

Deterring Factors Why Rabbit Meat Is Less Popular among Malaysian Consumers

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Abstract

Rabbit meat is highly nutritious and possesses a healthy source of protein, yet it remains the unpopular choice of meat among Malaysian consumers. Thus, this paper investigates the deterring factors why it is so. By using descriptive statistics from a sample of 220 Malaysian respondents, it was found that the strong deterring factors why people do not eat rabbit meat are its availability in the market, versatility in cooking as well as its expensive price. Besides, there is also a misconception that rabbit meat has no nutritious effect as opposed to other meats such as chicken and beef. Therefore, it is recommended that awareness should be given to Malaysian consumers about the benefits of consuming rabbit meat, as well as how to cook it to expose the majority of the consumers to its versatility in cooking meats. Besides, incentives and subsidies shall be provided by the government and local authorities to rural producers to tackle the issue of its expensive price.

Keywords: rabbit, rabbit meat, healthy meat, nutritious, versatility in cooking,

1. Introduction

The rabbit industry in Malaysia is still relatively new compared to other livestock industries. Even though rabbits are considered as pets in Malaysia for many years, the large-scale production of rabbit meat are still in their infancy. Looking at its gap and its possibility to ensure food security in Malaysia, the Ministry of Agriculture and Food Industries encourages young entrepreneurs to venture into rabbit meat production due to its high and increasing demand. It also can be used as an alternative to beef and mutton as sources of protein (The Star, 2020).

Rabbit meat has tremendous benefits. Among others, it is considered as nutritious meat with lower fat content, lower cholesterol and less saturated fatty acids as compared to other meats. Besides, it has excellent nutritive and dietetic properties (Antonella Dalle Zotte & Szendro, 2011; Hermida et al., 2006; Williams, 2007), which make them highly recommended by nutritionists over other meats because of its richness with proteins of high biological value, minerals, and vitamins (Gabriela et al., 2014). In addition, the nutritional quality of rabbit

meat is superior to other species because its lipid has a high content of mono-unsaturated fatty acids and is rich in polyunsaturated fatty acids (PUFA). Therefore, it can prevent consumers from vascular diseases with positive influences on human health conditions (Abd-Allah & Abd-elaziz, 2018). Additionally, they support adult brain maintenance and kid brain and visual development (Honrado et al., 2022) contains high biological value protein as well, giving the body all the necessary amino acids, particularly lysine and threonine, also contains high biological value protein as well, giving the body all the necessary amino acids, particularly lysine and threonine (Dalle Zotte & Szendro, 2011). In addition, the meat is a good source of potassium, phosphorus, and selenium, minerals involved in the regulation of several physiological activities, and is low in sodium, preventing excessive blood pressure (Dalle Zotte & Szendro, 2011).

1.1 Issue and Problem

Even though rabbit meat is proven to be nutritious, its consumption is still low and has less tradition in Malaysian' food culture. People in Malaysia perceived rabbits as cute animals or pets, they should not be eaten. Rabbit meat is considered not preferable due to the Malaysians' culture, society, and norms (Gunalan et al., 2019). For instance, in the United States, only after a year of selling rabbit meat in the market, Whole Foods as a supplier of rabbit meat in 2015 had to stop selling the meats because of the pressure from the public. It happened due to the yearlong campaign waged by animal rights activists (Felix Behr, 2021), whereby they claimed that rabbits are considered pets and it cannot be killed. In addition, the use of rabbit as an image for Bugs Bunny is also another reason why rabbit meat is not popular as a source of protein (Felix Behr, 2021). Public regards rabbits as cute pets and are reluctant to eat its meat (Bodnar & Skobrák Bodnár, 2014, Cheeke, Patton, Lukefahr, & McNitt, 2004). This so-called 'bunny syndrome' is also claimed to give a negative psychological effect on consumers not to eat rabbit meat (Raharjo, 2008).

Apart from that, rabbit meat might be perceived as expensive meat compared to other types of meats such as chicken and beef (Aminuddin, et al. (2023). Its expensive price is partly due to the limited supply of rabbit meat in Malaysia's market. As a result, many Malaysians perceive rabbit meat as a luxurious food and not a regular part of their diet.

Nevertheless, this drawback can become an opportunity for the Malaysian market by re-adjusting the offer towards rabbit meat and rabbit meat products as "new products" or "new entry", or Functional Foods products (Petracci et al., 2018). At present, the processing food industry is moving very fast and more relevant towards the introduction of modern products (i.e., ready meals, ready-to-cook products, etc.), mainly targeted at young and busy consumers who want to spend a shorter time in preparing foods (Swatland, 2010).

Since various initiatives and government campaigns have been conducted to spur the development of the rabbit industry (Gunalan et al., 2019), the demand for rabbit meat is now becoming popular and increasing from day to day. For instance, statistics in 2020 found that there were 600 farmers who were involved in the rabbit industry and registered with the District Office (Noor Hidayah, 2020). In the same year, the demand for rabbit meat was more than its supply. For one seller who produces and sells rabbit "satay", they need roughly

around 1,200 kilograms of rabbit meat per month. With huge demand but lack of supply, it shows a high prospect for industrial growth. However, small farmers are still cautious to enter the industry since there is no market assurance of the products.

1.2 Objective

Thus, due to these hurdles and constraints that have been explained in the issue and problem section, there is a need to conduct market research to examine the consumer behaviour, mainly why some of the Malaysian consumers are reluctant to consume rabbit meats' products. It is essential as rabbit meat can be one of the sources to solve food security issue in Malaysia.

This paper follows a traditional academic structure that consists of four sections, namely (1) Introduction, (2) Research Method, (3) Findings and Discussion, as well as (4) Conclusion and Recommendation. In the introductory part, it provides background information about rabbit meat, discusses the main issues of the research, and presents existing literature on rabbit meat consumption. It is then followed by the methodology section that explains the methodology employed in the research such as data collection and analysis. Follow suit is the section that discusses the findings on why people do not want to eat rabbit meat. Finally, the conclusion and recommendation section summarize the main findings, draw conclusions and suggest a few ways to increase the popularity of rabbit meat consumption among Malaysian consumers.

2. Method

The research methodology for this study is based on the descriptive statistics with a sample of 220 respondents from different states in Malaysia. All data were collected through convenience sampling method. It is a non-probability sampling technique that select participants based on their accessibility and willingness to participate. With the differences in the respondents' states and social economic background, it is believed that this study can provide a variety of answers why Malaysians are reluctant to buy and consume rabbit meats' products.

2.1 Research Design

Data for this study were collected through an online survey. The survey consists of a set of structured questions that were designed to collect data on the perception of Malaysian consumers about rabbit meat. All survey questions were adopted and adapted from Petrescu & Petrescu-Mag (2018). The questionnaires as the research instruments were distributed from Jun 2022 to December 2022, and they were administered to participants via email and social media platforms. All participants were given a specific time frame to complete the survey. In ensuring ethical considerations are met, all participants were informed of the purpose of the study, their rights and the procedures involved. The participants were also informed that their participation is voluntary, and they can withdraw from the study at any time without penalty. The participants' confidentiality and anonymity were maintained throughout the study.

2.2 Questionnaire Design

The questionnaire comprised of six main parts and a total of 73 items. The first part of the questionnaire was on rabbit meat experience and consumption habits, consisting of 13 multiple-choice items regarding rabbit meat consumption frequency, purchasing habits, and location. The second part is to determine the respondents' perception on future rabbit meat consumption, consisting of 3 multiple-choice items. The third part of the questionnaire was on the perception and knowledge of respondents regarding rabbit meat characteristics, such as the naturalness, nutrition, texture, price-quality ratio, and versatility of the meat. This part consisted of 21 items; each item was to be answered on a five-point scale ranging from 'strongly disagree' to 'strongly agree'. Meanwhile, 3 items in the fourth part of the questionnaire are to examine the participants' perceptions of rabbit meat healthiness, taste, and price compared to the other types of popular functional food for Malaysian, such as chicken, beef, and goat meat. The fifth part of the questionnaire listed 22 items to determine the rabbit meat consumption deterrents, measured on a four-point scale, ranging from 'no effect' to 'strong effect'. The last part of the questionnaire was on the respondents' demographics, such as age, gender, race, current occupation, religion, resident state, educational background, and monthly income.

Data analysis for this study was carried out using Excel software. For comparison of differences perceptions regarding an ordinal variable between two or more difference groups, descriptive statistics and cross-tabulation analysis are conducted, where the findings were then presented in tables.

3. Results

This part explains the analysis and findings for the research. It is divided into two (2) categories based on the main structures of the questionnaires that are related to this research topic, namely (1) demographics and (2) deterrence factors to rabbit meat consumption.

3.1 Demographic

The majority of the respondents were Malay (96%), male (76%), and Muslim (98%). From the age perspective, 43% of the respondents were between the age of 21 to 25 years old. All states have representatives, except for Perlis. The highest percentage of respondents were from Selangor (26%), followed by Pahang (15%) and Melaka (15%). Out of 220 respondents, 62% of the respondents received a monthly income of less than RM 4,500. In Malaysia, this is regarded as the B40 category. One of the reasons might be due to the 40% of the respondents who were under the students' category, and 11% of them were housewives. Details of the demographic part can be seen in Table 1 below.

Table 1. Demographic profiles of the respondents

Age		Race	
under 21 years old	10%	Melayu	96%
21 - 25 years old	43%	India	1%
26 - 30 years old	5%	Non-Malay Bumiputera	1%
31 - 35 years old	9%	Gender	
36 - 40 years old	6%	Male	76%
41 - 45 years old	6%	Female	24%
46 - 50 years old	12%	Religion	
51 years and above	9%	Islam	98%
Current Occupation		Buddhism	0%
Housewife	11%	Hinduism	1%
Self-employed	8%	Current Resident State	
Retired	3%	Johor	7%
Part-time work	3%	Kedah	4%
Work full time	34%	Kelantan	1%
Student	40%	Melaka	15%
Income/month		Negeri Sembilan	12%
RM2,500 and below	39%	Pahang	15%
RM2,500 - RM4,500	23%	Perak	3%
RM4,501 - RM6,500	14%	Perlis	0%
RM6,501 - RM8,500	5%	Pulau Pinang	1%
RM8,501 - RM10,000	8%	Selangor	26%
RM10,001 - RM12,000	4%	Terengganu	3%
RM12,001 - RM14,000	2%	W.P KL&Putrajaya	10%
RM14,001 and above	4%		

3.2 Deterrence Factors to Rabbit Meat Consumption

Table 2. Deterrence factors of rabbit meat consumption

No.	Deterrence Factors	Percentage of Responses (%)			
		No effect	Weak reason	Moderate reason	Strong reason
1	Taste	23%	18%	37%	22%
2	Texture	36%	21%	21%	23%
3	Smell	22%	19%	33%	26%
4	Difficultness To Cook	25%	19%	37%	20%
5	Availability Of Rabbit Meat in Market	18%	16%	32%	34%
6	Versatility In Cooking	18%	18%	37%	27%
7	Price-To-Ratio Effect	17%	14%	39%	30%
8	No Authentic Halal Logo/ Certification	24%	17%	34%	25%

No.	Deterrence Factors	Percentage of Responses (%)			
		No effect	Weak reason	Moderate reason	Strong reason
9	It is a food that has no effect on health & well-being that other poultry have.	31%	24%	38%	7%
10	Nutrient of rabbit meat is less than other meat.	26%	25%	41%	8%
11	Rabbit meat is not a food source and its purpose is to be eaten.	26%	23%	35%	17%
12	Rabbit should not be eaten because of the respect for the life of another creature (rabbit feels and it has its own life).	27%	20%	37%	16%
13	Rabbit should not be eaten because of the empathy with a living creature which is deprived of freedom.	26%	19%	35%	20%
14	Rabbit should not be eaten because of it has to be slaughtered.	30%	22%	34%	14%
15	Rabbit is a cute animal, a friend, a pet, so it should not be eaten.	22%	19%	33%	26%
16	Rabbit farming has normal and natural ways of feeding and livestock conditions as compared to other types of meat.	27%	22%	38%	12%
17	There is less number of Malaysians who eat rabbit meat.	20%	16%	39%	26%
18	Rabbit meat has low cholesterol level	45%	35%	4%	17%
19	Rabbit meat that has less fat is still difficult to cook.	43%	29%	7%	21%
20	Rabbit meat has a low risk for your health due to the use of hormones, antibiotics etc. compared to other types of meat.	42%	34%	7%	17%
21	Rabbit meat has a low risk for your health due to parasites, and animal diseases compared to other types of meat.	44%	32%	7%	17%

Table 2 shows the output from the questionnaire that outlined 21 deterrence factors to rabbit meat consumption. The most interesting part of this finding is on the moderate and strong reasons why people refuse or are reluctant to consume rabbit meat products. One of the strongest reasons is the availability of rabbit meat in the market (34%), followed by the price-to-ratio effect (30%). Most rabbit meat products are not available in Malaysia's hypermarkets and supermarkets. The markets are circling around the meat suppliers only,

mainly in the rural areas. As mentioned by previous research, rabbit meat products have their own demand (Gunalan et al., 2019; Noor Hidayah, 2020). However, since its demand is relatively new among Malaysian consumers, the products are a bit pricey.

Besides that, the versatility in cooking is another factor that hinders rabbit meat consumption. It is shown in Table 2, in which 27% of the respondents claimed that this factor is the strong reason why people are reluctant to consume rabbit meat. Based on the normal television show that showcases cooking segments, it is normal for Malaysians to watch chefs cooking fish, chicken, prawns, beef, and kinds of seafood. However, it is unusual to see a cooking segment that showcases how to cook rabbit meat. This might be the reason why people perceived rabbit meat to be less versatile in cooking. In fact, there are many ways to cook rabbit meat, among others, through grilling, roasting, and stewing. The meat itself can be marinated with herbs and spices, then roasted in the oven until it is tender and juicy. It can also be cooked slowly in a flavourful broth, added with vegetables and herbs, resulting in a rich and hearty stew. Lack of awareness on how to cook rabbit meat might be the antecedent of less versatility in cooking rabbit meats in Malaysia.

Apart from that, by looking at the responses tabulated in Table 2, other moderate factors why people are reluctant to consume rabbit meat are as follows. Almost half of the respondents (41%) claimed that the nutrient of rabbit meat is less than other meat. Besides, 38% of the respondents claimed that rabbit meat has no effect on health and well-being than other meats. These findings indicate that Malaysians are still unaware of the tremendous benefits of rabbit meat relative to other meats, such as low cholesterol level, less saturated fatty acids, and excellent nutritive and dietetic properties (Antonella Dalle Zotte & Szendro, 2011; Hermida et al., 2006; Williams, 2007). This finding is supported by other statistics in Table 2, in which 39% of the respondents moderately believed that less number of Malaysians eat and consume rabbit meat. It is partly because of the awareness, meat' availability as well as its expensive price (Aminuddin, et al., 2023).

Referring to past literature, it is believed that people are reluctant to eat rabbit meat because of their perception that rabbits as cute animals or pets that should not be eaten (Gunalan et al., 2019; Bodnar & Skobrák Bodnár, 2014). Nevertheless, this research found that the Malaysian respondents did not treat this factor as their strongest factor since only 26% of the respondents claimed so. Thus, we can conclude that the perception to eat rabbit meat has changed among Malaysians, but many of them are still unaware of the benefits and nutritional values that the meat possesses as compared to other typical meats that are normally consumed by Malaysians.

Table 3. Deterring factors by income groups

Income Groups	Meat Characteristics	Lifestyle Factors	Health Factors
RM2,500 and below	13%	11%	3%
RM2,500 - RM4,500	7%	7%	0%
RM4,501 - RM6,500	4%	3%	6%
RM6,501 - RM8,500	2%	1%	1%
RM8,501 - RM10,000	3%	2%	0%
RM10,001 - RM12,000	2%	1%	1%
RM12,001 - RM14,000	0%	0%	1%
RM14,001 and above	1%	1%	0%

Since one of the critical factors why people do not want to consume rabbit meat is because of its expensive price, we further analysed our findings by conducting a cross-tabulation analysis between deterring factors and income groups. The analysis is based on the answers by respondents (70%) who did not want to consume rabbit meat products. All 21 deterring factors are divided into three groups: namely (1) rabbit meat characteristics, (2) lifestyle factors, and (3) health factors. As indicated in Table 2, rabbit meat characteristics comprise of 9 factors from (1) to (8). Meanwhile, lifestyle factors consist of 9 factors from (9) to (17), while health factors comprise of 4 factors from (18) to (21). After grouping all 21 factors into three groups, we can derive the cross-tabulation analysis between deterring factors and income groups as shown in Table 3 above.

By referring to the results in Table 1, most of the respondents earn an income of less than RM 6,500 (with a total percentage of 76%). The remaining 24% of the respondents earn an income of more than RM 6,500. That is the reason why the results tabulated in Table 3 have slight differences between the three factors for the first three income groups' categories. Respondents who receive an income of less or equal to RM 4,500 claimed that the health factor is not the strong reason why they are reluctant to consume rabbit meat. Instead, the strong reason is the meat characteristics, which comprise of taste, texture, smell, difficulty to cook, availability of rabbit meat in the market, versatility in cooking, price, and halal as well as no effect on well-being than other poultry. This is consistent with our previous findings in Table 2, in which price, versatility in cooking as well as the availability of the meats in the market should be tackled first in order to boost this industry upward.

Looking at Malaysia as a Muslim-majority country, concern about Halal certification should not be taken lightly among rabbit meat producers. It also might be the reason that deters the consumption of rabbit meat. Halal certification is a religious requirement for Muslims. Products that receive Halal certification are ensured to be prepared and processed according to Islamic law. Since rabbit meat is less popular than other meats such as chicken, beef, and lamb, there might be little incentive for rabbit meat producers to pursue halal certification as the business might not be a profitable venture. Nevertheless, as rabbit meat receives a growing demand from Malaysian consumers, it is vital for all Muslim producers to apply for Halal certification and ensure all Halal processes and procedures are consistently in place.

Once the products have Halal certification, more Muslim consumers are attracted to consumer rabbit meat products.

4. Conclusion and Recommendation

As the world is facing a food security issue, Malaysia should also take this issue seriously. The rabbit industry is one of the solutions as rabbit meat production can take place within 12 weeks of the rabbit age, depending on the breed. Even though there is a growing demand for rabbit meat in Malaysia, our research found that there is still a misconception among Malaysians about rabbit meat, especially when they believe that the meat has no effect on the health and well-being of consumers. In actual fact, there are various nutrients that are available in the meat itself, and those nutrients are far greater than other poultry such as chicken and beef. Thus, awareness and educational programs should be conducted to Malaysians on the benefits of consuming rabbit meat products. Among the great promotional tools are the television show and short videos that broadcast ways to cook rabbit meat, together with their benefits. Rabbit meat itself has a reputation for being tough and gamey. It might discourage people from experimenting with it in the kitchen. Therefore, it is necessary to educate consumers via videos, TV shows, or other means on the proper methods of preparing and cooking it.

Besides, the government should also give more incentives and subsidies for rabbit meat producers, especially in rural areas, to produce and supply more rabbit meat in the market. If the supply is increasing tremendously, the price of rabbit meat can be reduced as the market is not controlled by few suppliers. Subsidies are highly needed for rural producers to expand their business, not only by producing meats, but also producing end products that can be exposed to local and international markets. The demand is promising, if with the help from various sectors in the economy. ASEAN Halal Meat Cluster Development Plan by Malaysia Government is the best platform for government agencies such as Federal Land Development (FELDA) to take off this plan for rabbit meat industry. Providing significant financial and research support as part of marketing awareness promotion and educational programs can significantly promote rabbit meat among Malaysians. FELDA had launched Settler Development Program (PPP) in improving its third-generation settlers for other economies activities and plan should consider farming rabbit meat as part of settlers' backyard farming activities. In addition, active and strong promotional and educational programs between Department of Veterinary Services (DVS) Malaysia with Ministry of Agriculture and Food Security (MAFS) Malaysia that focus on benefits of farming rabbit meat among small scall enterprises that could lead to increment of rabbit meat producers, while Ministry of Domestic Trade and Cost Living (KPDN) Malaysia should highlight aggressively in their all-year promotion "Taste of Malaysia" on the uniqueness and benefits of rabbit meat as additional source of white meat to Malaysians.

Food Security issue in Malaysia is increasing and has become a factor causing government organisations to start thinking about rabbits as an alternative food for the community. Therefore, in order to take this initiative, Felde has created an income generation alternative for Felde settlers through backyard farming through the Settler Development Program (PPP)

established in 2019. The rabbit breeding industry for meat, wool, or wool is also known as the Cuniculture Industry or "Cuniculture Industry". However, since this rabbit culture industry is still new in Malaysia, our society is not yet fully open to accepting rabbit meat as an alternative food source to replace chicken and beef compared to society in Indonesia.

According to Suroto et al., (2022), the rabbit breeding population in Indonesia every year, experienced fairly good development, where the largest rabbit breeding population is in East Java Province as much as 80% of the total number of rabbits in Indonesia. Based on statistical data in 2019, the rabbit breeding population in East Java Province (region) is 370,107 animals. Of these, Malang Regency (district) recorded the highest rabbit population amounting to 44,134 of which, most of them are in Karangploso Subdistrict (mukim) with 15,293 (Priyanti & Raharjo, 2012)

In addition, Indonesian people also welcome rabbit meat as an alternative food source that provides many health benefits to those who eat it. This is because the nutrition found in rabbit meat is much better than in chicken, beef, or lamb. There are many food stalls that provide various types of rabbit meat dishes that are popular in the country. Among the best-selling and popular menus are "rabbit satay", fried rabbit rice, rabbit goulash, and rabbit soup.

Recognizing the good acceptance of the Indonesian community towards the cuniculture industry and also the rapid development of this industry, therefore, it is suggested that the cuniculture industry players in Malaysia n conduct a benchmarking visit to the following places in Indonesia for a visit to the farm, its slaughtering house, product production factory and Restaurants/houses that prepares dishes from rabbit meat.

Benchmarking is a systematic and ongoing process to identify, learn, modify, and implement best practices from organizations in the same industry or from other organizations to achieve superior performance. Therefore, this benchmarking visit is aimed at increasing knowledge in the field of rabbit farming, the production of products based on rabbit meat, marketing strategies used to increase the demand for rabbits, and also to establish good relations with the industry players over there.

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