West Science Interdisciplinary Studies
Vol. 03, No. 09, September and 2025: pp. 1579-1586

Analysis of Consumer Perception of Interest in Organic Vegetables in North Sumatra (Case Study: Semangat Village, Karo Regency)

Dian Habibie[1], Nalini Arumugam[2], Nurul Aisyah Binti Mohd Suhaimi[3], Leni Handayani[4], Sri Wahyuni[5]
[1,4,5] Universitas Muslim Nusantara Al-Washliyah, Jl. Garu 2 No. 93, Medan, Indonesia
[2,3] Universiti Sultan Zainal Abidin, Kampung Gong Badak, 21300, Terengganu, Malaysia
Correspondence email: dianhabibie@umnaw.ac.id

ABSTRACT

This article analyzes consumer perceptions and interest in organic vegetables in Semangat Village, Karo Regency, North Sumatra. Given the growing popularity of organic vegetables grown without synthetic pesticides and chemical fertilizers, this study aims to identify factors influencing consumer purchasing interest. Data were collected through surveys and statistical analysis. Results indicate that while awareness of the benefits of organic vegetables is increasing, consumer purchasing interest remains low, driven by higher prices and a lack of knowledge about their benefits. This study provides insights for producers and marketers to develop effective marketing strategies and encourages increased farmer education on good organic farming practices. Emphasis is also placed on the need for transparency and education to increase consumer trust.

Keywords: *Organic Vegetables, Consumer Interest, Consumer Perception, North Sumatra, Semangat Village, Karo Regency.*

1. INTRODUCTION

Organic vegetables are gaining popularity among consumers who prioritize health and environmental sustainability. Organic vegetables are produced without the use of synthetic pesticides, chemical fertilizers, or other synthetic additives that can negatively impact human health and the environment. However, despite growing awareness of the benefits of organic vegetables, consumer interest in purchasing and consuming them remains variable. Factors such as consumer perception, price, and environmental factors can influence consumer interest in organic vegetables. Food safety and health are important issues for the global community, including in Indonesia. The use of pesticides and hazardous chemicals in conventional farming has raised concerns about consumer health and environmental sustainability. This has driven the growth of the organic vegetable market, which is believed to be safer and more environmentally friendly.

In Indonesia, North Sumatra is one of the provinces with significant potential for organic vegetable development. This potential is supported by suitable geographic and climatic conditions, as well as local traditions that maintain environmental sustainability. Furthermore, the positive trend in organic vegetable consumption is driven by increasing public awareness of the importance of healthy living. Although the organic vegetable market is showing positive growth, several obstacles require further investigation. One major obstacle is low consumer interest in organic vegetables. Lack of awareness about the benefits of organic vegetables, relatively higher prices compared to conventional vegetables, and limited access are contributing factors to low consumer interest.

North Sumatra, particularly Semangat Village, Karo Regency, has significant potential for organic vegetable agribusiness development. However, there is little research exploring consumer perceptions and the factors influencing consumer interest in organic vegetables. Therefore, this

study will fill this knowledge gap and provide valuable insights for organic vegetable producers and marketers in designing effective marketing strategies. This study aims to analyze consumer perceptions and interest in organic vegetables in Semangat Village, Karo Regency, North Sumatra. The results are expected to provide insights to organic vegetable producers and marketers in developing effective marketing strategies to increase consumer interest.

2. LITERATURE REVIEW

2.1 Consumer Perception of Organic Vegetables

[1] revealed that consumer perceptions of organic vegetables in Mataram City are strongly influenced by quality and available information. In this context, positive consumer perceptions directly contribute to their purchasing intention. The results of this study can be considered relevant for studies on consumer perceptions in North Sumatra and Terengganu, as both also have unique market characteristics.

2.2 Purchase Interest Based on Price Perception and Consumer Attitude

[2] This study examined the influence of price perception on purchasing interest in organic vegetables in traditional markets. This study showed that prices perceived as reasonable can increase consumer purchasing interest. This reflects a crucial factor in understanding the dynamics of purchasing interest in the two regions, particularly considering the differences in economic levels and purchasing power between consumers in North Sumatra and Terengganu.

2.3 Perception of Quality and Price on Purchase Interest

[3] conducted an analysis of perceived quality and price of organic vegetables sold online in Surabaya. This study indicates that the quality of organic vegetables significantly influences consumer purchasing intention. This finding is also relevant to the research area, given that product quality is a key consideration for consumers when choosing between organic and conventional vegetables.

2.4 Organic Fertilizer

[4] discusses the importance of organic fertilizer in vegetable cultivation. Knowledge of organic farming practices, including proper fertilizer use, can improve vegetable quality and, in turn, influence consumer perceptions. Awareness and understanding of the benefits of organic vegetables resulting from these practices can increase purchasing interest.

2.5 Research Methodology

[5] provides an important methodological foundation for data collection and quantitative analysis for social and educational research. Appropriate research methods are crucial for assessing consumer perceptions and the factors that influence them. Using appropriate survey techniques and statistical analysis will provide accurate data on organic vegetable purchasing interest in these two regions.

3. METHODS

The research method used in this study is descriptive. This is an intensive, in-depth investigation of individuals and/or social units, identifying all important variables related to the development of the individual or social unit being studied. This research may uncover unexpected findings that can then be used to formulate hypotheses [5].

The data analysis conducted in this study was a Likert Scale analysis. The Likert Scale is a scale used to measure the perception, attitude, or opinion of an individual or group regarding a social event or phenomenon, based on operational definitions established by the researcher [6]. On a Likert scale, respondents are asked to rate each question as either liking (+) or disliking (-). These responses are aggregated, and the answer indicating liking is given the highest score. It's perfectly acceptable to assign a 5 to the highest score and a 1 to the lowest score, or vice versa. What matters is the consistency of the attitude displayed.

4. RESULTS AND DISCUSSION

This study used a survey method with a questionnaire as the research instrument. Questionnaires were distributed to 100 farmers in Terengganu, Malaysia. The results showed that farmers' knowledge about organic vegetables was quite diverse.

Table 1. Knowledge of Organic Vegetables

No	Very Understanding (%)	Understand (%)	Do Not Completely Understand (%)	Don't Understand (%)	Really Do Not Understand (%)	Total (%)	Total Score (%)
1	0%	80%	20%	0%	0%	100%	76%
2	6%	46%	43%	6%	0%	100%	70%
3	6%	40%	46%	9%	0%	100%	69%
4	0%	29%	54%	17%	0%	100%	62%
5	3%	43%	49%	6%	0%	100%	69%
6	3%	26%	43%	29%	0%	100%	61%
7	0%	14%	51%	29%	6%	100%	55%

Source: Processed Primary Data (2023)

For organic vegetable knowledge, there are 7 (seven) questions about organic vegetable knowledge in the questionnaire, which cover how to plant, organic vegetable cultivation techniques, seed selection, sowing, care, harvesting, and how to measure nutrients in organic vegetables. The questionnaire uses a rating weight as an assessment with the following values:

Very Understandable = weight value 5
Understand = weight value 4
Do not completely understand = weight value 3
Don't understand = weight value 2
Totally Ignorant = weight value 1

The research results found that farmers' knowledge of organic vegetables through questionnaires was as follows:

1. How to grow crops

The results of the farmers' knowledge of farming methods showed that 80% of farmers understood and 20% did not understand. In this study, farming methods had a total score of 76%, so it can be concluded that farmers understand farming methods.

2. Organic vegetable cultivation techniques

Organic vegetable cultivation techniques are crucial for starting an organic vegetable farm. The study found that 6% were very knowledgeable, 46% were somewhat knowledgeable, 43% were somewhat knowledgeable, and 6% were not. The total organic vegetable cultivation technique score of 70% indicates that farmers understand organic vegetable cultivation techniques.

3. Seed selection

Seed selection is a key factor in achieving good yields. 6% of respondents understood seed selection very well, 40% understood it, 46% didn't understand it well, and 9% didn't understand it. The total score was 69%, indicating that farmers understand how to select good seeds.

4. Seeding

Proper seeding is essential for good yields. Farmers' assessment of seeding techniques revealed that 29% understood, 54% had little understanding, and 17% did not understand, for a total score of 62%. This indicates that farmers are still familiar with seeding techniques.

5. Maintenance

Maintenance is no less important in agriculture. This study found that 3% understood very well. 43% understand, 49% don't understand, 6% don't understand. With a total score of 69%Farmers are still relatively ignorant about maintenance.

6. Harvest

Harvesting requires precision to prevent damage to the produce. Farmers' assessments of harvesting techniques revealed that 3% understood very well, 26% understood, 43% had little understanding, and 29% did not understand. The total score was 61%, indicating that farmers were relatively knowledgeable about harvesting.

7. How to measure nutrients in organic vegetables

Maintaining plant growth using an organic vegetable system requires daily nutrient monitoring. The results showed that 14% understood, 51% somewhat understood, 29% didn't understand, and 6% didn't understand at all. The total score was 55%, indicating farmers had little understanding of how to measure nutrients in organic vegetables.

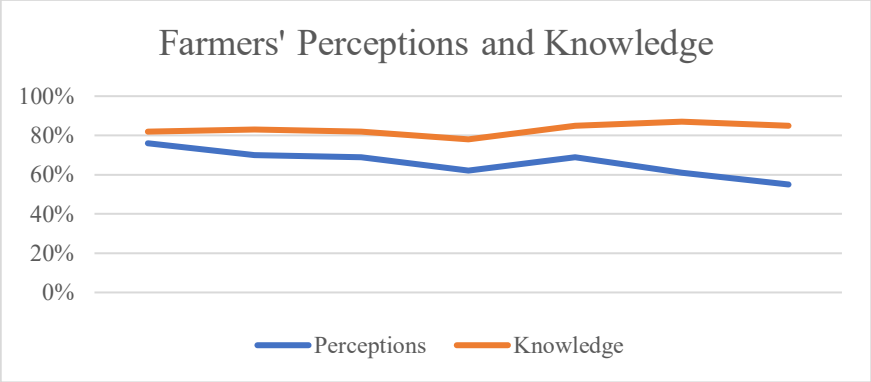

Figure 1. Farmers' Perceptions and Knowledge

The image above shows that farmers' knowledge of organic vegetables ranges from understanding how to plant, organic cultivation techniques, seed selection, sowing, care, harvesting, and how to measure nutrients in organic vegetables. These seven elements are essential for starting an organic vegetable farming system. Consumer perceptions of health benefits and food safety play a significant role in their decision to purchase organic vegetables. Consumers are increasingly recognizing that organic vegetables are not only better for their health but also safer than conventional produce, which may contain pesticide residues or other chemicals. Many consumers believe that organic vegetables contain more nutrients and vitamins and are free from the artificial additives or chemicals commonly found in conventional farming. Research by [7] noted that people who have high health consciousness are more likely to choose organic products, because they associate the consumption of organic vegetables with improved quality of life and better health.

Today's society is increasingly concerned about food safety issues, especially after a number of cases involving food contamination. A study by [8] shows that consumers tend to choose organic vegetables because they believe the products are safer and free from harmful pesticide residues. Specifically, they feel that by purchasing organic produce, they can take a proactive step to protect their family's health. The perception of better health includes not only physical benefits but also the psychological impact of consuming healthy foods. According to research by Radulescu (2021), consumers who consume organic vegetables often report increased self-confidence and life satisfaction, indicating a positive relationship between healthy eating and overall well-being. Higher levels of knowledge about the health benefits of organic vegetables and their safety are encouraging consumers to switch to healthier food choices. [10] revealed that educational programs that explain scientific evidence regarding the benefits of organic farming can increase consumer awareness and encourage them to choose more organic products.

Furthermore, price is a key factor influencing consumers' decisions to purchase organic vegetables. Although awareness of the health benefits of organic vegetables is growing, price is often a significant barrier for many consumers. Organic vegetables are generally sold at a higher price than conventional vegetables. This raises the question of whether some consumers, especially those on a budget, are willing to pay more without a clear understanding of the benefits offered. Research by [7] shows that consumers often consider price as an indicator of value, so they tend to be reluctant to pay more.

The high perceived value associated with organic vegetables can help overcome price barriers. However, if consumers are not fully aware of the health or other benefits of organic vegetables, they may see price as a major barrier. A study by [11] concluded that, to increase sales of organic products, it is important for marketers to emphasize the higher health and safety values so that consumers feel that their investment is worth it. Furthermore, some sellers have implemented flexible pricing strategies, such as offering discounts on organic products or offering bundled packages with other vegetables to attract consumers. Research conducted by [12] shows that consumers are more interested in trying organic products if they feel they are getting a good deal or feel the product price is competitive compared to conventional products.

Consumer behavior towards organic vegetables is also influenced by income. According to [13] Low-income consumers may avoid organic produce due to higher prices, while those with higher incomes are more willing to pay a premium for organic vegetables. Furthermore, there is a perception that higher prices reflect better quality. However, without a strong understanding of the benefits of organic vegetables, consumers may remain hesitant to make a purchase. This suggests the need for marketers to focus on consumer education in establishing a relationship between quality and price, as expressed by [14].

In terms of accessibility and availability, organic vegetables play a significant role in consumer purchasing decisions. Although interest in organic products is growing, if consumers cannot easily access organic vegetables in their environment, their desire to purchase often goes unfulfilled. Research by [15] Research shows that the availability of organic products in local markets and other distribution channels significantly influences consumer decisions. When organic vegetables are not widely available, consumers are less likely to choose to purchase them, even if they have the intention to try.

Ease of access also serves as an additional driving factor. The emergence of e-commerce platforms has increased the accessibility of organic products, allowing consumers to purchase organic vegetables without having to go to a physical market. [16] Research shows that digital access to healthy food products is highly attractive to young and urban consumers with high mobility. With increased purchasing options, consumers feel more comfortable choosing organic vegetables, which can ultimately increase their purchasing intention. This challenge is particularly acute in rural areas or communities with limited mobility, where the availability of organic produce remains limited. Therefore, it is crucial for producers and marketers to collaborate with local retailers to improve distribution channels for organic vegetables and ensure their availability to diverse segments of the

population. Awareness and education about the benefits of organic vegetables must also be accompanied by efforts to increase product accessibility so that more consumers can enjoy the benefits of quality organic vegetables.

The credibility and labeling of organic products significantly influence consumer purchasing decisions. When consumers choose organic vegetables, they often rely on the information on the product label as an indicator of quality and authenticity. Clear and reliable labels, such as organic certification, not only increase consumer trust but also provide assurance that the product meets established organic farming standards. Research by [17] shows that consumers tend to feel safer choosing products that have a credible label because they believe that the product is free from harmful chemical residues. Label credibility also contributes to the perceived high value of organic products. With so many products on the market, consumers can feel overwhelmed when choosing, so labels that provide transparent information about the origins and production processes of organic vegetables can help them make better decisions. Furthermore, [18] revealed that consumer education regarding the meaning of various organic labels and certifications is becoming increasingly important, particularly in increasing their understanding of the health benefits associated with consuming organic vegetables. Through a combination of label credibility and consumer education, producers can build brand loyalty and encourage consumers to choose organic products more, which in turn can shift consumer consumption patterns to be healthier and more sustainable.

Consumer education and awareness play a crucial role in influencing organic vegetable purchasing behavior. As increasingly discerning consumers, they need to understand the health and environmental benefits offered by organic vegetables to make informed purchasing decisions. Research by [19] Studies show that consumers' knowledge of organic farming and its benefits is significantly correlated with their intention to purchase organic produce. Appropriate educational programs can help consumers realize the importance of choosing organic vegetables, particularly in terms of nutritional quality and positive long-term health impacts. Awareness of health and food safety issues is also encouraging consumers to pay closer attention to what they consume. In a society increasingly impacted by health problems caused by unhealthy diets, education about organic products can help lay a strong foundation for changing mindsets. [20] emphasized that education focused on health benefits can alleviate consumer concerns about the premium price of organic produce. With increased knowledge and awareness, consumers will not only be more likely to purchase organic vegetables but also become advocates for healthy lifestyles within their communities. Therefore, organic vegetable marketers and producers need to collaborate with educational and health institutions to design effective educational programs that can reach various segments of the population and increase the adoption of organic products as part of their daily diets.

Demographics, such as age, education, and income, have a significant influence on consumers' decisions to purchase organic products. Research by [21] Research shows that younger and more educated individuals tend to prefer organic vegetables, as they are more aware of health and sustainability issues. Furthermore, income is also a key factor, with higher-income consumers typically more able to afford organic produce, which often comes at a premium. On the other hand, psychographic factors, such as lifestyle, values, and attitudes toward health, also have a significant impact. Consumers who prioritize healthy eating and well-being are generally more open to adopting organic products. [21] revealed that environmental values and ecological awareness are the main drivers for consumers choosing organic vegetables, as they believe their choice can have a positive impact on the environment. Conversely, consumers who focus more on practicality and price may be less inclined to switch to organic products. Therefore, a deeper understanding of consumer demographic and psychographic characteristics can help producers and marketers develop more effective marketing strategies to appeal to different population segments and encourage wider adoption of organic products.

CONCLUSION

In the context of increasing consumer interest in organic vegetables, it can be concluded that several key factors influence their purchasing decisions, namely perceived health benefits, price, accessibility and availability, credibility and labeling, and consumer education and awareness. Positive perceptions of health benefits and food safety are the main drivers for consumers to choose organic vegetables, although higher prices are often a barrier for those on a budget.

Good accessibility and availability are also crucial; the easier it is for consumers to obtain organic products, the more likely they are to purchase them. Credibility, through clear and reliable labeling, helps increase consumer confidence in product quality. Furthermore, education about the benefits of organic vegetables can raise consumer awareness and encourage them to make healthier decisions. Equally important, demographic and psychographic factors determine consumer preferences and behavior, suggesting that effective marketing strategies must take these characteristics into account.

With the combination of all these factors, organic vegetable producers and marketers are expected to develop a more holistic and responsive approach to consumer needs, thereby encouraging more people to switch to healthier and more sustainable diets. Continuously increasing public education and awareness have the potential to shift their perceptions and purchasing habits toward more responsible and sustainable consumption.

REFERENCES

[1] B. Dipokusumo and A. Hidayati, "Persepsi Konsumen Terhadap Sayuran Organik dan Pengaruhnya Terhadap Minat Beli di Kota Mataram," *AGROTEKSOS*, vol. 29, no. 2, pp. 70–78, Mar. 2020, doi: 10.29303/AGROTEKSOS.V29I2.406.

[2] C. Ermiati, D. Amanah, S. Utami, and D. A. Harahap, "Minat Beli Konsumen Terhadap Sayuran Organik Pada Pasar Tradisional Ditinjau Dari Persepsi Harga Dan Sikap Konsumen (Studi Pada Pasar Sambas Medan)," *Tirtayasa Ekonomika*, vol. 16, no. 2, pp. 282–295, Oct. 2021, doi: 10.35448/JTE.V16I2.10324.

[3] D. Kurniasari, "ANALISIS PERSEPSI KUALITAS DAN PERSEPSI HARGA TERHADAP MINAT BELI MELALUI SIKAP KONSUMEN PADA SAYUR ORGANIK SECARA ONLINE DI SURABAYA," 2021.

[4] A. Naibaho, "Pengaruh Lama Fermentasi Pupuk Organik Cair Kombinasi Kipahit, Daun Kelor dan Jerami Padi Terhadap Kandungan NitrogendanKalium," 2019, *Fakultas Keguruan dan Ilmu Pendidikan Universitas Sanata Dharma*. [Online]. Available: http://repository.usd.ac.id/id/eprint/34710

[5] B. Rahardjo, B. M. B. Akbar, Y. Iskandar, and A. Shalehah, "Analysis and strategy for improving Indonesian coffee competitiveness in the international market," *BISMA (Bisnis dan Manajemen)*, vol. 12, no. 2, pp. 154–167, Apr. 2020, doi: 10.26740/BISMA.V12N2.P154-167.

[6] J. F. Hair, W. C. Black, B. J. Babin, R. E. Anderson, and R. L. Tatham, *Multivariate Data Analysis 6th Edition*. New Jersey. Humans: Pearson Prentice Hall, 2006.

[7] H. Vuong, D. Pannell, S. Schilizzi, and M. Burton, "Vietnamese consumers' willingness to pay for improved food safety for vegetables and pork," *Australian Journal of Agricultural and Resource Economics*, vol. 68, no. 4, pp. 948–972, 2024, doi: 10.1111/1467-8489.12577.

[8] S. Srinieng and G. Thapa, "Consumers' perception of environmental and health benefits, and consumption of organic vegetables in bangkok," *Agricultural and Food Economics*, vol. 6, no. 1, 2018, doi: 10.1186/s40100-018-0100-x.

[9] V. Rădulescu, I. Cetină, A. Cruceru, and D. Goldbach, "Consumers' attitude and intention towards organic fruits and vegetables: empirical study on romanian consumers," *Sustainability*, vol. 13, no. 16, p. 9440, 2021, doi: 10.3390/su13169440.

[10] E. Varese, M. Cesarani, and M. Wojnarowska, "Consumers' perception of suboptimal food: strategies to reduce food waste," *British Food Journal*, vol. 125, no. 1, pp. 361–378, 2022, doi: 10.1108/bfj-07-2021-0809.

[11] C. Ssemugabo, A. Bradman, J. Ssempebwa, and D. Guwatudde, "Consumer awareness and health risk perceptions of pesticide residues in fruits and vegetables in kampala metropolitan area in uganda," *Environ Health Insights*, vol. 17, 2023, doi: 10.1177/11786302231184751.

[12] E. Goryńska-Goldmann, A. Murawska, and G. Balcerowska-Czerniak, "Consumer profiles of sustainable fruit and vegetable consumption in the european union," *Sustainability*, vol. 15, no. 21, p. 15512, 2023, doi: 10.3390/su152115512.

[13] N. Geng, Z. Liu, X. Han, and X. Zhang, "Influencing factors and group differences of urban consumers' willingness to pay for low-carbon agricultural products in china," *Int J Environ Res Public Health*, vol. 20, no. 1, p. 358, 2022, doi: 10.3390/ijerph20010358.

[14] A. Fuentes, E. Tormo, J. Baviera, and I. Fernández-Segovia, "Importance of the origin, organic production and other extrinsic parameters in fruit and vegetable choices," *Food Science and Technology International*, vol. 31, no. 4, pp. 275–286, 2023, doi: 10.1177/10820132231206413.

[15] J. Arenas-Gaitán, B. Peral, and J. Reina-Arroyo, "Local fresh food products and plant-based diets: an analysis of the relation between them," *Sustainability*, vol. 12, no. 12, p. 5082, 2020, doi: 10.3390/su12125082.

[16] R. Setiawati, "Integrated digital payment, digital marketing, and pricing perception for decision purchase of fruits and vegetables e-commerce," *E3s Web of Conferences*, vol. 426, p. 2125, 2023, doi: 10.1051/e3sconf/202342602125.

[17] D. Sekabojja, A. Atuhaire, V. Nabankema, D. Sekimpi, and E. Jørs, "Consumer risk perception towards pesticide-stained tomatoes in uganda," *PLoS One*, vol. 18, no. 12, p. 247740, 2023, doi: 10.1371/journal.pone.0247740.

[18] R. Oktaviani, P. Naruetharadhol, S. Padthar, and C. Ketkaew, "Green consumer profiling and online shopping of imperfect foods: extending utaut with web-based label quality for misshapen organic produce," *Foods*, vol. 13, no. 9, p. 1401, 2024, doi: 10.3390/foods13091401.

[19] T. Ha, S. Shakur, and K. Pham, "Food risk in consumers' eye and their consumption responses: evidence from hanoi survey," *Journal of Asian Business and Economic Studies*, vol. 28, no. 2, pp. 86–100, 2020, doi: 10.1108/jabes-12-2019-0126.

[20] S. Godrich *et al.*, "Australian consumer perceptions of regionally grown fruits and vegetables: importance, enablers, and barriers," *Int J Environ Res Public Health*, vol. 17, no. 1, p. 63, 2019, doi: 10.3390/ijerph17010063.

[21] A. Varaldo, D. Borra, E. Vassallo, F. Massimelli, S. Massaglia, and V. Merlino, "A study on perceptions towards organic and local production, and individuals' socio-demographic and geographical affiliation influencing fruit and vegetable purchasing preferences of eu households," *Horticulturae*, vol. 8, no. 8, p. 670, 2022, doi: 10.3390/horticulturae8080670.