

## Consumer perceptions of rabbit meat as an alternative animal protein source: a university-based study

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### Abstract

The need to meet the daily animal protein requirements of the teeming human population requires that other protein sources, including rabbit meat, be explored. Rabbit meat can be used as an alternate protein source to combat protein deficiency in South Africa as it is healthier and has a higher proportion of digestible proteins compared to currently popularly consumed meats such as pork, beef, and chicken. However, consumers should be the primary focus when promoting any product since they are the end users and make purchasing decisions based on their perceptions. The study's objective was to investigate the perceptions of the University of Fort Hare students towards using rabbit meat as an alternative animal protein source. Structured questionnaires from 400 respondents were used to gather information on consumer perceptions of rabbit meat as an alternate animal protein source. Information regarding socio-demographic and meat characteristics that affect consumer purchasing behaviour was also gathered. The data obtained were analyzed using the Statistical Package for Social Science (SPSS) software. Most respondents (75%) had never consumed rabbit meat. The main reason was the unfamiliarity (46%) with rabbit meat. A total of 45% of the respondents were likely to buy and consume rabbit meat at restaurants, whereas 44% and 62% were likely to buy rabbit meat from grocery stores or consume it when offered by friends and relatives, respectively. Approximately 19% of the respondents perceived rabbit meat as similar to chicken. The quality of meat is positively correlated with the health aspect of the meat ( $P = 0.02$ ). Presentation and meat quality are also positively correlated ( $P = 0.01$ ). This study discovered that most respondents were unfamiliar with rabbit meat and, therefore, had limited knowledge of the meat quality attributes of the product.

## 1. Introduction

Animal agriculture plays a vital role in any nation's development and growth, especially in providing daily protein intake (Henchion *et al.*, 2017). However, given the projected human population estimated to hit 9.8 billion by the year 2050, it is doubtful if conventional livestock (cattle, chicken, sheep, goat and pork) can meet animal protein demand (Bastawrous and Suni, 2019; Kleyn and Ciacciariello, 2021). The Food and Agriculture Organisation estimated that more than 820 million people worldwide suffered from hunger and nutrient deficiencies in 2018 (Larson and Larson, 2019). The estimated number of people that suffer from inadequate protein consumption worldwide is close to one billion, resulting in health complications and retarded growth, especially in young children (Cole and

Neumayer, 2007; Wu *et al.*, 2014). Retarded growth in children can be attributed to animal protein inadequacy and affects a quarter of children under 5 years of age (Semba *et al.*, 2016). Hence, the utilisation of other nutritious meat types, including rabbit meat, could be an alternative animal protein source that can bridge the gap between the high consumer demand for meat and the low supply from farms.

While about 80% of people include meat in their daily meals, poultry, beef, mutton, and pork are the most consumed meats in South Africa (Gbejewoh *et al.*, 2022). In a study done in South Africa, it was stated that in 2019, the consumption of chicken, beef, and pork was 41.2 kg, 21.3 kg, and 3.7 kg per capita, respectively (Mensah and Enahoro, 2022). The author attributed the

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high per capita consumption of these livestock products to their readily availability and popularity, thus their high demand. While the total population meat consumption is expected to reach up to 570 billion kilograms in 2050 due to rising incomes and an increasing population, the consumption of white meat is also expected to grow beyond that of red meat, which raises concerns that the supply of meat might not be able to meet the expanding population's needs (Delpont *et al.*, 2017).

As the population grows and the demand for meat products and proteins rises, alternative meat sources must be investigated. There is a pressing need to create a huge quantity of healthy, high-quality meat quickly while also maintaining environmental cleanliness. South Africa is currently facing the issues of global warming and water scarcity (Belhassan, 2021). Due to these reasons, sources of meat with a low carbon footprint need to be found to keep the environment clean. Global warming has led to extreme temperatures in Southern Africa, which can be mitigated by producing more environmentally friendly animals such as rabbits. Rabbits produce about 3 kg of meat from the same amount of feed and water used by cattle to produce just 0.45 kg (Mensah *et al.*, 2018), thus resulting in a lower carbon footprint to counteract the current issues of global warming and water scarcity. Rabbit meat is classified as a functional food because it contains bioactive compounds that are beneficial to human health, such as conjugated linoleic acid, vitamins, and antioxidants, as well as a balanced n-6 to n-3 polyunsaturated fatty acid ratio (Cullere and Dalle, 2018). Rabbit meat is nutritious due to its high proportion of digestible proteins in comparison to other meats such as pork, beef, and chicken (Yin *et al.*, 2014; Birolo *et al.*, 2022). Apart from the low-fat percentage, it is rich in healthy fats such as monounsaturated and polyunsaturated fats, making it healthy and suitable for old and diabetic people (Martinez-Alvaro *et al.*, 2018). While meat from domesticated rabbits is rich in vitamins B12 and E, it has fewer calories and cholesterol than poultry (Delpont *et al.*, 2017; Lorio *et al.*, 2023). Rabbit meat has a lower fat content than the popular meats, with 10.2% fat per pound compared to 11% fat in chicken and 28% fat in beef. It also has lower moisture, calories, and cholesterol per pound when compared to chicken (Rasinska *et al.*, 2019).

Rabbit meat has plenty of health benefits since it is white meat with a similar taste to the most consumed type of meat in South Africa, chicken. It has been recommended that rabbit meat be used as an alternative in all chicken recipes, as they have almost the same taste and nutritional value (Samuelsson, 2020). Despite rabbit meat having similar nutritive attributes to chicken, it

remains unpopular among South Africans. South Africa produces relatively low quantities of rabbit meat, but most of it (80%) is exported, with only 20% consumed domestically (Rodríguez *et al.*, 2019), further showing that rabbit meat demand is low. This low consumption could be attributed to various consumer perception-related factors such as culture, religion, and market-related factors, such as a lack of consumer information regarding the nutritional value of rabbit meat.

Consumer perceptions refer to the consumer's behaviour, opinions, and impressions about a certain product (Canty, 2023). These can be affected by various aspects such as culture, religion, tradition, and the information that consumers have about that product. Other factors that affect meat consumption are consumer experiences, knowledge, advertising, and price. Studying consumer perceptions will ensure they accept and buy a specific type of meat by catering to their expectations, opinions, and needs. Creating good consumer perceptions builds a long-term relationship between customers and the product (Gåsste and Islam, 2023). This can be achieved by asking for user feedback, improving the product, and making the product known to more people. Knowledge about consumer perceptions is important before establishing a market for the production area to avoid possible failure. Hence, the purpose of this study was to determine consumer perceptions of the use of rabbit meat as an alternative animal protein source.

## 2. Materials and methods

### 2.1 Ethical approval

An ethical clearance certificate was obtained from the University of Fort Hare Research and Ethics Committee prior to the data collection process (Ref: 201927182-ZG-ZM).

### 2.2 Study site

The research was carried out at the University of Fort Hare (UFH) campuses in the Eastern Cape, South Africa. UFH is a black-dominated institution with students from different socioeconomic backgrounds. The estimated number of enrolled students at the University of Fort Hare is 15,000.

### 2.3 Sampling

A simple random sampling method was used to determine the sample size (~400) for the study using the Taro-Yamane method as described by Adam (2020) and Naw (2023). The formula is as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where n = sample size, e = margin error (5%) and

N = Population size (15,000).

The pretested questionnaires were distributed to accommodate all students. A random sample was used, and the convenience approach was employed to avoid bias. All students were allowed to participate in the survey regardless of age, gender, or race.

#### 2.4 Data collection

Data was collected using a structured questionnaire with 3 sections (A, B, and C): demographic information, rabbit meat knowledge, and factors that affect meat purchasing decisions, respectively. The respondents answered questions about their views voluntarily, and they were allowed to withdraw their participation at any given time. English was used in the questionnaire, and explanations in the local language were given in case the respondents needed clarity. Questionnaires were pretested for clarity before being handed out to the respondents. Printed-out forms were used with questionnaires that could be distributed efficiently across the campus to minimise bias. Written consent was obtained from participants before they responded to questions.

#### 2.5 Statistical analysis

The collected data was evaluated using the Statistical Package for Social Science (SPSS version 27). The demographic information of the respondents was summarised as frequencies. On questions that required respondents to select “somewhat” and “would”, these answers were combined into respondents who were likely to consume rabbit meat for ease of analysis. Respondents who responded “strongly agree” and “agree” were combined into respondents who agreed with the statements, and respondents who responded “disagree” and “strongly disagree” were combined into respondents that do not agree with the statements for ease of analysis. Data on perception-related questions on quality, price, health, and presentation of meat was first transformed and subjected to Pearson correlation analysis as a test of the relationship. Values were declared significant at  $P < 0.05$ .

### 3. Results

#### 3.1 Demographic data of respondents

A total of 400 respondents completed the survey. Slightly above half (51%) of the respondents were female. 60% of the respondents were between the ages of 21 and 30, while 29% of the respondents were below 20 years of age. The respondents' nationality was predominantly South African (81%). Only 8% of respondents did not have any religion, while 70% of

respondents were Christians. Only 24% of the respondents were restricted from consuming certain types of meat, with 23% restricted from consuming pork only and 1% restricted from consuming all kinds of meat by religion (Table 1).

Most students (93%) earned well above the poverty line (R946) monthly. The majority (64%) had a monthly income between R1000 and R2000, and the second largest income group (29%) earned above R2000. There were respondents with only one source of income and some with more than one source of income. Students with one source of income sourced the income from bursaries (59%), part-time jobs (7%), or family (4%); students with more than one source of income sourced it from bursaries and family (11%), family, and part-time jobs (1%); and 2% of respondents received income from all stated income sources. Most respondents (56%) were from the Faculty of Science and Agriculture, and the least number of respondents were from the Faculty of Health Science (3%). Of all the faculties, 43% of the respondents reported that they learned about meat through their respective studies (Table 1).

#### 3.2 Consumption and purchase of rabbit meat

Only a quarter (25%) of respondents have at least once eaten rabbit meat (Figure 1). Out of the respondents who have eaten rabbit meat (25%), the majority (47%) got it from hunting and curiosity (18.52%) (Figure 2). Most respondents (46.05%) who have never consumed rabbit meat were not familiar with it, and 27.63% had no particular reason for not consuming it (Figure 3). While 44% of respondents would not buy rabbit meat at restaurants, a total of 45% were likely to eat rabbit meat at restaurants (Table 2). Only 44% of respondents were likely to buy rabbit meat from grocery stores, while 61% were likely to consume it if it was available from friends and relatives (Table 2). A small percentage (27%) of respondents would not consume rabbit meat if it was available from friends and relatives, and above 40%

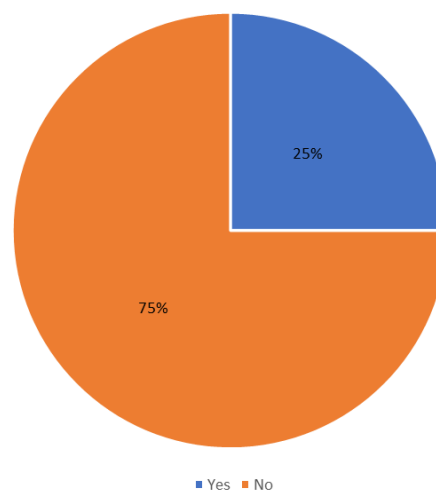


Figure 1. History of rabbit meat consumption by respondents.

Table 1. Demographic data of the respondents.

| Demographics   | Frequency | Percentage |
|--|-----------|------------|
| <b>Gender</b>  |           |            |
| Male   | 204       | 51         |
| Female   | 196       | 49         |
| <b>Age group</b>   |           |            |
| < 20   | 116       | 29         |
| 21-30  | 240       | 60         |
| 31-40  | 44        | 11         |
| <b>Nationality</b>   |           |            |
| South African  | 328       | 82         |
| Nigerian   | 32        | 8          |
| Zimbabwean   | 40        | 10         |
| <b>Religion</b>  |           |            |
| Christianity   | 280       | 70         |
| Islam  | 20        | 5          |
| Hindu  | 12        | 3          |
| Traditional African  | 52        | 13         |
| Judaism  | 4         | 1          |
| None   | 32        | 8          |
| <b>Meat consumption restriction by religion</b>            |           |            |
| Yes  | 96        | 24         |
| No   | 304       | 76         |
| <b>Specified restricted meat</b>                           |           |            |
| Pork   | 92        | 23         |
| All  | 4         | 1          |
| <b>Monthly income</b>                                      |           |            |
| <500   | 4         | 1          |
| 500-1000   | 24        | 6          |
| 1000-2000  | 256       | 64         |
| >2000  | 116       | 29         |
| <b>Source of income</b>                                    |           |            |
| Bursary  | 236       | 59         |
| Family   | 16        | 4          |
| Part-time job  | 28        | 7          |
| Bursary and part-time job                                  | 64        | 16         |
| Bursary and family   | 44        | 11         |
| Family and part-time job                                   | 4         | 1          |
| All of the above   | 8         | 2          |
| <b>Faculty</b>   |           |            |
| Management and Commerce                                    | 80        | 20         |
| Health Sciences  | 12        | 3          |
| Social Sciences and Humanities                             | 52        | 13         |
| Science and Agriculture                                    | 224       | 56         |
| Education  | 32        | 8          |
| <b>Knowledge of meat gained through respective studies</b> |           |            |
| Yes  | 172       | 43         |
| No   | 228       | 57         |

would not purchase it from grocery stores and restaurants (Table 2). Overall, the majority of people did not know how rabbit meat compares to pork (71%), beef (68%),

goat meat (71%), mutton (69%), and chicken (68%) (Table 3). Out of the respondents who had at least once consumed rabbit meat, 19% found it to be similar to chicken in taste, while 5% found it to be similar to pork (Table 3). A smaller percentage of respondents (4%) found rabbit meat inferior to pork, and 17% reported that it was better than goat meat (Table 3).

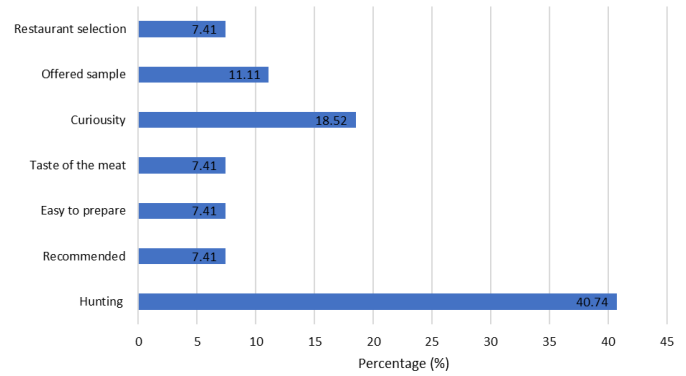


Figure 2. Respondent's reasons for consuming rabbit meat.

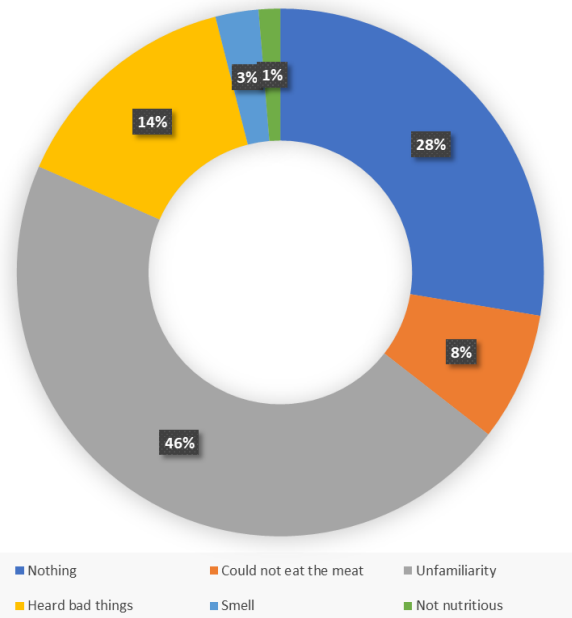


Figure 3. Respondent's reasons for not consuming rabbit meat.

Table 2. Respondents' willingness to consume rabbit meat at different sources.

| Source of rabbit meat     | Willingness to consume rabbit meat | Frequency | Percentage (%) |
|---------------------------|------------------------------------|-----------|----------------|
| Restaurant                | would                              | 156       | 39.0           |
|                           | somewhat                           | 24        | 6.0            |
|                           | undecided                          | 44        | 11.0           |
|                           | would not                          | 176       | 44.0           |
| Grocery store             | would                              | 136       | 34.0           |
|                           | somewhat                           | 40        | 10.0           |
|                           | undecided                          | 60        | 15.0           |
| Friends/ relatives' place | would not                          | 164       | 41.0           |
|                           | would                              | 228       | 57.0           |
|                           | somewhat                           | 16        | 4.0            |
|                           | undecided                          | 48        | 12.0           |
|                           | would not                          | 108       | 27.0           |

Table 3. Comparison of rabbit meat to chicken, beef, mutton, goat meat, and pork.

| Type of meat | Comparison     | Frequency | Percentage (%) |
|--------------|----------------|-----------|----------------|
| Chicken      | better than    | 24        | 6.0            |
|              | similar to     | 76        | 19.0           |
|              | not as good as | 28        | 7.0            |
|              | do not know    | 272       | 68.0           |
| Beef         | better than    | 36        | 9.0            |
|              | similar to     | 0         | 0.0            |
|              | not as good as | 92        | 23.0           |
|              | do not know    | 272       | 68.0           |
| Mutton       | better than    | 64        | 16.0           |
|              | similar to     | 0         | 0.0            |
|              | not as good as | 60        | 15.0           |
|              | do not know    | 276       | 69.0           |
| Goat meat    | better than    | 68        | 17.0           |
|              | similar to     | 8         | 2.0            |
|              | not as good as | 40        | 10.0           |
|              | do not know    | 284       | 71.0           |
| Pork         | better than    | 16        | 4.0            |
|              | similar to     | 20        | 5.0            |
|              | not as good as | 80        | 20.0           |
|              | do not know    | 274       | 71.0           |

### 3.3 Factors that inform meat purchasing decisions

Most students buy meat at supermarkets (86%) and grocery shops (75%), while only 34% purchase meat from the street (Table 4). Oddly, it was observed that only 40% of respondents purchased meat from the student center, despite it being more proximal to their residences (Table 4). Most respondents (81%) chose the locations they purchase meat from because they are cheap, and 60% chose these locations because they have fresh meat (Table 5). Only 31% of respondents considered good service in their choice of location for purchasing meat (Table 5).

Table 4. Locations where respondents buy meat from.

| Location of meat purchase | Response | Frequency | Percentage (%) |
|---------------------------|----------|-----------|----------------|
| Supermarket               | Yes      | 344       | 86.0           |
|                           | No       | 56        | 14.0           |
| Butchery                  | Yes      | 300       | 75.0           |
|                           | No       | 100       | 25.0           |
| Grocery shop              | Yes      | 256       | 64.0           |
|                           | No       | 144       | 36.0           |
| Student centre            | Yes      | 160       | 40.0           |
|                           | No       | 240       | 60.0           |
| Street                    | Yes      | 136       | 34.0           |
|                           | No       | 264       | 66.0           |

Table 5. Respondent's reasons for buying meat at selected locations.

| Reasons for buying meat at selected locations | Response | Frequency | Percentage (%) |
|---|----------|-----------|----------------|
| Fresh meat                                    | Yes      | 264       | 66.0           |
|   | No       | 136       | 34.0           |
| Good quality meat                             | Yes      | 212       | 53.0           |
|   | No       | 188       | 47.0           |
| Cheap   | Yes      | 324       | 81.0           |
|   | No       | 76        | 19.0           |
| Good service                                  | Yes      | 124       | 31.0           |
|   | No       | 276       | 69.0           |
| Variety of meat                               | Yes      | 236       | 59.0           |
|   | No       | 164       | 41.0           |
| Location is close                             | Yes      | 152       | 38.0           |
|   | No       | 248       | 62.0           |

Most respondents (66%) consider chicken as their most-bought meat, and only 2% chose chicken as their fourth option compared to pork, beef, and mutton (Table 6). Only 1% of respondents bought more other meats, such as fish and crabs. The results about why consumers buy different types of meat. Most respondents (80%) bought the type of meat they bought because it was cheap and they enjoyed its taste (81%) (Table 7). High nutrition (36%), and the health-related aspects of meat (45%), were not considered by the majority of respondents when buying meat (Table 7).

Most respondents (70%) reported that they checked the colour of meat before purchasing it (Table 8). While a few students (14%) are not sure about their preference for fat in meat, most respondents (43%) do not buy meat with a lot of fat, and only 38% do not prefer lean meat. A smaller percentage (29%) of respondents are sure that they check the nutritional values of meat on packaging before purchasing, while more than half (76%) check the expiration date. The respondents who check the smell of the meat before buying it are equal to those who do not check it, while 22% only check the smell occasionally (39%). Most (57%) of respondents only buy meat from certain brands that they are used to. While the majority (73%) of respondents refuse to pay any amount of money for meat of good quality, only 20% can pay more for meat with a good nutritional balance. Only 22% of respondents strongly agree that they buy white meat instead of red meat because it is healthier. The majority (73%) of respondents strongly agree that meat packaging and presentation are important. The meat quality is positively correlated ( $P = 0.022$ ) with the health aspect of the meat (Table 9). Presentation of the meat and quality are also positively correlated ( $P = 0.013$ ).



Table 6. Ranking of meat from least bought to most bought.

| Ranking of meat from most bought to least bought | Frequency | Percentage (%) |
|--|-----------|----------------|
| <b>Beef</b>                                      |           |                |
| Least bought                                     | 8         | 2.0            |
| Fourth bought                                    | 60        | 15.0           |
| Third bought                                     | 112       | 28.0           |
| Second bought                                    | 156       | 39.0           |
| Most bought                                      | 64        | 16.0           |
| <b>Chicken</b>                                   |           |                |
| Least bought                                     | 0         | 0.0            |
| Fourth bought                                    | 8         | 2.0            |
| Third bought                                     | 32        | 8.0            |
| Second bought                                    | 92        | 23.0           |
| Most bought                                      | 268       | 67.0           |
| <b>Pork</b>                                      |           |                |
| Least bought                                     | 56        | 14.0           |
| Fourth bought                                    | 104       | 26.0           |
| Third bought                                     | 120       | 30.0           |
| Second bought                                    | 72        | 18.0           |
| Most bought                                      | 48        | 12.0           |
| <b>Mutton</b>                                    |           |                |
| Least bought                                     | 48        | 12.0           |
| Fourth bought                                    | 156       | 39.0           |
| Third bought                                     | 108       | 27.0           |
| Second bought                                    | 18        | 18.0           |
| Most bought                                      | 16        | 4.0            |
| <b>Other</b>                                     |           |                |
| Least bought                                     | 304       | 76.0           |
| Fourth bought                                    | 72        | 18.0           |
| Third bought                                     | 16        | 4.0            |
| Second bought                                    | 4         | 1.0            |
| Most bought                                      | 4         | 1.0            |

Table 7. Respondent's reasons for buying selected types of meat.

| Reasons for buying selected meats | Frequency | Percentage (%) |
|-----------------------------------|-----------|----------------|
| Cheap                             | Yes       | 320            |
|                                   | No        | 80             |
| Taste                             | Yes       | 324            |
|                                   | No        | 76             |
| High nutrition                    | Yes       | 144            |
|                                   | No        | 256            |
| Healthy                           | Yes       | 180            |
|                                   | No        | 220            |
| Only option available             | Yes       | 12             |
|                                   | No        | 388            |

Table 8. Consumer perceptions about factors that affect purchasing decisions.

| Meat characteristics that are considered in purchasing  | Frequency         | Percentage (%) |
|---|-------------------|----------------|
| I check the colour of meat before purchase              | Strongly disagree | 20             |
|   | Disagree          | 28             |
|   | Not sure          | 72             |
|   | Agree             | 80             |
|   | Strongly agree    | 200            |
| I buy meat with a lot of fat                            | Strongly disagree | 116            |
|   | Disagree          | 56             |
|   | Not sure          | 56             |
|   | Agree             | 68             |
|   | Strongly agree    | 104            |
| I check nutritional values of meat before purchase      | Strongly disagree | 152            |
|   | Disagree          | 80             |
|   | Not sure          | 52             |
|   | Agree             | 76             |
|   | Strongly agree    | 40             |
| I check the expiry date of the meat                     | Strongly disagree | 36             |
|   | Disagree          | 12             |
|   | Not sure          | 48             |
|   | Agree             | 112            |
|   | Strongly agree    | 192            |
| I smell the meat before buying                          | Strongly disagree | 96             |
|   | Disagree          | 60             |
|   | Not sure          | 88             |
|   | Agree             | 48             |
|   | Strongly agree    | 108            |
| I only buy meat from certain brands                     | Strongly disagree | 100            |
|   | Disagree          | 36             |
|   | Not sure          | 36             |
|   | Agree             | 136            |
|   | Strongly agree    | 92             |
| I can pay any amount for good-quality meat              | Strongly disagree | 240            |
|   | Disagree          | 52             |
|   | Not sure          | 32             |
|   | Agree             | 28             |
|   | Strongly agree    | 48             |
| I buy the cheapest meat available                       | Strongly disagree | 100            |
|   | Disagree          | 56             |
|   | Not sure          | 76             |
|   | Agree             | 88             |
|   | Strongly agree    | 80             |
| I check the nutritional values of meat on the packaging | Strongly disagree | 152            |
|   | Disagree          | 80             |
|   | Not sure          | 52             |
|   | Agree             | 76             |
|   | Strongly agree    | 40             |

Table 8 (Cont.). Consumer perceptions about factors that affect purchasing decisions.

| Meat characteristics that are considered in purchasing    |                   | Frequency | Percentage (%) |
|---|-------------------|-----------|----------------|
| I pay more for meat with a good nutritional balance       | Strongly disagree | 188       | 47.0           |
|   | Disagree          | 88        | 22.0           |
|   | Not sure          | 44        | 11.0           |
|   | Agree             | 28        | 7.0            |
|   | Strongly agree    | 52        | 13.0           |
| I prefer lean meat  | Strongly disagree | 76        | 19.0           |
|   | Disagree          | 76        | 19.0           |
|   | Not sure          | 76        | 19.0           |
|   | Agree             | 52        | 13.0           |
|   | Strongly agree    | 120       | 30.0           |
| I buy white meat instead of red meat because it is health | Strongly disagree | 112       | 28.0           |
|   | Disagree          | 64        | 16.0           |
|   | Not sure          | 60        | 15.0           |
|   | Agree             | 76        | 19.0           |
|   | Strongly agree    | 88        | 22.0           |
| Meat packaging and presentation are important             | Strongly disagree | 4         | 1.0            |
|   | Disagree          | 0         | 0.0            |
|   | Not sure          | 28        | 7.0            |
|   | Agree             | 72        | 18.0           |
|   | Strongly agree    | 296       | 74.0           |

Table 9. Correlation between factors that affect meat selection.

| Factors affecting meat selection | Quality | Price  | Health | Presentation |
|----------------------------------|---------|--------|--------|--------------|
| <b>Quality</b>                   |         |        |        |              |
| Pearson Correlation              | 1       | -0.034 | 0.228* | 0.248*       |
| Sig. (2-tailed)                  |         | 0.738  | 0.022  | 0.013        |
| N                                | 100     | 100    | 100    | 100          |
| <b>Price</b>                     |         |        |        |              |
| Pearson Correlation              | -0.034  | 1      | 0.08   | -0.076       |
| Sig. (2-tailed)                  | 0.738   |        | 0.428  | 0.451        |
| N                                | 100     | 100    | 100    | 100          |
| <b>Health</b>                    |         |        |        |              |
| Pearson Correlation              | 0.228*  | 0.08   | 1      | 0.236*       |
| Sig. (2-tailed)                  | 0.022   | 0.428  |        | 0.018        |
| N                                | 100     | 100    | 100    | 100          |
| <b>Presentation</b>              |         |        |        |              |
| Pearson Correlation              | 0.248*  | -0.076 | 0.236* | 1            |
| Sig. (2-tailed)                  | 0.013   | 0.451  | 0.018  |              |
| N                                | 100     | 100    | 100    | 100          |

#### 4. Discussion

Most respondents were between the ages of 21 and 30. This was expected because most university students' ages are in this range. Conducting a study on this age group is important as they purchase the most meat and ultimately consume the most meat and processed meat

products compared to the rest of the population (Sui *et al.*, 2017). Understanding and evaluating their perceptions can be a guide to marketing rabbit meat and can potentially lead to increased demand. Most respondents were Christians, and religion affects meat consumption; this is evidenced by a study done on the influence of religion and ethnic groups on rabbit meat consumption (Erasmus and Hoffman, 2017). However, meat restrictions affect only certain types of meat. This study found that pork is the most restricted meat, while chicken is less restricted by religion. Moreover, since in this study, only 1% are restricted from consuming all types of meat, it can be assumed that rabbit meat will face fewer restrictions. The findings of the current study that most Christian respondents are not restricted from consuming any meat by their religion contradict a study done in the Western Cape (Erasmus and Hoffman, 2017) that found most Christians to be restricted from consuming pork and rabbit meat.

A quarter of respondents have once consumed rabbit meat, and most of those who have consumed rabbit meat got it from hunting. Only a few students got it from a restaurant selection or because of their knowledge of the meat's ease of preparation, its taste, or a recommendation. This shows that most respondents have not bought rabbit meat, which might be due to its unavailability in the market. This corresponds to a study by McLean-Meyinsse *et al.* (1994), which stated that most respondents did not consume rabbit meat because of its ease of preparation, taste, low fat, and taste but had consumed it as game meat. The respondents who had never consumed rabbit meat were asked to indicate their reasons for not consuming it, and the most common reason was unfamiliarity with rabbit meat. This may be because consumers are more comfortable consuming products that they are familiar with, which is supported by other studies (Bisschoff, 2017; Erasmus and Hoffman, 2017).

Respondents were asked if they would consume rabbit meat if it were sold at restaurants, grocery stores, or from friends and relatives. The selected responses would and somewhat were grouped as a possible market likely to consume rabbit meat at different locations. More respondents were likely to try rabbit meat if it was from friends and relatives. This might be due to group cultures and moral values and is less associated with the demand for rabbit meat and consumer interests in it. This is further evidenced by lower respondents' willingness to buy rabbit meat if it was sold at restaurants and grocery stores. This is supported by a study by Galt *et al.* (2014), which stated that consumers are more likely to consume food if it is available from friends and relatives as a gesture of kindness.

Out of the respondents who once consumed rabbit meat, 19% found it similar to chicken. This was the highest similarity value found between rabbit meat and other meats. These results were expected as rabbit meat has been found to be similar to chicken in other studies (Samuelsson, 2020; Magalhães *et al.*, 2022; Leiva *et al.*, 2023). Despite most respondents not knowing how fair rabbit meat is in comparison with other meats, the respondents who showed knowledge stated that it is not as good as beef and pork. These results show that if rabbit meat is sold at supermarkets, it can appeal to most chicken consumers.

Most respondents buy chicken more than any other type of meat in the market; however, it is shown that consumers buy it because of its cheaper prices and taste instead of the health benefits related to white meat. More than 50% of respondents consider high nutrition when they purchase meat. This can be used to market and advertise rabbit meat for it to be sold in this region, as it has higher amounts of protein compared to the currently popular meats.

Respondents perceive high-quality meat as healthy. Respondents also perceived that the presentation of the meat shows its quality, and if the presentation is good, the meat also has good quality. If rabbit meat is to be sold in retail shops, proper presentation must be a priority to attract consumers. A total of 57% of the participants only buy meat from certain brands. This shows that the brands produce meat that satisfies consumers, thus creating loyalty to their brands. Only 27% of respondents smelled the meat before buying it to determine its freshness. This relatively small number shows that most consumers do not care about the smell of the meat in this region, in contrast to a study conducted in China (Soon and Liu, 2020).

Most respondents check the expiration date of meat and do not smell it. In other studies, it was stated that most consumers consider meat with a bad smell to be unhealthy and of poor quality (Chamhuri and Batt, 2015; Mandolesi *et al.*, 2020; Nasiri *et al.*, 2023). However, in this study, most respondents (70%) checked the colour of meat before buying it. This results from the perception that dark meat is stale and might lead to diseases. The colour of white meat, such as chicken, turkey, and rabbit meat, must be light pink with white fatty pieces in the absence of green parts in the meat or yellow fat (Altmann *et al.*, 2023). Only a few respondents agreed that they can pay any price for good-quality meat, as most respondents only earn income that is between R1000 and R2000, resulting in their preference for cheap meat. The number of respondents that buy the cheapest meat available (42%) is greater than the number that disagrees with buying the cheapest meat (39%), which

shows that for meat to be appealing and bought more by consumers, it must be at the cheapest price possible. Only 10% strongly agree to check the nutritional values of meat, which shows that most respondents do not care about the nutritional balance of meat and do not consider it when purchasing meat.

Only 20% of respondents are willing to pay more for meat with a good nutritional balance, which shows that fewer respondents are willing to pay more for meat with a good nutritional balance, which was unexpected because studies show that consumers are becoming more health-conscious and want to consume food with a good nutritional balance (Sevillano-Morales *et al.*, 2021; Estévez-Moreno and Miranda, 2022). Despite most respondents having chicken as their most bought meat, it is clear that it is not related to the healthiness of the meat or its nutritional information. Only 22% of respondents strongly agreed that they buy white meat rather than red meat because it is healthier, while a total of 44% disagreed with the statement. This might be due to a lack of education in the area about the benefits of white meat versus red meat.

#### 4. Conclusion

This study analysed consumer perceptions of rabbit meat. Most students at the University of Fort Hare have never consumed rabbit meat due to their unfamiliarity with the meat. Despite students buying chicken more than other meats and rabbit meat having similarities with chicken, fewer consumers were willing to buy rabbit meat if it was sold at grocery shops and supermarkets; instead, they would be more inclined to consume it from friends and family. This indicates that there is little rabbit meat market in this region, as most respondents are unwilling to spend their money on buying it. This may be highly attributed to their unfamiliarity with it or their lack of knowledge about its benefits because most consumers are likely to buy meat that they are familiar with, while others buy meat that is good for their health. It is recommended that consumers be educated about the health benefits of rabbit meat and its safety for consumers with chronic diseases such as diabetes and heart disease. Rabbit meat must be promoted as a healthy alternative to red meat.

#### Conflicts of interest

There authors declare no conflict of interest.

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