Fruit and vegetable consumer preferences of Japanese and Vietnam's export potential

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Abstract:

This study analyses consumer preferences of the Japanese for vegetables and fruits using secondary data. Additionally, to analyse Vietnam's potential export of fruits and vegetables, this study interviewed 53 Japanese consumers. The Japanese have long embraced a healthy lifestyle. Eighty percent of the Japanese participants in the survey consume fruit and vegetable products daily or 2-3 times a week. They have a wide range of places from which to purchase vegetables and fruits. From the perspective of Japanese consumers, Vietnamese fruit and vegetable products are more diverse and cheaper than those from the US, China, Thailand, etc. However, their quality is perceived to be inferior to that of these countries. The total value of Vietnamese fruit and vegetable exports to the Japanese market is quite modest, representing less than 2%. Therefore, to promote the export of Vietnamese vegetables and fruits to the Japanese market, Vietnamese enterprises should undertake the following activities simultaneously: (i) Establish an import market assessment room/centre in each Vietnamese exporting enterprise; (ii) Conduct an in-depth market study of fruit and vegetables in Japan; (iii) Improve understanding of consumer culture in Japan; (iv) Ensure quality of exported fruits and vegetables; and (v) Enhance trade promotion activities.

Keywords: **fruit and vegetable, Japan, Vietnam.**

Classification numbers: **2.1, 4.1**

1. Introduction

Japan is an island nation faced with challenging natural conditions due to its predominantly mountainous terrain. The climate is severe, and the country frequently experiences natural disasters such as earthquakes, tsunamis, and volcanic eruptions. These challenges have hampered the development of Japan's agriculture industry, including fruit and vegetable production. As a result, current domestic fruit and vegetable production in Japan can only fulfil about 70-80% of the nation's consumption needs; the remainder is met through imports. This situation presents an opportunity for Vietnamese fruit and vegetable exporters to tap into the Japanese market.

Vietnam is the third-largest fruit and vegetable exporter in the ASEAN region, following the Philippines and Thailand [1]. Over the years, Vietnam's rate of fruit and vegetable exports has seen significant growth. While the growth rate was 32.2% over the five-year period from 2011 to 2016, it rose to 42.4% by the end of 2017. Notably, the export turnover reached 3.81 billion USD in 2018, a 4.85% increase compared to 2017 [2].

Vietnam exports fruit and vegetable products to numerous countries and regions. Apart from traditional markets like China, ASEAN, and Russia, Vietnamese fruits and vegetables have made inroads into more challenging markets such as the US, EU, and Japan. Although Japan consistently ranks within Vietnam's top five fruit and vegetable export destinations [2] and is viewed as a target market, the total value of Vietnamese fruit and vegetable exports to this market remains relatively

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modest, at less than 2%. Hence, to boost the export value of Vietnamese fruits and vegetables to the Japanese market, it's imperative for Vietnamese exporters to understand the preferences of Japanese consumers, particularly with regard to produce from Vietnam. This article aims to analyse the general preferences of Japanese consumers for vegetables and fruits, delve deeper into their perspectives on produce originating from Vietnam, and subsequently suggest strategies to enhance fruit and vegetable exports to the Japanese market in upcoming years.

2. Literature review

The topic of exporting Vietnam's agricultural products, particularly vegetables, and the associated competitive and commercial advantages, has garnered significant attention from domestic researchers, from micro to macro levels. Several studies highlight the importance of promoting trade and bolstering Vietnam's agricultural exports to fully exploit the country's competitive and comparative strengths [3-9].

The study "Exporting fruits and vegetables from Vietnam to the Japanese market" employed descriptive statistics based on secondary data. The findings suggest that the ASEAN-Japan Comprehensive Economic Partnership Agreement has played a role in alleviating tariff barriers linked to Vietnam's agricultural potential. However, technological challenges have resulted in a minimal market share for Vietnam's fruits and vegetables in Japan. Obstacles to exporting Vietnamese fruits and vegetables to the Japanese market encompass: (i) Inferior product quality in comparison to other competitors (standards about quality management, food safety codes, Japanese agricultural standards - JAS, labelling, and packaging regulations), and (ii) Unstable sourcing. This research did not provide a comprehensive assessment of the Japanese market, nor of the preferences, tastes, and evaluations of Japanese consumers regarding fruit and vegetable products, thus the proposed strategies are not tailored to the target market [10].

Examining the competitiveness of juice-exporting nations in the Japanese market, S.T. Feleke, et al. (2009) [11] utilised a market structure analysis method. This method incorporated a time-series regression model to discern and categorise two distinct market structures (homogeneous competition and heterogeneous competition) within the framework of consumer demand theory. The study found that Brazil stands to gain the most when Japanese consumer income rises. Moreover, demographic shifts, particularly the recent negative population growth, influence juice demand in the Japanese market. The research indicates that price elasticity for juice demand is low, making it difficult for most exporters to expand market share through price cuts. Consequently, these exporters tend to concentrate on product promotion and differentiation. This study also predicts that juice demand growth in Japan will decelerate up to 2020, given the nation's declining population.

In the study "The export of Vietnamese fruits and vegetables to the Japanese market", secondary data was used to analyse the Japanese import market and the current status of Vietnamese fruit and vegetable exports to this market. The research primarily highlighted the export turnover of Vietnamese vegetables and fruits to the Japanese market. However, it did not assess the commercial advantage of Vietnam's vegetables and fruits, nor did it compare the commercial advantages of Vietnam's produce with those from other countries exporting to the Japanese market [12].

Other related studies on the fruit and vegetable sector conclude that Vietnam is among the nations with rapidly growing fruit and vegetable industries. Furthermore, research suggests that the added value of Vietnamese agricultural products remains limited, and offers recommendations to enhance this added value in the Vietnamese fruit and vegetable sector. Nevertheless, these studies do not delve into the specifics of Vietnam's fruit and vegetable exports, nor do they present in-depth solutions for these exports [13].

A host of other studies indicate that agricultural export activities are influenced by various factors: the population of the exporting and importing countries (represented by workers engaged in production), GDP per capita (indicative of consumption levels), and the inflation rate of the exporting country. Moreover, a country's export performance is shaped by the consumer base in the importing nation [14-19]. Consistently, multiple studies highlight that for successful agricultural exports, products must meet stringent food safety standards and limit agrochemical residues [16, 20, 21].

Additionally, there are other studies on competition, overall competitiveness, and the competitiveness of specific Vietnamese agricultural products when exported globally [22-25]. These studies also include research into the competitiveness of Vietnam's export tea industry

[26] and the coffee industry [27], among others. Several investigations have highlighted that investing in agricultural products remains a pressing concern for the Vietnamese government [28]. Despite its capability to produce a broad range of high-quality agricultural items, the majority of Vietnam's agricultural outputs are exported in their raw form, remaining unfamiliar to international consumers. Vietnam's fruit and vegetable sector lacks a consistent brand, international geographical indication certificates, GlobalGAP standards, and so forth. Consequently, Vietnamese fruits and vegetables have yet to secure a strong position in the global market, with their quality often being compared to produce from other regions, leading to a declining brand reputation [29, 30].

Few studies focus on the taste preferences of importing countries, such as Japan, when considering solutions for exporting fruits and vegetables from one region or country. Most research pertains to general fruit and vegetable exports. Thus, the topic "Fruit and vegetable consumption tastes of Japanese people and Vietnam's export potential" is a crucial area of investigation. This study aims to offer insights that could enhance the export turnover of Vietnamese vegetables and fruits to the Japanese market.

3. Methodology and data

3.1. Data collection methods

Secondary data were collected from the Statistical Yearbooks of Vietnam, the statistics of the Vietnamese Ministry of Agriculture and Rural Development in 2020, the Vietnamese General Department of Customs, and the Department of Cultivation and Plant Protection of Vietnam.

Primary data were gathered from interviews with Japanese consumers and Vietnamese enterprises exporting vegetables and fruits to the Japanese market.

Initially, this study selected a random sample of 53 Japanese consumers. For this group, primary data encompassed general information about Japanese consumers (age, gender, education, occupation, etc.); frequency of purchasing fruit and vegetable products; places of purchase; preferred fruit and vegetable products; and evaluations of the quality, price, design, variety, etc., of Vietnam's fruit and vegetable products.

Subsequently, the survey selected a sample of 73 Vietnamese enterprises exporting vegetables and fruits to the Japanese market. According to data from the General Department of Vietnam Customs in 2019 [31] and the Department of Agricultural Product Processing and Market Development, Ministry of Agriculture and Rural Development in 2020, the total number of enterprises exporting vegetables and fruits (both fresh and processed) to Japan was 263. Thus, based on the Slovin formula with a permissible error of 10%, the random sample chosen encompassed 73 enterprises. Within each enterprise, five individuals associated with exporting vegetables and fruits to Japan were interviewed. These interviewees included a director, a deputy sales director responsible for the enterprises' fruit and vegetable export activities, and three employees involved in the export activities of the vegetables and fruits to the Japanese market. Here, the primary data centred on Vietnamese enterprises' evaluations of the demand and market potential for Japanese fruit and vegetable products.

3.2. Analysis methods

Descriptive and comparative method: Utilising descriptive statistical parameters such as absolute number, relative number, mean, etc., to analyse the volume and value of Japan's fresh fruit imports in 2019; import turnover and growth rate of the Japanese market's fruit and vegetable imports from 2014 to 2019; the value of Japan's vegetable and fruit imports from Vietnam; and the characteristics of Japanese consumers.

Scoring and analysis of the Likert scale: This method was employed to score criteria and factors influencing the export of Vietnam's vegetables to Japan. Factors considered include habits and consumption patterns of Japanese consumers; preferences of Japanese consumers regarding Vietnamese fruits and vegetables; consumption trends of Japanese individuals for Vietnamese vegetables and fruits; income levels of Japanese consumers; and requirements and standards for Japanese fruit and vegetable imports.

The significance of each mean value on the Likert scale is represented as:

Distance value = (Maximum - Minimum)/n=(5-1)/5=0.8

The interpretations for the 5 levels on the Likert scale are as follows: "1.00-1.80: strongly disagree/very dissatisfied/very inconsequential; 1.81-2.60: disagree/dissatisfied/not important; 2.61-3.40: neutral/no opinion; 3.41-4.20: agree/satisfied/important; 4.21-5.00: strongly agree/very satisfied/very important".

4. Results and discussion

4.1. Japanese consumption market for imported fruits and vegetables

Japanese consumption market for imported fruits and vegetables: Japan is a significant consumer market for fruits and vegetables, with the Japanese populace demonstrating a consistently high demand for vegetables [32]. Notably, the budget allocated for vegetables and fruits in the total cost of living has seen an increase among the Japanese in recent years [32]. Moreover, products like juices, snacks, ice creams, and supplements made from fresh fruits and vegetables are also favourites among the Japanese. The substantial demand for fruits and vegetables in Japan can be attributed to a traditionally vegetable-based diet, heightened national health consciousness, and the availability of a diverse range of fruits and vegetables. Nonetheless, due to the ageing population, there is a decrease in the number of working-age individuals, leading indirectly to a reduction in domestic fruit and vegetable production. This, combined with the high selling prices, means that Japan has a significant reliance on imports to satisfy consumer needs [33].

Japan's primary sources of vegetable and fruit imports are China, the US, the Philippines, Mexico, and New Zealand. China stands as the dominant export market, accounting for nearly one-third of Japan's total fruit and vegetable imports in 2019. China's most significant contributions come from fresh and processed vegetables. This is closely followed by the United States, which holds about an 18% market share of the total value of Japan's fruit and vegetable imports (Fig. 1).

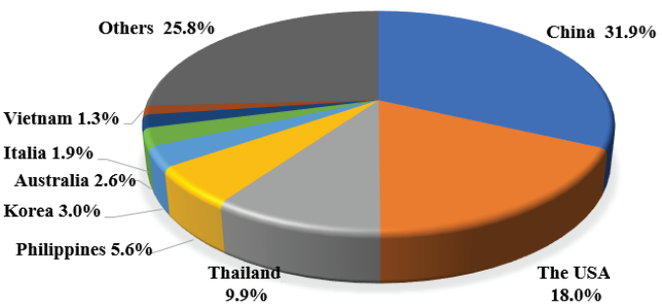

Fig. 1. The proportion of vegetables and fruits imported to Japan from other countries in 2019. Source: International Economic and Trade Organization (2020).

From 2016 to 2018, Japan spent nearly one hundred billion USD annually on importing vegetables and fruits, with the growth rate of fruit and vegetable imports in the Japanese market averaging 1.7% per year. By 2020, the total import turnover for Japan reached $9.38 billion; this comprised $2.31 billion for fresh fruits and vegetables and $3.55 billion for processed ones. The demand for fresh fruit and vegetable imports in Japan seemed to have reached a plateau during the 2016-2020 period. In contrast, there remains growth potential for the import of processed fruit and vegetable products (Table 1).

Table 1. Import turnover of vegetables and fruits of Japan [34].

HS code	Product group	Import turnover (unit: million USD)					Average (%)
		2016	2017	2018	2019	2020	
07	Edible vegetables, tubers, and stems	24,685.9	24,950.7	25,829.4	24,703.1	23,123.4	98.4
08	Edible fruit and rind	31,604.0	31,572.6	34,333.7	34,654.0	35,193.5	102.7
20	Processed vegetables, fruits, nuts, and parts of plants	31,470.3	33,164.6	35,335.9	35,328.3	35,556.0	103.1
Total		87,760.3	89,687.9	95,499.0	94,685.3	93,872.9	101.7

In the period from 2014 to 2019, the average demand of the Japanese market for fresh fruit was estimated at 5.3 million tonnes per year. In 2019, Japan imported a third of fresh fruits (about 1.7 million tonnes), with bananas having the highest import volume (accounting for 58.6%) (Fig. 2).

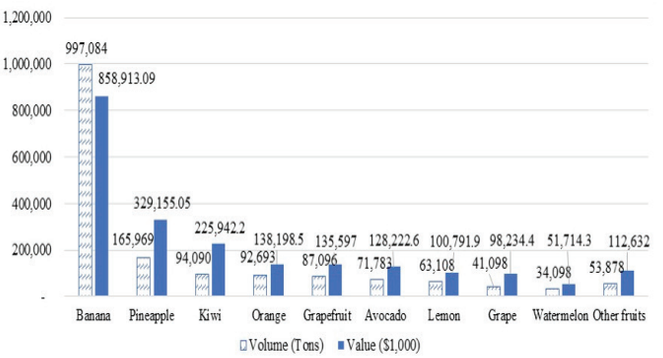

Fig. 2. Imported volume and value of fresh fruits in the Japanese market in 2019 [32].

According to the USDA (2019), overall, the Japanese demand for fresh fruit has decreased in recent years due to competition from processed goods (snacks or other desserts), especially among young Japanese consumers [32]. However, the demand for fresh fruit from the Japanese elderly has increased because it is sweet, easy to peel, and simple to prepare. This presents an export opportunity for Vietnam's tropical fruits, such as bananas,

mangoes, dragon fruit, and lychees, to the Japanese market. The demand in the Japanese market for these fresh fruits is substantial, whilst domestic production can only supply a small fraction. The yield of lychees grown in Japan meets just 5% of the domestic market, with the harvesting season being quite brief (from mid-June to mid-July). Consequently, domestic lychees are sold as a premium product, particularly those grown in the Miyazaki province. In this province, lychees can be sold directly from farmers to consumers, fetching prices of nearly $10 per fruit. If Vietnam capitalises on seasonality and employs processing technology, they could supply fresh, frozen, or canned lychees to Japanese consumers year-round.

The Japanese demand for imported processed fruit products, such as canned, frozen, and dried, has remained consistent over the past six years. The total volume of processed fruit imported into Japan in 2019 was 415 thousand metric tonnes [35], a decrease of 0.4% compared to the previous year. Nonetheless, this import value in 2019 exceeded 1 billion USD, marking a 4.0% increase compared to 2018 (Fig. 3). Japanese farmers have always prioritised the production of fresh fruit, with the exception of certain areas dedicated to fruit juice processing. Therefore, the Japanese market will continue to depend on imports of processed fruit products to satisfy consumer demand.

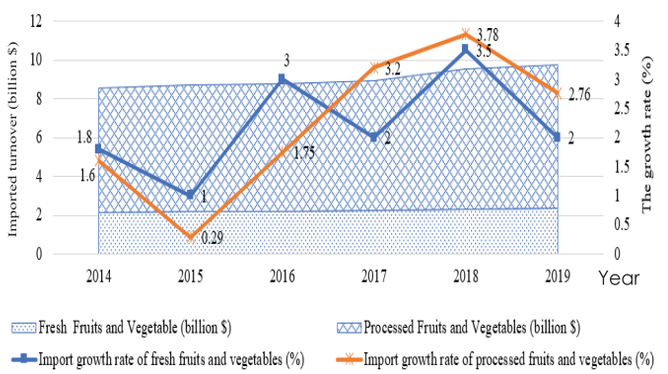

Fig. 3. Imported turnover and growth rate of fruits and vegetables in the Japanese market from 2014 to 2019 [32].

4.2. Imported Vietnamese fruits and vegetables in Japan from 2016 to 2020

According to evaluations from managers, officers, and employees of enterprises exporting vegetables and fruit to Japan, the potential demand of the Japanese market for imported fruits and vegetables is substantial compared to other markets. Concurrently, the results of this survey also indicate that the Japanese demand and market potential for fruit and vegetable products are promising, based on the Likert scale (Table 2). The meanings of the 5 levels on the Likert scale are: "1.00-1.80: very disagree/strongly dissatisfied/very inconsequential; 1.81-2.60: disagree/dissatisfied/not important; 2.61-3.40: no opinion/average; 3.41-4.20: agree/satisfied/important; 4.21-5.00: strongly agree/strongly satisfied/very important".

Table 2. Assessment of 73 Vietnamese enterprises on the demand and market potential of Japanese fruit and vegetable products.

Items	Average grade	Assessment level (%)					General assessment
		1	2	3	4	5	
1. Habits and consumption of Japanese consumers	3.52	2.27	6.82	34.42	49.68	6.82	Good
2. Consumption tastes of Japanese consumers towards Vietnamese fruits and vegetables	3.48	2.60	7.14	37.01	46.10	7.14	Good
3. Japanese consumption trends of Vietnamese vegetables and fruits	3.43	0.97	6.17	44.16	46.10	2.60	Good
4. Income of Japanese consumers	3.53	1.62	5.84	37.99	47.08	7.47	Good
5. Requirements and standards for Japanese imported fruit and vegetables	3.48	1.95	5.84	40.91	44.81	6.49	Good

Source: Authors' survey (2020).

According to Vietnam's Ministry of Agriculture and Rural Development (2020), the total export value of vegetables and fruits in 2020 reached 3.26 billion USD. Japan's imports of fruits and vegetables from Vietnam were 89.6 million USD in 2016 and increased to 156.5 million USD in 2020 [34]. The export structure of these products remains somewhat consistent: the group of vegetables and stems accounts for about 30%, the group of edible fruits and rinds constitutes roughly 33%, and the remainder consists of processed vegetables, fruits, nuts, and parts of plants (Table 3).

Table 3. Japan's imported value of vegetables and fruits from Vietnam [36].

HS code	Product group	Unit: million USD					Average (%)
		2016	2017	2018	2019	2020	
07	Edible vegetables, tubers, and stems	29.8	30.8	34.1	40.8	31.1	101.1
08	Edible fruit and rind	23	28.9	36.3	34.0	52.7	123.0
20	Processed vegetables, fruits, nuts, and parts of plants	36.8	36.7	40.8	53.6	72.8	118.6
Total		89.6	96.4	111.2	128.4	156.5	115.0

Within the first group (edible vegetables, tubers, and stems), potatoes are predominant, followed by mushrooms, legumes, and carrots. A smaller number

of spices and vegetables are also exported, mainly coriander and perilla. Edible fruits and rinds primarily comprise cashews, dragon fruit, bananas, coconuts, and passion fruit. Processed vegetables are predominantly tropical products such as aubergine, salted papaya, cucumber, and bamboo shoots. Processed fruits include cashews, almonds, jams, apricots of all varieties, and pineapple (Table 4).

Table 4. Some of Vietnam's main export vegetables and fruits to the Japanese market [31].

Edible vegetables, tubers, and stems (HS 07)	Edible fruit and rind (HS 08)	Processed vegetables (HS 20)	Processed fruits, nuts, and parts of plants (HS 20)
Tubers (sweet potatoes, taro), wood ear and mushrooms, okra, cowpeas, peppers, carrots, cucurbits, corn/ frozen maize, eggplant, pickled vegetables, cabbage	Cashews, dragon fruit, mango, banana, coconut, passion fruit, citrus, jackfruit, pineapple, durian, and melon	Mixed processed vegetables, spinach, sweet corn, vegetable soybeans, salted vegetables (e.g., eggplant, papaya, cucumber...), products made from potatoes, bamboo shoots, beans, and mushrooms.	Cashew nuts, almonds, jams, and all kinds of apricots, aloe vera. Fruit juices, frozen pineapple, fresh coconut. Products processed from pineapple, sweet potato, vegetable food, tea

4.3. Regulations on importing fruits and vegetables into the Japanese market

Japan is a potential import market, but it is also a very stringent one. Japan's regulations on the import control of vegetables and fruits are conducted through the tariff quota system. Importers are required to apply to the Department of International Economic Affairs, within the Ministry of Agriculture, Forestry and Fisheries of Japan, to receive a quota within the preferential tariff rate. According to the Plant Protection Law, importing large quantities of fresh vegetables and fruits into Japan can only be carried out at specific airports or seaports equipped to implement plant protection measures, thereby preventing diseases and pests from entering. Consequently, the importing party must identify a suitable seaport or airport for unloading the goods before shipping from the exporting country. Documentation required for the quarantine of goods at Quarantine Stations must be presented immediately after the fruits and vegetables arrive at the port. The Ministry of Health, Labour and Social Welfare, and the Japanese Environment Agency are tasked with establishing and monitoring pesticide residue levels, adhering to the Food Sanitation Law [33]. Therefore, to export fresh and processed vegetables and fruits to Japan, foreign manufacturers need to provide pesticide residue test results and production chain diagrams.

4.4. The Japanese consumers' cultural consumption of fruit and vegetable products

The decline in Japan's population since 2013, coupled with its ageing demographic, is a significant factor impacting the reduced sales of fruits and vegetables (Table 5). Notably, older Japanese consumers typically require fewer calories. Also, many are financially limited, leading to reduced daily food expenditure. Given the country's declining and low birth rate, and with little indication that Japan's immigration policy will shift in the foreseeable future, this demographic trend will continue to influence food patterns both presently and in the mid to long term. As a result, the sales of fruits and vegetables in Japan are anticipated to continue their decline.

Table 5. Characteristics of Japanese consumers.

Item	Unit	Value
1. The number of Japanese consumers	People	53
Male	%	20.75
Female	%	79.25
2. Age		
Under 30 years old	%	15.09
From 31 to 40 years old	%	20.75
From 41 to 50 years old	%	30.19
Over 50 years old	%	33.96
3. Occupation		
Officers	%	13.21
Workers, manual workers	%	18.87
Housewives	%	32.08
Farmers	%	11.32
Others	%	24.53
4. Number of people in the household	People	2.36

Source: Authors' survey (2020).

Elderly Japanese consumers tend to uphold traditional approaches to fresh food shopping. In contrast, the younger generation is more experimental and keen on sampling a variety of foreign foods. Accordingly, the surge in convenience-focused processed food has affected fresh food consumption. The burgeoning presence of affordable fast food outlets offers consumers a wider range of reasonably priced, decent quality food options. A survey of 53 Japanese consumers revealed that the majority (approximately 60%) are over 41 years old. Of this group, about 32% are homemakers, while roughly 32% are officers, workers, or manual labourers. On average, Japanese households comprise 2.4

individuals. This demographic detail significantly impacts the frequency and demand for fruits and vegetables. Given Japan's ageing population, products with healthful ingredients will remain a primary consumer trend. Japanese consumers are inclined to spend more on foods perceived as healthy and safe. Media reports highlighting risks can have a profound and enduring effect on food consumption behaviours in Japan.

The prevailing view among Japanese people is that domestic products are superior. However, the current trend shows that imported goods tend to be cheaper, especially agricultural products (vegetables, fruits) imported from other Asian countries such as Thailand, Vietnam, Indonesia, and Malaysia. As a result, Japanese consumers are becoming increasingly interested in these imported agricultural goods. According to the survey, the frequency of vegetable and fruit consumption by Japanese individuals is rather high. Approximately 80% of respondents reported consuming fruit and vegetable products daily or 2-3 times a week (Fig. 4).

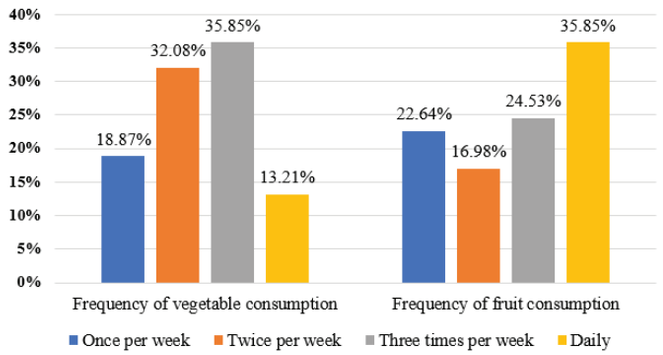

Fig. 4. Frequency of consumption of vegetables and fruits by Japanese consumers. Source: Authors' survey (2020).

The places where Japanese consumers purchase fruit and vegetable products are varied, encompassing supermarkets, department stores, specialised fruit and vegetable shops (both specialty and imported), convenience stores, and online platforms (Fig. 5). Japan's distribution and retail systems are highly developed. With a current shortage of domestic agricultural products, there has been a shift towards imported goods. The survey indicates that Japanese people have a plethora of options when buying vegetables and fruits. This presents an opportunity for Vietnam to establish and grow the supply chain of Vietnamese fruits and vegetables for export to Japan.

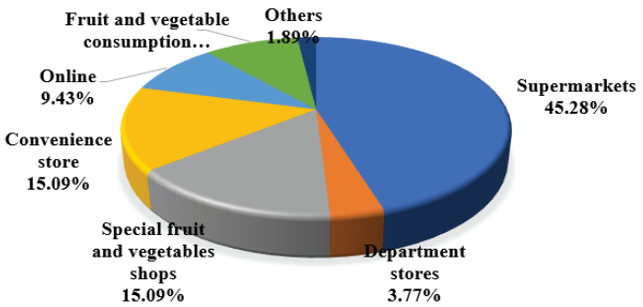

Fig. 5. Places where Japanese consumers purchase fruits and vegetables. Source: Authors' survey (2020).

The survey results show that the types of fruit and vegetable products favoured by the Japanese are diverse, ranging from fresh, frozen, canned, dried, processed, juices, to squashes, and more (Table 6). This contrasts sharply with Vietnamese consumers, who predominantly prefer fresh products. The varied preferences of Japanese consumers offer a significant opportunity for Vietnamese businesses to penetrate and export to the Japanese market. Depending on their unique strengths and advantages, Vietnamese enterprises can select specific products to produce and export to Japan.

Table 6. Preferred fruit and vegetable products of Japanese consumers.

Item	Quantity (n=53)	Percentage (%)
1. Favourite vegetable products		
Fresh vegetables	15	28.30
Frozen vegetables	5	9.43
Canned vegetables	9	16.98
Dried vegetables	2	3.77
Processed vegetables	4	7.55
Squeeze vegetables	13	24.53
Pickled vegetables	5	9.43
2. Favourite fruit products		
Fresh fruit	9	16.98
Frozen fruit	7	13.21
Canned fruit	6	11.32
Dried fruit	7	13.21
Processed fruit	9	16.98
Juice fruit	15	28.30

Source: Authors' survey (2020).

The survey results revealed that all 53 Japanese respondents had purchased Vietnamese fruit and vegetable products (Table 7). According to the participants, the quality of current Vietnamese fruit and vegetable products, while diverse and more

affordable, is perceived to be lower than that of some other countries. This presents both a challenge and an opportunity for Vietnamese products looking to expand into the Japanese market. To progressively gain a stronger foothold in Japan, Vietnamese agricultural products need to elevate their quality and diversify their offerings. Specifically, Vietnamese businesses should concentrate on Vietnam's agricultural strengths and leverage their competitive pricing to vie with products from other nations.

Table 7. Japanese consumers' evaluation of imported fruits and vegetables.

Japanese consumers' evaluation	Quantity (n=53)	Percentage (%)
1. Number of interviewees who have ever bought vegetables from Vietnam	53	100
2. Fruits and vegetables from which country are considered the most favourite?		
The USA	18	33.96
China	14	26.42
Thailand	8	15.09
Vietnam	8	15.09
Others	5	9.43
3. Is it easy to find and buy fruit and vegetable products from Vietnam?	19	35.85
4. Assess the diversity of Vietnamese fruit and vegetable products compared to other countries		
More diverse	12	22.64
Similar	19	35.85
Less diverse	22	41.51
5. Assess the price of Vietnamese fruit and vegetable products compared to other countries		
More expensive	8	15.09
Similar	19	35.85
Cheaper	26	49.06
6. Assess the quality of Vietnamese fruit and vegetable products compared to other countries		
More delicious	9	16.98
Similar	17	32.08
Less delicious	27	50.94

Source: Authors' survey (2020).

According to the survey, Japanese consumers are willing to pay more for healthy and safe food, and the frequency of vegetable and fruit consumption by the Japanese is quite high. The Japanese have a plethora of places to buy vegetables and fruits. The quality of current Vietnamese fruit and vegetable products is perceived by the Japanese as being lower than some other countries, but they are diverse and more affordable in comparison.

4.5. Policy implications

Vietnam's fruit and vegetable export turnover to Japan has been growing, but the import value of Vietnamese vegetables and fruits to Japan remains modest compared to the overall import value of vegetables and fruits in Japan. The export of Vietnamese fruits and vegetables to Japan encounters several challenges, notably stringent product quality requirements. To boost the export of Vietnamese vegetables and fruits to the Japanese market, this study recommends several policy implications:

4.5.1. Establish an import market assessment centre in each Vietnamese exporting enterprise

Understanding the intricacies of the import market is pivotal for successful export businesses. Fruits and vegetables, given their seasonal nature and food safety concerns, coupled with Japan's rigorous product quality standards, make market comprehension essential. Vietnamese export enterprises should research not only macro aspects like demand, quality, and import regulations but also understand Japanese consumer preferences. Establishing an import market assessment centre staffed with individuals proficient in market assessment is crucial.

4.5.2. Undertake in-depth market studies of fruit and vegetables in Japan

Comprehensive market analysis is indispensable for Vietnamese enterprises. The areas of study include types and volumes of fruits and vegetables, quality specifications, acceptable import prices, and optimal export timings.

4.5.3. Enhance understanding of Japanese consumer culture

The Japanese value long-standing relationships built on trust, loyalty, and verbal commitment. Vietnamese enterprises should position themselves as dependable, long-term partners. Demonstrating sincerity and honesty during negotiations is paramount. Furthermore, the Japanese often value verbal agreements over written contracts, so businesses should strictly adhere to any commitments regarding production, processing, and preservation. It would also be beneficial to promote understanding of Japanese consumer culture through initiatives such as hosting Japanese

Culture Week in Vietnam and Vietnamese sales festivals in Japan.

4.5.4. Ensure the quality of exported fruits and vegetables

Japan is a discerning market with stringent hygiene and safety standards, especially for vegetables and fruits. Direct quality checks are more important to them than third-party certifications. To successfully export to the Japanese market, Vietnamese products should adhere to standards such as GlobalGAP, JGAP, advanced quality management systems like HACCP, ISO, SSOP, and the Safety and Hygiene Rules in Japan. Continuous and strict application of these standards is essential.

4.5.5. Amplify trade promotion activities

Effective market research is vital. Information regarding supply, demand, pricing, quality, consumption trends, and competitors should be diligently gathered, analysed, and forecasted. This data can be procured through embassies, business support associations, fairs, exhibitions, and media outlets. Vietnamese enterprises should be proactive in joining trade promotion programmes to bolster Vietnam's fruit and vegetable industry. Participation in renowned Japanese food fairs, such as Foodex Japan Chiba, Foodex Japan Tokyo, and Wine and Gourmet Japan Tokyo, is recommended. Moreover, leveraging digital technology for trade promotion-like website creation and use of email, Skype, and Facebook for information exchange - is essential.

5. Conclusions

Japan offers a promising market for Vietnam's fruit and vegetable exports. Yet, Vietnam's market share in this import arena remains below 2%. The burgeoning import demand, shifting consumption habits, and the Japanese consumer's desire for product diversification present an opportunity for Vietnam's tropical fruits and vegetables. Survey results indicate that the Japanese have a high frequency of fruit and vegetable consumption: 80% of participants consume these daily or 2-3 times a week. The outlets where Japanese consumers purchase these products are varied, including supermarkets, department stores, specialised fruit and vegetable shops (both niche and imported), convenience stores, and online platforms. Their preferences encompass a broad range of product types, from fresh to frozen, canned, dried, processed, and even juices.

Moreover, from the Japanese consumers' standpoint, while Vietnamese fruit and vegetable products might not meet the quality of those from some other nations, they do offer variety and come at a more affordable price. Vietnamese exports encompass a broad range, including edible vegetables, tubers, stems, fruits, rinds, as well as processed variants of these. To bolster the export of Vietnamese vegetables and fruits to the Japanese market, this study proposes several policy implications: (i) Establish an import market assessment centre in every Vietnamese exporting enterprise; (ii) Enhance market forecasting capabilities; (iii) Deepen understanding of Japanese consumer culture; (iv) Ensure top-notch quality for exported fruits and vegetables; and (v) Amplify trade promotion efforts.

CRediT author statement

Nguyen Thi Thuy: Conceptualisation, Data curation, Writing - Original draft preparation; Tran Dinh Thao: Methodology; Tran Thi Thuong: Visualisation, Writing - Reviewing; Dinh Cao Khue: Supervision, Investigation; Dinh Gia Nghia: Software, Validation, Editing.

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COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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