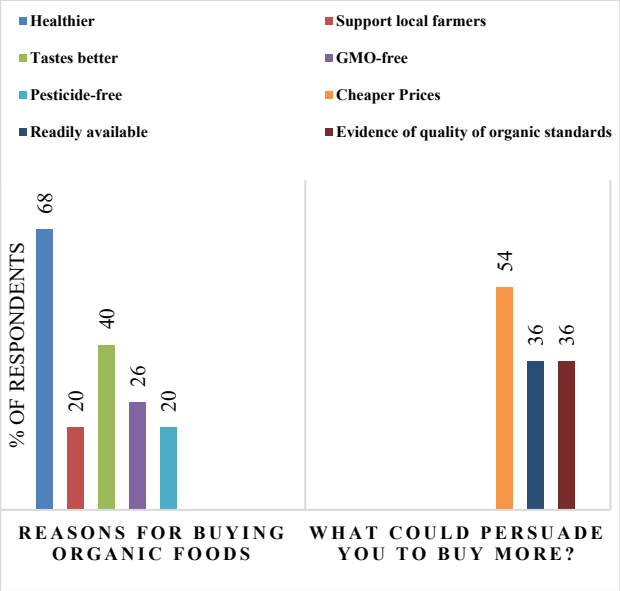

Figure 2: Reasons for purchase and persuasions for purchase of organic foods.

Of the 200 respondents, 150 of them (75 percent) have never purchased organic foods (Figure 3). Segment analyses for purchasers and non-purchasers disclosed that health benefit perception and retailer-provided information had stronger positive effects among purchasers. On the flipside, price sensitivity dominated as a barrier among non-purchasers. Some studies reported that price was a major factor influencing willingness to pay for organic vegetables.

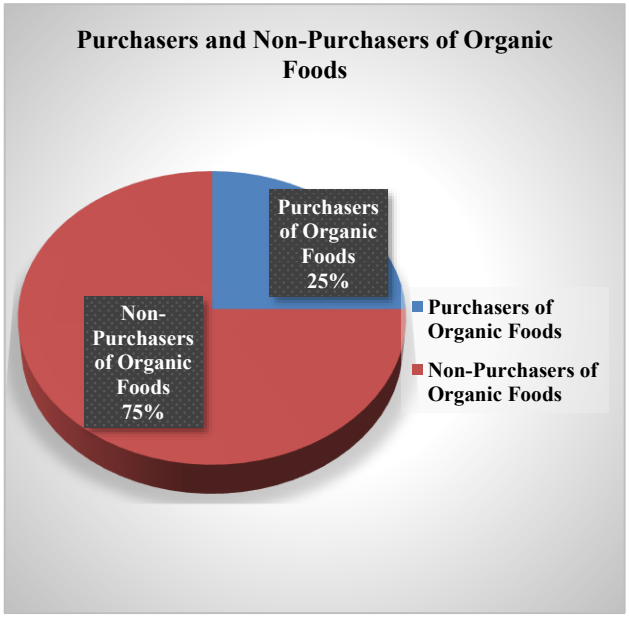

Figure 3: Classification of purchasers and non-purchasers of organic foods.

Among non-buyers, main barriers included lack of availability where they shopped, high prices, and insufficient information (Figure 4). Some also distrusted organic claims. This is consistent with. While others were confused by terminology. Many said they would buy organic foods if availability improves. Improvement in pricing and quality evidence were also mentioned in prior findings.

Table 1: Logistic regression results.

Variable	Coefficient (B)	Standard error	Odds ratio Exp(B)	95% CI upper lower	P value
Environmental benefit	-1.696**	0.600	0.183	0.570 0.594	0.005
Health benefit	2.288**	0.673	9.856	2.634 36.876	0.001
Education (1) secondary education	-2.380**	1.179	0.093	0.009 0.933	0.044
Organic information delivery (2) (retailer advertisement/in-store handouts)	1.972**	0.968	7.183	1.078 47.865	0.042

**indicates significance at 5%.

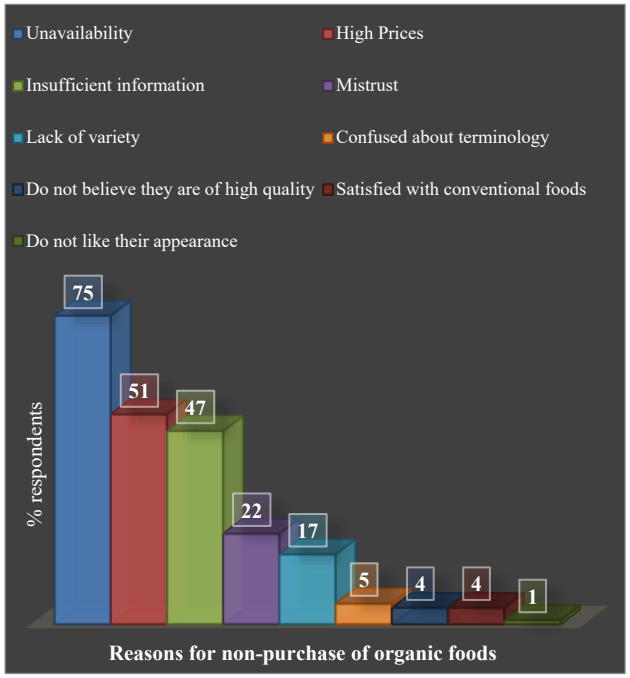

Figure 4: Major reasons for non-purchase of organic foods.

DISCUSSION

The findings suggest that perceptions of health benefits significantly increase the likelihood of purchasing organic vegetables. This result substantiates a broad body of international evidence demonstrating that health consciousness is a key driver of organic food adoption.[5,8,18,26]

On the contrary, there is a negative association between the perception of environmental benefit and organic food buying. This is inconsistent with findings in Russia.[5,6] This probably reflects some skepticism about the actual impact of organic practices on the environment. Evidence from this study shows divergence from Western contexts where environmental concern often reinforces organic purchase intent. This may suggest that in developing-country contexts, consumers prioritize private health gains over collective environmental outcomes. The result thus contributes to the literature by confirming that the motivational structure of organic food demand is context-dependent.

Another significant concerns respondents with secondary education were less likely to purchase organic vegetables mirroring findings in China.[22] This suggests that general education may not automatically enhance consumer understanding of organic concepts. This is especially true when formal curricula lack sustainability or food safety components. This suggests that formal education alone does not provide cognitive ability to influence organic food purchase heightening the need for tailored consumer education to bridge the gap between formal education and the understanding of organic food.

Furthermore, retailer-based information delivery emerged as a strong positive determinant of organic food purchasing. This interesting finding is in harmony with other studies.[20,27] This underscores the potential of in-store advertisements and handouts in influencing consumer decisions. Therefore, trusted retail channels offer actionable insights for policymakers and marketers to heighten organic product development. In markets where there is limited institutional trust and underdeveloped certification systems, retailers play an intermediary role in building consumer confidence and providing credible product information. Therefore, trusted retail channels can serve as effective communication and marketing platforms to expand the organic food market in developing economies.

Overall, the present findings proffer existing knowledge by contextualising global insights within a developing country. While health consciousness universally drives organic food adoption, environmental motives. The study also highlights that formal education, despite being valuable, must be complemented by tailored information strategies, particularly to strengthen consumer engagement with organic products. These insights offer actionable implications for policymakers, marketers, and educators seeking to promote organic market development.

Limitations

This study provides valuable insights into the determinants of organic vegetable purchasing behaviour. However, limitations that must be acknowledged are two-fold. First, convenience sampling introduces limitations related to representativeness of the sample and generalisability of findings. It may over-represent demographic groups, such as higher-income shoppers or urbanites who frequently shop at the formal retail outlets. potentially biasing the findings. Second, the sample is geographically limited hence findings may not be fully representative of consumers in other regions or income groups with different market dynamics. Future research could employ longitudinal or experimental designs and incorporate diverse regions and behavioral measures to strengthen the generalisability and explanatory power of these findings.

CONCLUSION

This study examined the factors influencing organic vegetable purchasing behaviour. It highlighted how consumer environmental and health perceptions, educational levels and information sources shape organic market participation. The findings show that health benefit perceptions remain the strongest motivator for organic food purchases, thus confirming that consumers in developing economies prioritise private, immediate gains over collective environmental outcomes. By contrast, the negative association between environmental benefit perceptions and organic purchasing underscores

the persistent skepticism and information gaps surrounding the ecological value of organic farming. The study also reveals that formal education alone does not guarantee awareness or appreciation of organic products, suggesting that targeted consumer education is essential to translate knowledge into behavioral change. Furthermore, the significant role of retailer-based information delivery provides practical evidence of how point-of-sale communication can strengthen trust and influence purchase intentions.

Overall, this study advances knowledge and understanding in the field of organic foods by situating global evidence within a developing-country context. Here, organic food adoption is uniquely shaped by the interaction among consumer trust, information asymmetry and socio-economic. Theoretically, the study emphasises the distinction between private and public benefit motivations while empirically it identifies retailer-based communication as a strategic lever for organic market development. These insights advanced extend the discourse on organic food consumption beyond health and environmental dichotomies hence it offers actionable guidance for different stakeholders to foster a more informed and sustainable organic food market.

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