

Consumers' organic durian buying experience in Malaysia (Pengalaman pengguna terhadap pembelian durian organik di Malaysia)

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Keywords: market potential, consumer purchase behaviour, organic durian, willingness to buy

Abstract

Global demand for durian has witnessed a notable upswing, with China taking lead as the primary consumer. This tropical fruit is mainly grown in Asian countries such as Thailand, Indonesia, Malaysia, Vietnam and Laos. Nevertheless, the increasing demand has sparked concerns regarding the excessive use of unauthorized pesticides and artificial ripening agents in the durian industry, posing potential risks to both the environment and human health. Recognizing the demand for organic produce, durian plantations are also shifting towards organic practices indirectly. This study explores consumer experiences with organic durian in Malaysia. It was conducted online with a general sample of 400 respondents, followed by a smaller sample size of 30 individuals who have experience in purchasing organic durian. The findings reveal a modest positive perception (38.5%), while others show disinterest in buying due to high prices, a perceived lack of difference in taste and nutrition between organic and non-organic (conventional) fruits, and uncertainty about the location of the organic fruit market. Factors such as health consciousness, environmental considerations and perceived quality emerge as significant drivers influencing consumers' intentions to choose organic durian. In essence, this research contributes insights into understanding consumer purchasing experiences regarding organic durian in the Malaysian context. This information is hoped to generate more strategies for farmers and sellers to attract a larger consumer base in the future.

Introduction

Recognised as the 'king of fruits', durian holds a prominent position as a sought-after tropical fruit with noteworthy economic and cultural implications. The global demand for durians has experienced a remarkable 400% year-on-year surge, primarily driven by an enthusiastic "craze" for the fruit in China, where over the past two years, imports have reached USD \$ 6 billion, constituting a substantial 91% share of the total global demand (Lee 2023). The cultivation

of durian involves diverse agricultural practices, between organic and non-organic methods. Organic and non-organic foods differ primarily in their farming practices of synthetic additives for pesticide and fertiliser. Existing research primarily focuses on yield and economic aspects, neglecting crucial dimensions such as environmental sustainability, product quality and long-term viability. Consequently, there is a pressing need to investigate and compare the two cultivation methods to gain a

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holistic understanding of their impact on ecosystems, consumer health and the overall sustainability of durian farming. As it is undoubted that the usage of chemical input contributes extensively to the deterioration of environment and risking consumers health.

Due to growing consumer awareness on health and environmental concerns, the demand for organic food products, including durian, has experienced a notable surge. The organic food market witnessed an impressive increase in value, rising from RM 1 billion in 2001 to RM12 billion in 2016 (Jaffery et al. 2020; Willer and Lernoud 2018). This upward trajectory is projected to persist, with an anticipated annual growth rate of 12.4% until 2030 (Safari et al. 2023). In response to the escalating demand for organic produce, durian plantations have witnessed a discernible shift towards the adoption of organic practices. This trend is propelled by consumers' preference, as consumer perception exerts a pivotal influence on purchasing decisions, especially in the context of organic products. Hence, challenge inherent in organic agricultural production lies in its high costs and its association with slow growth rates and relatively modest yields.

The growing awareness and acceptance of organic farming have significantly changed how consumers view and buy products. Therefore, a comprehensive study to understand consumer experienced towards organic durian in the Malaysian context and provide information to align the production and marketing strategies with consumer needs. Ultimately, this study aims to investigate market competitiveness and understand consumer satisfaction in the organic durian sector, while also promoting sustainable and eco-friendly agricultural practices in the durian industry.

Literature review

Health benefit of organic food

Research conducted by Tsakiridou et al. (2008) underscores that consumers perceive organic food as healthier, devoid of chemical pesticides and fertilisers, and more ecologically friendly compared to conventionally farmed counterparts. These perceptions are driven by the aspiration to maintain a wholesome lifestyle and mitigate potential risks associated with traditional agricultural methods. A study conducted by Song and Kanesh (2020) revealed a consistent annual increase of 12.4% in the acceptance of organic products in Malaysia during the period from 2016 – 2020. Among the various segments of organic agricultural products are vegetables, fruits, dairy, meat, fish, nuts and frozen goods.

Organic farming prohibits the use of synthetic pesticides and emphasises natural pest control methods. Research has consistently demonstrated that organic produce has significantly lower pesticide residue levels than conventionally grown produce (Volakakis et al. 2014). Within the realm of organic farming, the system follows the principles of sustainability in input and employs environmentally friendly techniques, including intercropping, crop rotation, mulching, soil structure improvement, fertility enhancement and recycling (Sharma and Singhvi 2018). Several studies highlight potential benefits of organic produce, focusing on both the general and specific research on nutritional composition and health benefits. Organic varieties of the same foods have been found to possess higher nutritional value, containing elevated levels of vitamin C, iron, magnesium and phosphorus, while displaying lower levels of pesticides (Crinnion 2010; Średnicka-Tober et al. 2016). However, the scientific evidence supporting significant nutritional differences between organic and conventional products is debated, which can create confusion and scepticism among consumers (Dangour et al. 2009). Nevertheless, as a means to

promote a healthy lifestyle, encouraging individuals to consume organic food serves as a preventive measure against excessive residues that could potentially harm human health.

Purchasing experience in organic durian

In the step of positioning of organic food, establishing and maintaining consumer trust stands as a pivotal challenge. Many consumers lack the expertise, knowledge and resources required to discern the unique attributes of organic food, making it a form of credence quality (Nuttavuthisit and Thogersen 2017). Notably, organic produce comes with a higher price tag. According to USDA, the organic premium ranges from 7% for fresh spinach to a substantial 82% for eggs (Tejvan 2019). The higher prices of organic products can be attributed to the high costs associated with their production. Labour intensive methods for weed and pest control emerge as significant challenges in organic farming. Additionally, a factor contributing to the higher prices is the element of price discrimination. The demand for organic products is typically linked to consumers with higher disposable incomes, displaying an inelastic demand for food. Essentially, organic food is perceived as a luxury item. As incomes rise, consumers become more willing to allocate a larger percentage of their income to organic alternatives rather than conventional ones. This trend extends to fruits, including the exotic durian. While the global market for durian may not be as extensively promoted and primarily caters to Asian stores, its price is anticipated to rise above conventional options. This trend underscores the broader economic principle observed in the organic food market, where consumer willingness to pay a premium aligns with an increase in income, demonstrating a shifting preference towards luxury organic goods.

In the context of durian experiences, a study conducted by Safari et al. (2023) revealed that regular consumers of organic durian reported no adverse side effects, such

as gastrointestinal discomfort or increase on body temperature. As a result, they also displayed a heightened willingness to engage in subsequent purchases. Some customers have noted that the bitterness and sweetness of organic durian are harmoniously balanced, resulting in a less intense and sweeter flavour profile. Individuals who do not appreciate the robust taste of conventional durian may find this more moderated flavour preferable. The study on the intention to consume health and safety durian was conducted by Nuyuth (2021), who found that attitudes and health consciousness significantly affect consumers' intention to purchase among consumers.

In terms of pricing, the cost of organic durian experiences an increase, ranging from 30 – 35% or RM10 – 20/kg. To illustrate, the retail price for organic Musang King stands at RM50 – RM60/kg, in contrast to non-organic Musang King priced at RM35 – 40/kg. The pricing of organic products in Malaysia is renowned for being higher than in other countries, exhibiting a significant disparity of 100% to 300%, as opposed to a more modest 25% to 30% difference observed in the United States and the European Union (EU) (Somasundram et al. 2016).

Methodology

A cross-sectional quantitative research method using a structured online questionnaire was used in the study. The study employed a simple random sampling technique, involving respondents from all across Malaysia and restricted for aged above 20. Various methods of dissemination, including public announcements, emails, mass media and personal contacts, were utilised to widen the search for respondents. The survey was conducted over a span of two months, from 1st April to 30th June 2022. The participants were invited to take part in the study using Google Form, an online survey collection tool. The survey took approximately seven to ten minutes to complete. The prevailing consensus among

statisticians is that a minimum sample size of 100 (10%) is required for obtaining meaningful results, provided it does not exceed 1,000. Saleh and Bista (2017) and Krjcie and Morgan (1970) recommended a sample size of 366 for a population of 7,500. In this research, we gathered a total of 400 responses, leading to a response rate of 5.3%. The presentation of results begins with a broad overview of organics, progressing from a general understanding to a more in-depth exploration of organic fruits and, finally, to organic durian. It's important to note that the group of respondents who are experienced consumers of organic durian is relatively small, consisting of 30 individuals. Consequently, a descriptive analysis was employed to gain preliminary insights into their purchasing experiences.

The questionnaire was structured into four sections: demographics, consumer awareness, general knowledge and purchasing experiences specifically related to organic durian.

Results and discussion

Table 1 presents information on the demographics of the respondents ($n=400$) who completed the online questionnaire. A total of 63.75% (255 individuals) consisted of female respondents, while the remaining 36.25% (145 individuals) were male respondents. The majority of respondents fell into the age group of 31 – 40 years (47.50%), followed by 41 – 50 years (26.75%), and those under 30 years (21 – 30 years; 16.00%). Other relevant parameters include income, household size

Table 1. Respondent profile ($n=400$)

Item	Category	Percentage (%)	Frequency
Gender	Male	36.25	145
	Female	63.75	255
Age	18 – 20 year	3.25	13
	21 – 30 year	16.00	64
	31 – 40 year	47.50	190
	41 – 50 year	26.75	107
	51 – 60 year	5.50	22
	> 60 year	1.00	4
Household income	≤RM2,500	24.25	97
	RM2,501 – RM4,850	28.25	113
	RM4,851 – RM7,100	19.25	77
	RM7,101 – RM10,970	17.25	69
	RM10,971 – RM15,040	8.00	32
	>RM15,041	3.00	12
Household member	1 – 2 person	15.75	63
	3 – 4 person	38.75	155
	5 – 6 person	35.50	142
	7 – 8 person	8.50	34
	9 – 14 person	1.50	6

Income level:

* B40: ≤RM4,850

** B40: RM4,851 – RM10,970

*** T20: ≥RM10,971

and occupation, which are crucial factors influencing the tendency to purchase and consume organic fruits. This is significant as it reflects social class and impacts purchasing patterns (Mohd Zafrie et al. 2018). The majority of households had between 3 – 6 members (74.25%) and the highest income group among respondents belonged to the B40 income group, earning less than RM4,851 (52.50%). This group significantly represents the majority of Malaysia’s population in the lowest 40% income level. The second group had incomes ranging from RM4,801 – RM7,100 (19.25%), and the rest is incomes exceeding RM7,101 (28.25%). When combined, these two groups make up 47.50%, falling within the M40 to T20 income groups, which is nearly balanced with the B40 income group. It is widely known that the prices of organic produce are higher in the market. Therefore, inferential analysis was conducted to examine the relationship between income, household size, consumer acceptance and the consumption of organic durian.

General knowledge and awareness on organic produce

Organic produce is free from the use of chemicals. However, this definition has more detailed aspects that explain the true concept. In this study, respondents were questioned based on their understanding and experience regarding knowledge of organic

agricultural products. *Figure 1* shows that 29.8% of respondents (119 individuals) agreed that organic produce is a product without any chemicals, such as synthetic fertilisers and pesticides. Meanwhile, 18.2% agreed that organic farming methods are a production system to maintain soil fertility, the environment and the health of organic products, as evidenced by a valid logo in the market. About 14.6% agreed that organic products are natural resources that without use antibiotics and hormones and GMOs (genetically modified organisms) (12.0%). Backyard cultivation (7.2%) was the least popular concept, while 1% of respondents had no information about organic.

Figure 2 demonstrates the sources of information obtained related to organic matters. The majority of respondents acquire information through social media (26.5%), such as Facebook, Instagram, Twitter and other applications and broadcast media (25.5%), like television and radio. Both of these sources are considered the most significant and effective platforms for any promotional activities and dissemination related to organic matters. Additionally, among other sources that can be utilised are printed media such as flyers and billboard (21.5%), the influence of friends and acquaintances, and immediate family members, each accounting for 14.5% and 12.0%, respectively.

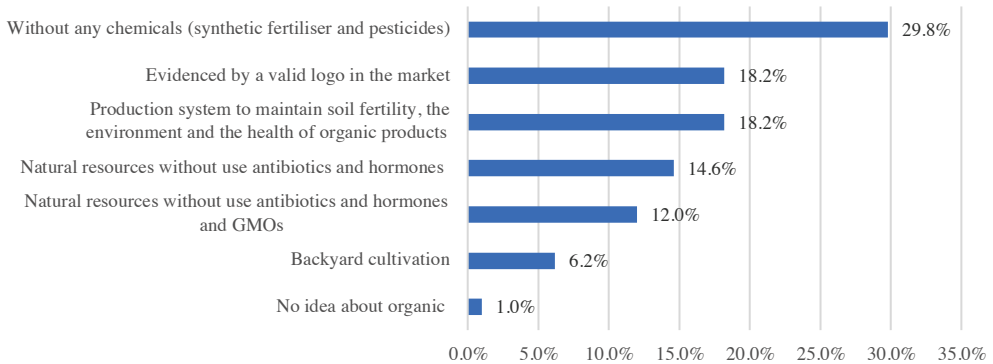


Figure 1. Basic info of organic products

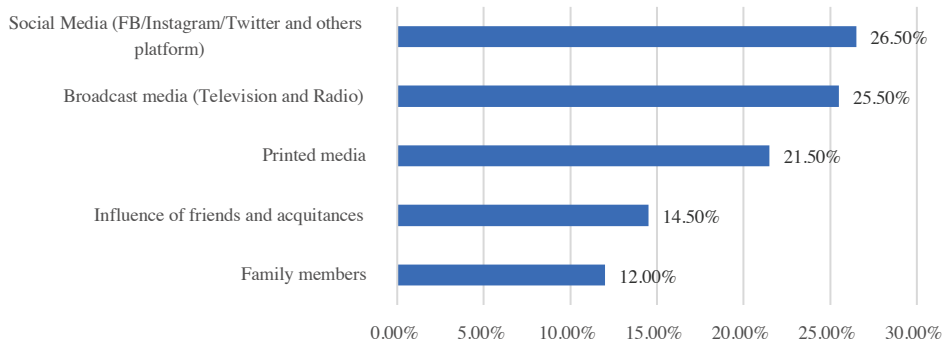


Figure 2. Organic source information

Figure 3 illustrates the factors influencing the buying of organic products among respondents. On average, respondents have their own motivations for buying organic products, including purchasing for health reasons (27.5%), followed by the better quality and taste (19.6%), contributing to environmental benefits (17.6%), and self-awareness (16.0%). Other factors below 10 percent include market support (7.8%), longer shelf life (6%) and influence from family and friends (5.6%).

Organic fruit consumers

From 400 respondents, 307 respondents agreed to have purchased organic products, 76.9%, and out of them, about 236 individuals, have experience in buying organic fruits. Subsequent questions related to the specific categories, 35.2% (83 individuals) agreed to having imported organic fruits, such as grapes, strawberries, apples and avocados. Meanwhile, 64.8% (153 individuals) agreed to having local organic fruits, including bananas, durians, jackfruits, mangoes, papayas, guavas and dragon fruits. For durians, the percentage is 19.6% (30 individuals) (Figure 4).

Table 2 illustrates the user profile of organic durian among a sample of 30 individuals. This group comprises 56.671% males, accounting for 17 individuals and 43.33% females, totalling 13 individuals. The majority of users fall within the age

range of 31 – 40 years, representing 43.33% or 13 individuals. Moreover, these users have a monthly income below RM4,850, placing them under the B40 income category.

Figure 5 shows how people buy organic durians. It reveals that 63.4% of the respondents, which is 19 people, purchase organic durians once a year. Following that, 24.4% (7 individuals) buy them every 6 months, 3.7% (1 person) buy them monthly and 8.5% (3 people) make multiple monthly purchases. Because organic durian production varies with the seasons, it can be challenging to find them in the market when you want them. As a result, some individuals choose to secure their supply by either pre-ordering through distributors or buying directly from the farm.

While Figure 6, displays the expenditure distribution of respondents for a single purchase of organic durians. The majority, at 49.3% (15 people), spend less than RM30/kg, followed by 41.1% (12 people) in the RM30 – RM59 range, 8.2% (2 people) at a higher price and 1.4% (1 person) at an even higher price. Research findings by Safari et al. 2023 reveal that there is no substantial price difference between organic and conventional durians, falling within the RM10 – RM15/kg range. This phenomenon is attributed to the limited attention and supply in the organic durian market. Consequently, when the supply

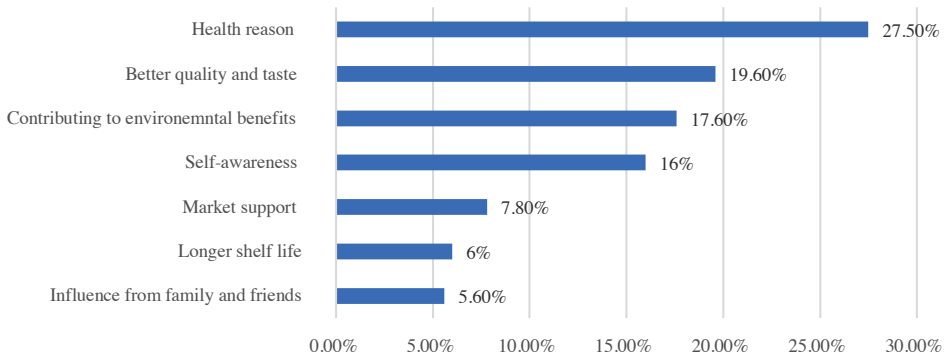


Figure 3. Organic buying factor among consumer

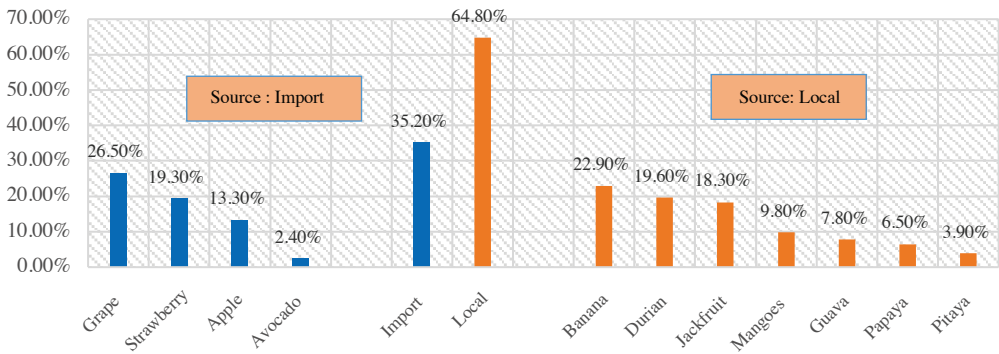


Figure 4. Organic fruits purchased by consumer in local market

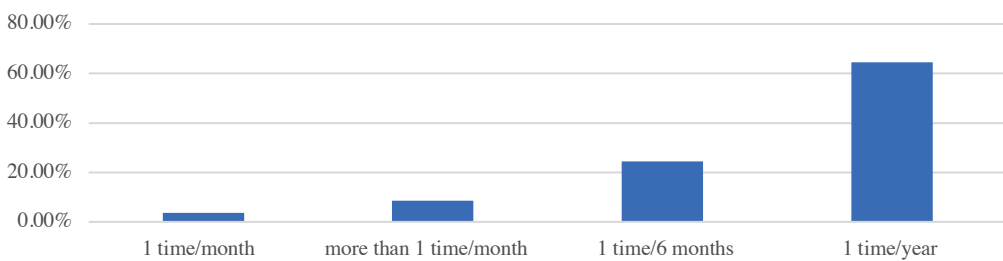


Figure 5. Frequency of purchasing organic durians

Table 2. Profile of respondents using organic durian (n=30)

Item	Category	Percentage (%)	Frequency
Gender	Male	56.67	17
	Female	43.33	13
Age	18 – 20 year	3.33	1
	21 – 30 year	23.33	7
	31 – 40 year	43.33	13
	41 – 50 year	20.0	6
	51 – 60 year	6.68	2
	> 60 year	3.33	1
Household Income	≤RM4,850	60.0	18
	RM4,851 – RM7,100	13.33	4
	RM7,101 – RM10,970	13.33	4
	RM10,971 – RM15,040	6.67	2
	>RM15,041	6.67	2

Income level :

* B40: ≤RM4,850

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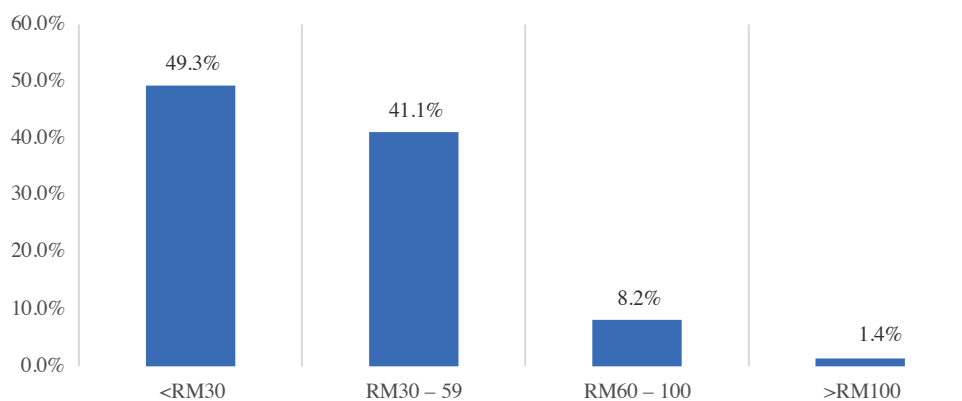


Figure 6. Price of purchasing organic durians per purchase

exceeds demand, organic durians are sold to conventional buyers at standard durian prices due to competitive factors.

Willingness to buy

Respondents were also asked about the potential for organic durian in the local market. About 38.5% respondents agreed to buy organic durians if they are available at local markets. 61.5% of respondents, on the other hand, were not interested in buying organic ones (Figure 7). Among the

reasons for lack of interest was the higher price, no perceived difference in taste and nutrition between organic and non-organic (conventional) fruits and uncertainty about the location of the organic fruit market.

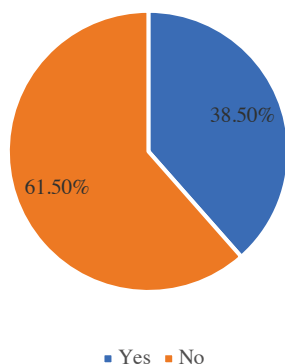


Figure 7. Willingness to buy

Conclusion

The acceptance of organic products is on the rise among the Malaysian population, as people are becoming increasingly aware of the benefits associated with using organic items, extending beyond vegetables to include fruits like durian. Despite the higher prices of organic durian, consumers are open in embracing them. Sales and acceptance of organic durian, in general, remains lower compared to conventional durian. Consumers are notably concerned about the higher prices associated with organic purchases, although it is acknowledged that there is a market, particularly in the premium segment, that prioritises the use of pesticides in cultivation. Therefore, for this organic market segment, a targeted marketing strategy should be considered to attract continuous and interest among buyers. It is recommended that farmers expand their potential by not only selling fruit but also by adopting the concept of an organic ecosystem, offering package deals that include visits to organic farms while enjoying sales. For regular consumers, they will consistently receive produce during its season. Although the potential may seem small, it will be worthwhile with effective consumer engagement and promotions. Furthermore, this study can offer recommendations to the government for implementing various programs aimed at promoting a healthy lifestyle and contributed

to the sustainable development goals (SDGs) towards preserving the environment. In addition, the central agencies should intensify efforts to promote organic durian by offering lectures, conducting promotions and disseminating information through social media to increase consumers awareness on organic products and help to expand the growth of the organic durian industry in Malaysia in the future.

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Abstrak

Permintaan global untuk durian telah mengalami peningkatan yang luar biasa dengan negara China sebagai pengguna utama. Buah tropika ini terutamanya ditanam di negara-negara Asia seperti Thailand, Indonesia, Malaysia, Vietnam dan Laos. Walau bagaimanapun, permintaan yang meningkat telah menimbulkan kebimbangan terhadap penggunaan racun perosak yang tidak dibenarkan dan agen pematangan tiruan dalam industri durian yang boleh menyebabkan risiko kepada alam sekitar dan kesihatan manusia. Menyedari permintaan untuk hasil organik, ladang durian semakin beralih kepada amalan organik. Kajian ini meneroka pengalaman pengguna terhadap durian organik di Malaysia. Ia dilakukan secara dalam talian dengan 400 responden secara umum, diikuti dengan sampel kecil 30 individu yang memiliki pengalaman membeli durian organik. Penemuan menunjukkan persepsi positif yang sederhana (38.5%), sementara yang lain tidak berminat membeli disebabkan harga yang tinggi, tiada perbezaan yang dirasakan dari segi rasa dan nutrisi antara buah organik dan buah bukan organik (konvensional) dan ketidakpastian mengenai lokasi pasaran buah organik. Faktor-faktor seperti kesedaran kesihatan, pertimbangan terhadap alam sekitar dan kualiti yang dirasakan muncul sebagai pendorong penting yang mempengaruhi niat pengguna untuk memilih durian organik. Pada dasarnya, penyelidikan ini menyumbang kepada maklumat dalam memahami pengalaman pembelian pengguna berkenaan dengan durian organik dalam konteks Malaysia. Maklumat ini diharap dapat menghasilkan strategi lebih banyak bagi petani dan penjual untuk menarik lebih banyak pengguna pada masa hadapan.