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RED MEAT CONSUMERS' PREFERENCES: A CASE STUDY OF THE MANGAUNG METROPOLITAN MUNICIPALITY

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Abstract

The consumption of beef and mutton products amongst South African consumers are expected to steadily increase in the near future. Across the world consumers are consuming diets that are higher in protein and the red meat industry is changing from being a production-led to a consumer-driven industry. To meet the needs of red meat consumers, retailers and producers should stay up to date with the changes in their consumers' demands. The aim of this study was to determine red meat consumers' preferences in the Mangaung metropolitan municipality of the Free State province of South Africa. In total, 350 consumers were interviewed by making use of a convenience sampling technique at eight different locations across the metropolitan area. A semi-structured questionnaire was used to determine consumers' preferences. From the results it was found that consumers have specific requirements with regard to the red meat products they purchase. Price was found to be the most important self-reported aspect of red meat products by consumers in the study. In terms of the physical appearance of packaged meat, consumers showed a clear preference toward bright red meat with the neatness of the cuts and the fat on the meat being slightly less important.

Keywords: Red meat, consumer preferences, labelling

Background and Motivation

The South African red meat sector is a large contributor towards agriculture's gross domestic product (GDP) that contributed an estimated R37.2 billion in 2016 (DAFF, 2017). Approximately 3.2% of annual household consumption expenditure is spent on meat and it is the commodity that contributes the largest share of total retail value in South Africa (Statistics South Africa [Stats SA], 2012; Stats SA, 2018). The total beef consumption in South Africa has shown a steady increase since the early 2000s. The per

capita consumption of beef has risen from 16.71 kilograms (kg) in 2012 to 20.93 kg in 2017 (DAFF, 2016). Predictions show that local beef and mutton/lamb consumption will increase by 6% and 10% respectively between 2015 and 2025 (BFAP, 2016). The meat industry is changing from being a production-led to a consumer-driven industry (Issanchou, 1996). Globally, protein is enjoying the attention of consumers as people across the world are following diets that are richer in protein (New Nutrition Business, 2017). They prefer more natural protein that comes in a convenient product form (Issanchou, 1996; BFAP, 2014). Protein that was seen as a micro trend in food products in 2010 has grown to a full-fledged food trend in 2017 (New Nutrition Business, 2017). Meat and meat products are among the main sources of protein in human diets (Font I Furnols & Guerrero, 2014).

In the early part of the 21st century the red meat industry in South Africa has become more consumer driven. Complying with consumer needs and preferences is critical for the future sustainability of red meat producers who want to ensure their businesses' future by satisfying their customers. To comply with and satisfy consumer needs, red meat retailers and producers need to know more about their consumers' needs and wants. No recent study has been done in the Mangaung metropolitan municipality to determine the recent trends in red meat consumer's preferences. Red meat retailers and producers in this area can therefore not be advised on what their consumers prefer with regard to the product they sell. The aim of this study was to identify red meat consumers' preferences in the Mangaung Metropolitan municipality. Information on this topic will assist red meat retailers and producers to provide the market with the required red meat products.

Study Area and Data Collection

The study area for this research was the Mangaung Metropolitan Municipality, which is situated in the Free State province of South Africa. The majority of the population in the area resides in Bloemfontein, Botshabelo, and Thaba Nchu. Mangaung is the smallest metropolitan municipality in South Africa, with a population of 747 431 people (Stats SA, 2011). The majority of the population is black (83.3%), with Sesotho being the language spoken by the largest share (51.9%) of the population. According to statistics, 11.4% of the households in the municipality have no average monthly household income, and the largest income quintile that represents 20.2% of the population is R19 601 to R38 200.

Other relevant statistics of the Mangaung Metropolitan Municipality are shown in Table 1.

Table 1: Population statistics for Mangaung Metropolitan Municipality as per Census 2011

Language	Percentage	Average monthly household income	Percentage
Afrikaans	15.8%	No income	11.4%
English	4.2%	R1 – R4 800	4.6%
IsiNdebele	0.4%	R4 801 – R9 600	6.8%
IsiXhosa	9.6%	R9 601 – R19 600	17.2%
IsiZulu	0.9%	R19 601 – R38 200	20.2%
Sepedi	0.3%	R38 201 – R76 400	14.1%
Sesotho	51.9%	R76 401 – R153 800	10.3%
Setswana	12.3%	R153 801 – R307 600	8%
Sign language	1.1%	R307 601 – R614 400	5%
SiSwati	0%	R614 001 – R1 228 800	1.6%
Tshivenda	0.1%	R1 228 801 – R2 457 600	0.4%
Xitsonga	0.1%	R2 457 601+	0.4%
Other	0.60%		
Gender	**Percentage**	**Level of education**	**Percentage**
Female	51.5%	No schooling	3.3%
Male	48.5%	Some primary	37.7%
Race	**Percentage**	Completed primary	5.4%
Black African	83.3%	Some secondary	30.6%
Coloured	5%	Completed secondary	16.5%
Indian/Asian	0.4%	Higher education	3.7%
White	11%	Not applicable	2.7%
Other	0.3%		

Source: Stats SA (2011)

In order to collect data from red meat consumers across the metropolitan area, the locations that were identified for data collection had to represent the various types of red meat retailers found in the metropolitan area. The chosen location had to represent butcheries, supermarkets that sold red meat, as well as wholesalers of red meat. For this, various shops, malls, and butcheries were used as locations to collect data during the field survey. In total, eight test locations were used that were spread-out across the metropolitan area. The process of data collection took place between 22 May 2017 and 1 July 2017. A

convenience sampling technique was used as a method of data collection, where a form of interceptive survey was used to sample red meat consumers. Interceptive surveys are a form of convenience sampling that can be used in a mall scenario (Battaglia, 2011). Participants were approached as they moved past the testing station. Only individuals who indicated that they consume red meat products were interviewed.

This questionnaire contained questions regarding the monthly household income of the participants, their monthly food budget, how often their households ate red meat, their cut preference and other related open-ended questions. The data from the questionnaire were used to determine the red meat aspects that consumers reported as being important when buying red meat products. Besides identifying the aspects consumers regard as import, the data were also used to identify red meat consumer trends that could provide allow retailers and producers with valuable information.

Data were collected from 350 participants at eight locations stationed across the Mangaung Metropolitan Municipality. Some respondents did not complete the questionnaire and were unwilling to answer questions such as average household income and the budgeted monthly amount for meat. These respondents (43) were removed from the data to ensure that the data could be analysed accurately. A complete dataset for 307 respondents was extracted and was used to generate the results for this study[1].

Results and Discussion

Table 2 shows the demographic information of the respondents. The majority of the respondents were men (66.1%). The largest age groups that were tested were 18 to 30 (29.6%), 31 to 40 (27.4%), and 41 to 50 (20.5%). More than half of the respondents (51.1%) completed Grade 12, while 41.7% had at least a degree or diploma. The race demographics seem to correlate with available information of the municipality. The largest share of the participants (81.4%) were black (vs. 83.3% in the metropolitan area), 14.7%

[1] It should be noted that these results are part of a larger study that investigated red meat consumer's preferences with the help of eye-tracking. This article only presents the questionnaire based results.

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were white (vs. 11% in the metropolitan area), and 3.6% were coloured (vs. 5% in the metropolitan area). Household income data show that the largest share (45.3%) of the participants fell in the marginalised or lower-income (LSM 1-4) consumer groups, middle-class consumers (LSM 5-7) represented 35.8% of respondents, and the wealthy class (LSM 8-10) represented 18.9% of the respondents.

Table 2: Demographic statistics of the respondents

Aspect	Option	Number	Percentage
Gender	Male	203	66.1%
	Female	104	33.9%
Age (years)	18-30	91	29.6%
	31-40	84	27.4%
	41-50	63	20.5%
	51-60	47	15.3%
	61-70	20	6.5%
	71-80	2	0.7%
Education	Primary (Grade 1 to 7)	22	7.2%
	Secondary (Grade 8-12)	157	51.1%
	Tertiary (degree or diploma)	128	41.7%
Race	Black	250	81.4%
	White	45	14.7%
	Coloured	11	3.6%
	Asian	1	0.3%
Income of household	LSM 1	67	21.8%
	LSM 2	26	8.5%
	LSM 3	29	9.4%
	LSM 4	17	5.5%
	LSM 5	39	12.7%
	LSM 6	42	13.7%
	LSM 7	29	9.4%
	LSM 8	15	4.9%
	LSM 9	25	8.1%
	LSM 10	18	5.9%

Information regarding household sizes and monthly red meat budgets obtained from the participants is shown in Table 3. The average size of households that participated in the study was 3.6 people, the largest household size was 10 people, and the households that were tested jointly represented 1 114 people. The combined monthly budget for meat purchases was R284 515[2]. Average monthly meat budgets per household proved to be R926.80, with the minimum budget for meat purchases being R40 and the maximum

[2] R13.16 = $1 exchange rate of 31 July 2018

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budget being R10 000. Besides the monthly budget for meat, the questionnaire also differentiated between the monthly budget for beef and mutton/lamb. The maximum monthly budget for beef was R3 000, with the average among participants determined at R378.90. The maximum monthly budget for mutton/lamb meat was R2 500, with the average budget calculated at R314. Some participants indicated that they purchase only beef or mutton/lamb products and this led to minimum budgets of zero. Many participants also indicated that they did not buy mutton/lamb products often due to the higher price. It was interesting to see that the expenditure on beef and mutton represented just more than 65% of the total meat budget of the participating households. This can serve as an indication of a health-related demand in the market for red meat retailers.

Table 3: Participant household size and meat budget information

Variable	Sum	Minimum	Maximum	Average	Median
Size of household	1 114	1	10	3.6	4.0
What is your household's monthly budget for meat?	R284 515	R40	R10 000	R926.8	R650
What amount of your household's monthly budget is spent on beef?	R109 115	R0	R3000	R378.9	R250
What amount of your household's monthly budget is spent on mutton/lamb?	R75 999	R0	R2500	R314	R200

Meat consumption patterns are shown in Figure 1. These patterns show that just more than one-third (36%) of the participants indicated that they eat red meat at least once per day. Only 4% of the participants eat red meat three times a day, 10% eat red meat twice a day, and 22% eat some form of red meat once a day. During the interviews, some participants indicated that they only eat red meat over weekends and this was seen in the large percentage (40%) of participants who eat red meat less than 10 times per month. Equal to the percentage of participants (22%) who eat red meat once a day, other participants eat red meat less than five times a month. These findings show the diversely different classes of consumers that should be catered for in the Mangaung metropolitan.

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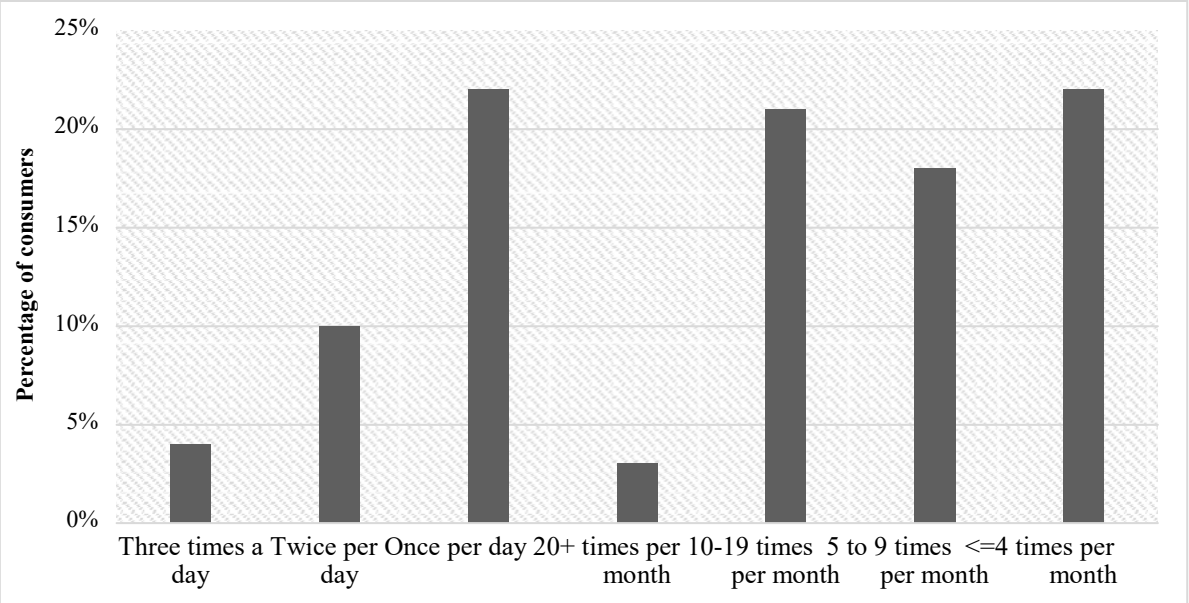

Figure 1: Meat consumption patterns of participants

The majority of the participants (65.5%) indicated that they prefer to buy their meat from butcheries (see Figure 2), while 28% of the participants indicated that they prefer to purchase their red meat from supermarkets. A small percentage (4.1%) of the tested sample indicated that they prefer to buy from wholesalers. Only one participant (0.33%) prefers to buy red meat from convenience stores, while 0.76% of the participants buy their red meat directly from farmers. Just more than one percent (1.1%) of the tested participants indicated that they slaughter their own animals for meat. Participants were asked to rank the different locations of buying red meat according to a scale: 1 = never, 2 = seldom, 3 = sometimes, 4 = often, 5 = very often. Butcheries received an average score of 3.9, which was the highest, while supermarkets scored an average of 2.7.

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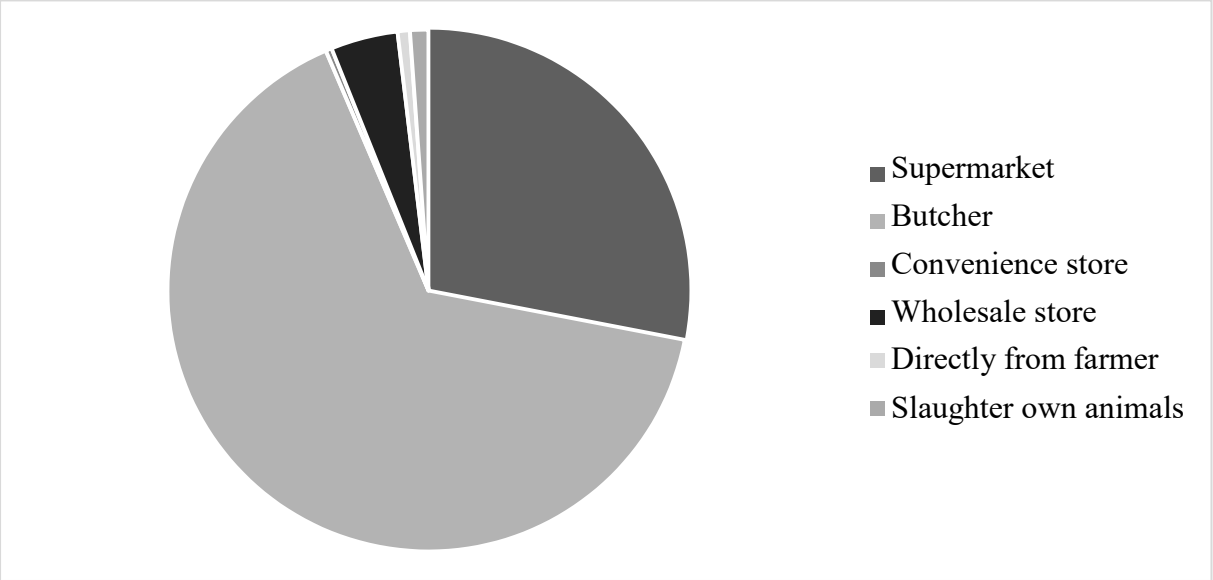

Figure 2: Preferred location to purchase red meat

The participants' behavioural investigation results are shown in Figure 3, where the average number of visits to the different meat retailers per month to buy meat is shown. Supermarkets had the highest visit rate with an average of 2.6 visits per month, convenience stores received 2.4 visits per month, and butcheries 2.2 visits per month. Wholesale stores and sales directly from farmers had the lowest visit rate. This can be explained by larger volumes of meat sold to the customer per visit, lowering the need for frequent visits. When the data from Figure 3 are compared to the data in Figure 2, it is clear that the majority of the participants prefer to buy their red meat from butcheries (65.5%), while supermarkets and convenience stores are only the preferred choice for red meat purchases of respectively 28% and 0.33% of the participants. The results would suggest that while most consumers prefer to buy their red meat from butcheries, they visit them less often for purchases. When visiting butcheries, bulk purchases may be made to prevent more frequent trips to butcheries. One could also argue that supermarkets are visited more regularly for general grocery purchases, which allows for more convenient purchases of red meat. While a very small number of participants prefer to buy their red meat from convenience stores, the high visit rate could be explained by the need for red meat occurring outside the business hours of the other meat-selling outlets.

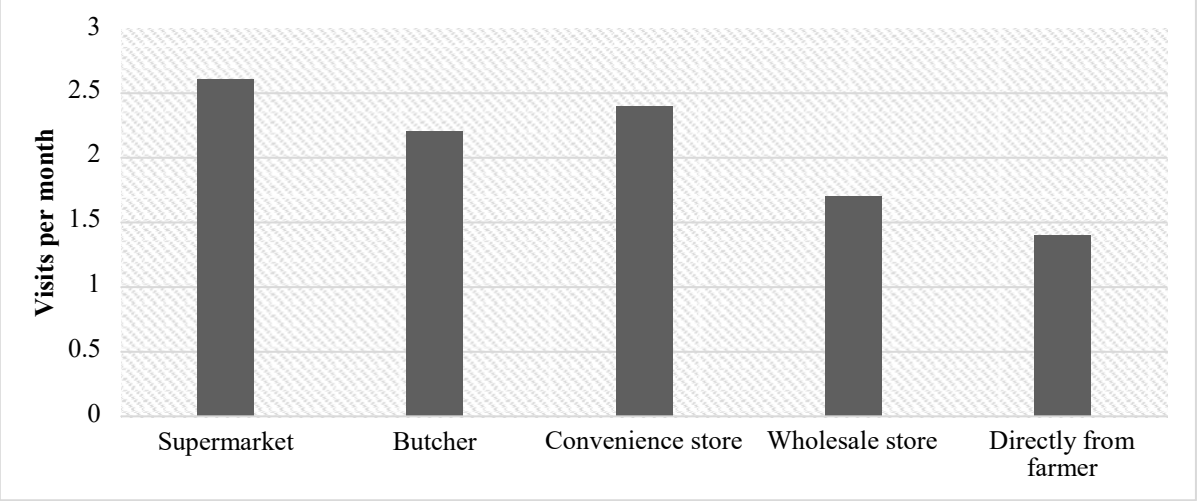

Figure 3: Number of times retailers are visited to buy red meat

In the post-test questionnaire, the participants were asked what the important aspects are that they take into account when buying meat (see Table 4). In the case of beef, price (54.2%), fat (43.1%), expiry date (27.1%), colour (27.1%), and freshness (26%) were identified as the most important aspects. Aspects that mutton/lamb consumers indicated as important were the price (48.3%), fat (39.3%), colour (27.3%), expiry date (26.9%), and freshness (23.6%). It was interesting that about 4% of the participants indicated that they take the classification (class) of beef into account and roughly 1% of the participants indicated that they search for the classification stamp on the meat they buy. This shows that a low percentage of the participants were aware of the classification system as well as the working thereof which entails that all of the animals bought for the meat market are classed according to the system. During the interviews, it became clear that the participants wanted to know how the classification system works and more specifically what it means to buy Class B2 and C5 meat. In some cases where participants said that they buy Class A meat, they were unable to explain what it meant. This could serve as a sign of the need for consumer education. Quality proved to be high on consumers' aspect list but quality is a generic term that is not linked to any of the tangible aspects. This does, however, prove that there is room to improve meat sales if these products could be backed by a quality indicator of some sort that is also understood by consumers.

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Table 4: Aspects evaluated by consumers when buying red meat

Most important aspects when buying beef		Most important aspects when buying mutton/lamb	
Price	54.2%	Price	48.3%
Fat	43.1%	Fat	39.3%
Expiry date	27.1%	Colour	27.3%
Colour	27.1%	Expiry date	26.9%
Freshness	26.0%	Freshness	23.6%
Quality	20.5%	Quality	21.1%
Thickness	14.6%	Thickness	12.8%
Bone ratio	8.7%	Bone ratio	7.0%
Packaging	7.3%	Neatness	6.6%
Size	6.9%	Packaging	6.2%
Neatness	6.3%	Blood	5.4%
Weight/kg	5.6%	Size	4.5%
Blood	4.9%	Classification (grade)	4.1%
Classification (grade)	3.8%	Quantity	3.7%
Cut	3.5%	Weight/kg	3.3%
Quantity	3.1%	Cut	2.9%
Age	1.7%	Classification/stamp	1.2%
Brand	1.4%	Condition	1.2%
Fresh meat, not frozen or packed	1.4%	Age	1.2%
Condition	1.4%	Protein content	0.8%
Protein content	1.0%	Fresh meat, not frozen or packed	0.8%
Classification/stamp	1.0%	Portion	0.8%
Marbling	0.7%	Sell-by date	0.8%
Portion	0.7%	Slaughter date	0.8%
Tenderness	0.3%	Brand	0.8%
Smell	0.3%	Packaging date	0.4%
Seasoned	0.3%	Marbling	0.4%
Origin	0.3%	Seasoned	0.4%
Bar code	0.3%	Lamb meat	0.4%
Sell-by date	0.3%	Smell	0.4%
Slaughter date	0.3%	Tenderness	0.4%
Packaging date	0.3%	Bar code	0.4%

- *Pricing label information*

Consumer behaviour was further investigated with questions that related to the price of the meat shown. The participants were asked to rate their behaviour towards the price of the pack of meat and the price per kg by indicating how often they looked at these aspects (see Table 5), where 1 = never, 2 = seldom, 3 = sometimes, 4 = often, and 5 = always. Price per kg received the highest average rating (4.3), with price per pack receiving an average rating of 4.2. It could be noted from this that the participants indicated in the self-

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reported data collection that they focused on price per kg more often than the price of the pack. This would suggest that they base their purchasing decision on the price per kg rather than the price of the pack.

Table 5: How often consumers reported looking at on-pack red meat price information

Pricing aspect	Average rating
Price per kg	4.3
Price per pack	4.2

- *Importance of quality indicator labelling*

The participants were asked to rate the importance of the different quality indicators that they would want to see on the meat they purchase on a scale from 1 to 5 (1 = not important; 5 = very important). The average scores and different labelling aspects that were tested are shown in Figure 4. Note that this labelling does not include the price per pack, price per kg, sell-by date and other aspects shown on the price label but rather labels that serve as quality indicators. From the score results across the whole group of participants, the highest-rated labels were “Top quality guaranteed” (3.9), “Proudly made in SA” (3.8), brand certification (3.4), and origin certification (3.1). Labelling that received average scores were “Aged” meat (3.0), “Sustainably produced” (3.0), NIT (3.0), “No antibiotics” (2.9), “Grass fed” (2.9), “No added hormones” (2.8), “Certified humane” (2.7), “100% organic” (2.7), and “Grain fed” (2.7). The lowest scores were given to breed certification (2.6), “Free range” labels (2.6), QR codes (2.5), and “Halal” labels (1.8). These results emphasise consumers awareness toward the quality of the red meat that they intend to purchase with the high ranking scored by the “Top quality guaranteed” and brand certification labelling. Consumers, on the other hand, also have a strong preference for South African produced red meat as indicated by their rankings. The mid-range labels mostly relate to red meat that is produced more naturally and indicates consumers in the Mangaung metropolitan area prefers to purchase red meat produced more naturally.

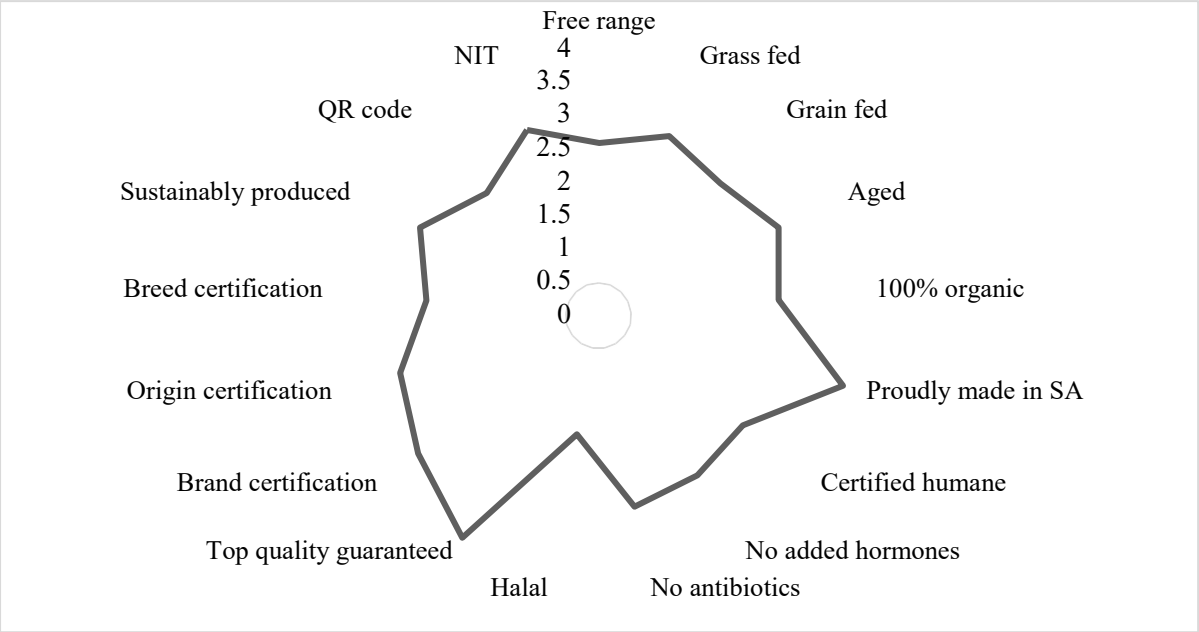

Figure 4: Ratings of labelling importance by participants

- *Colour preference*

The colour preferences that the participants indicated for the meat they buy are presented in Figure 5 for mutton/lamb meat, and Figure 6 for beef[3]. For beef, the majority (70.2%) of the participants prefer to buy cherry-red meat, with 28.4% of the participants indicating that they prefer dark-red beef. In the case of mutton, the participants prefer cherry-red meat (81.4%) and dark-red meat (32.6%). These results are a good indication to red meat retailers of the colour that their meat should be. Both beef and sheep meat should generally be bright red to meet the preferences of the majority of the market with sheep meat consumers being slightly more acceptable of darker red meat than in the case of beef.

[3] Note that some participants indicated that they prefer two colours of meat without discrimination between them and they were allocated for both colour options.

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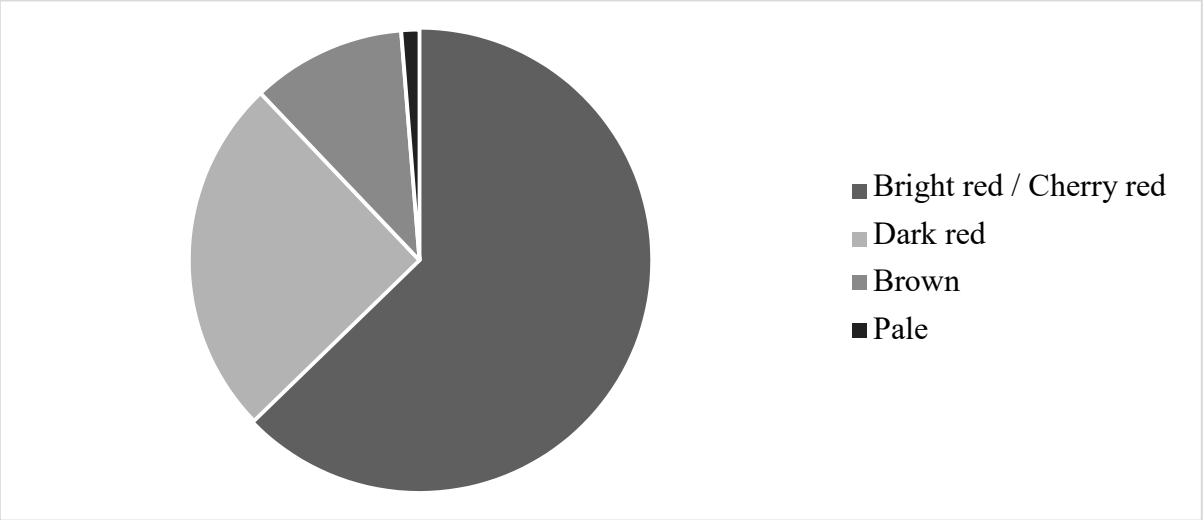

Figure 5: Lamb/mutton meat colour preference among participants

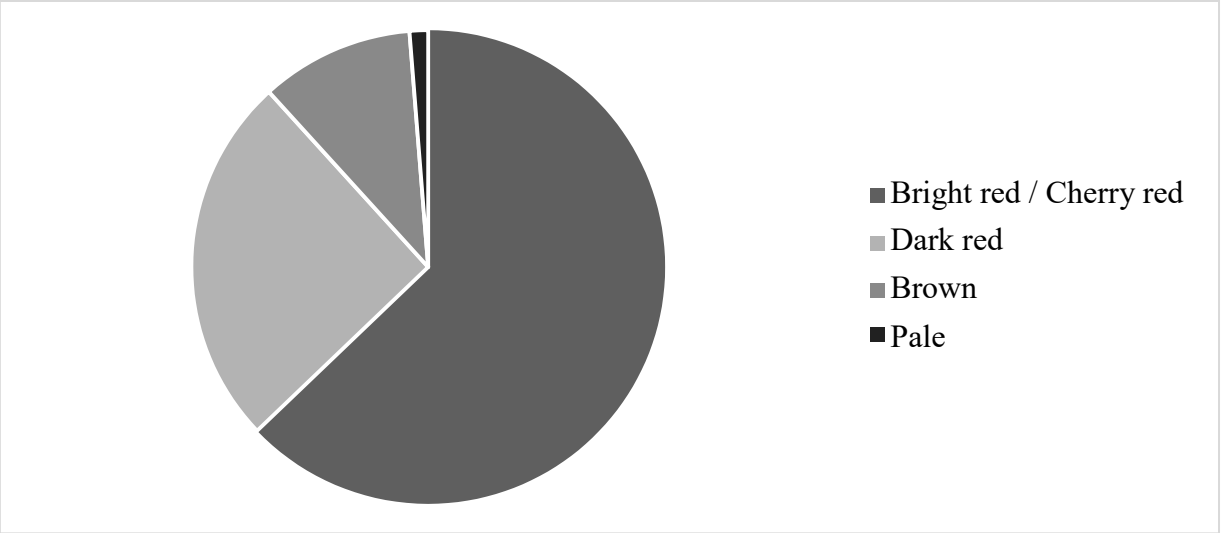

Figure 6: Beef meat colour preference among participants

- *Fat preference*

The participants were asked to rate their fat preference[4] of the meat they buy (see Figure 7). More than half (54.7%) of the participants gave a medium (3/5) rating for their fat preference. It seems that the participants are more likely to prefer less fat on their meat; rating it 1 and 2 out of 5, rather than 4 or 5 out of 5. Red meat retailers should thus aim for the supply of medium fat meat and if that is not possible, lower fat meats should be aimed for while preventing the presentation of very fatty meats.

[4] How the classification system works with regard to fat was explained to participants if they did not know.

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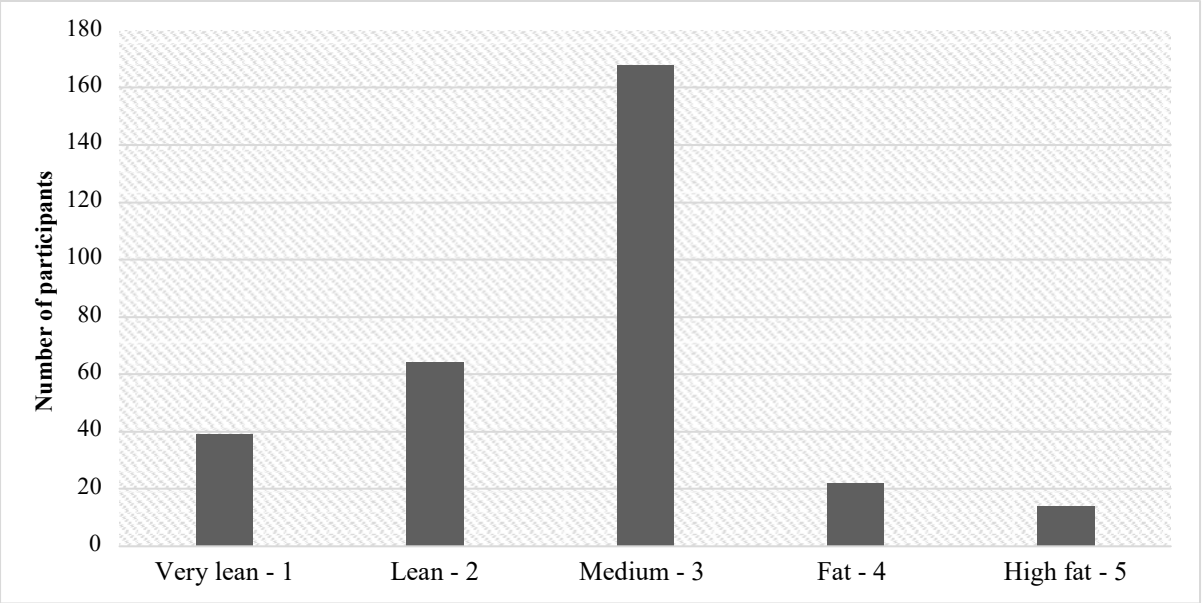

Figure 7: Preferred amount of fat on meat

- *Importance of packaged meat aspects*

Aspects of packaged meat when buying red meat were scored by the participants. These aspects relate to the physical appearance of the packaged product. The results are shown in Figure 8. The participants used the following scale: 1 = not important to 5 = very important. The aspects that received the highest average scores from all the participants were the colour of the meat (4.5) and the neatness of the cut (4.5). The bone-to-meat ratio and amount of fat on the meat proved to be less important, with both receiving an average score of 4.1. The amount of visible fat on the meat (3.9) and blood in the packaging (3.8) proved to be less important than the aforementioned aspects. The classification of the meat received the lowest average score, namely 3.6.

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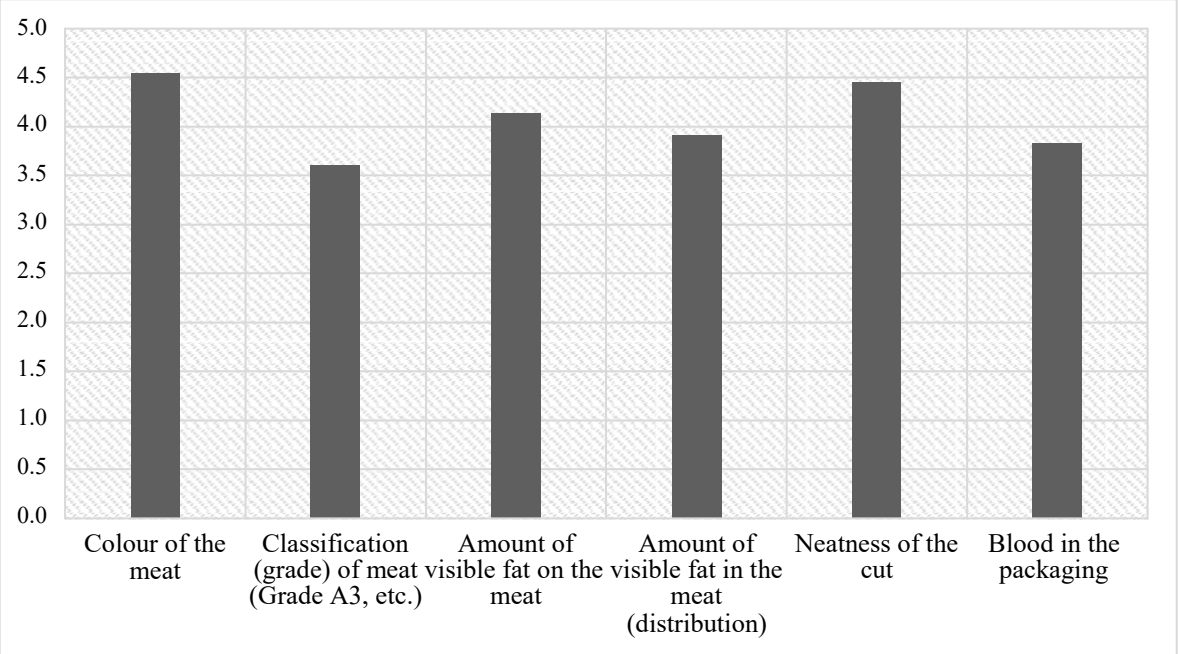

Figure 8: Importance of aspects when buying red meat

- *Packaging preferences*

The packaging of red meat was scored by the participants according to the following five-point Likert scale: 1 = dislike a lot, 2 = dislike, 3 = neutral preference, 4 = like, and 5 = preferred choice. The results are shown in Figure 9. The highest preference was shown for vacuum-packed meat (3.4) that is not placed on a polystyrene plate. Meat placed on a polystyrene plate and then vacuum-packed scored the second highest preference score (3.3) and meat placed on a polystyrene plate and then wrapped in cling film scored the third highest score (3.2). Meat placed in plastic containers on the shelf scored lower (2.8) than the aforementioned, yet still higher than meat placed only in a plastic bag (1.7) and meat placed in a box before being wrapped in plastic (1.1). The majority of the participants who prefer red meat being placed in a plastic bag were from the lower-income groups and felt that this was the best packaging for freshly cut red meat. The results suggest that red meat retailers should place their red meat products in a vacuumed-packed only format to meet the preferred requirements of the general red meat consumer base in the Mangaung metropolitan.

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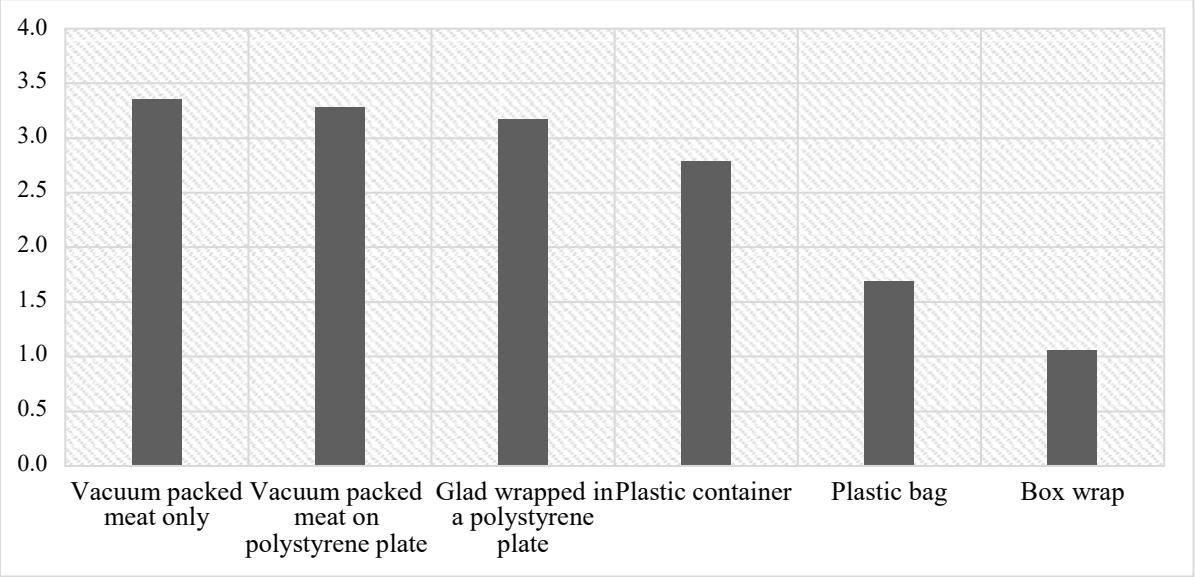

Figure 9: Participants' preference in terms of packaging red meat

Conclusion and Recommendations

From the results of this study some important findings have been identified and red meat retailers in the Mangaung metropolitan area are encouraged to make use of them. The frequency at which different red meat retailers are visited suggests that supermarkets should prepack smaller quantities of red meat for their consumers who visit them more often while butcheries who are consumers' preferred destination for red meat purchases should attempt to capture the largest value from consumers on their fewer visits. This could be done by offering a monthly value pack or month-end specials to consumers ensuring that you supply them with a month's worth of red meat product in a single sale.

The important quality indicating labels that were identified suggest that retailers should attempt to supply their markets with South African produced red meat. It also seems that it will be beneficial to retailers if they are able to provide a quality guarantee of the red meat that they sell.

Consumers indicated the importance towards the colour of the red meat they purchase by scoring the colour as the most important aspect of packaged meat aspects. When considering the bright red colour preference of consumers it can be suggested that red meat retailers should place emphasis on the colour of the meat on their shelves and should attempt to provide their consumers with bright red meat. Retailers should also pay attention to the neatness of the cuts of meat that they place on their shelves as suggested

by the rating give to the physical characteristics. Lastly it can be recommended that retailers package their meat in a vacuumed-packed meat only format.

References

Battaglia, M. 2011. Convenience sampling In: P. Lavrakas (Ed.). *Encyclopedia of Survey Research Methods*. Thousand Oaks, USA: Sage Publications. pp. 149-150.

Bureau for Food and Agricultural Policy (BFAP). 2016. *Baseline Agricultural Outlook 2016-2025*. Pretoria, South Africa: BFAP.

Bureau for Food and Agricultural Policy (BFAP). 2014. *Baseline Agricultural Outlook 2014-2023*. Pretoria, South Africa: BFAP.

Department of Agriculture Forestry and Fisheries. (DAFF). 2017. *Abstract of Agricultural Statistics 2017*. Pretoria, South Africa: DAFF.

Department of Agriculture, Forestry and Fisheries (DAFF). 2016. *Abstract of Agricultural Statistics, 2016*. Pretoria, South Africa: DAFF.

Font I Furnols, M. & Guerrero, L. 2014. Consumer preference, behaviour and perception about meat and meat products: An overview. *Meat Science* 98(2014) 361-371.

Issanchou, S. 1996. Consumer expectations and perceptions of meat and meat product quality. *Meat Science* 43(S1): S5-Sl9.

New Nutrition Business. 2017. *Key Trends in Food, Nutrition and Health 2017 and How They Can Work for You*. Available from: http://www.fdin.org.uk/wp-content/uploads/2017/02/Allen-Bruce.pdf (Accessed on 16 December 2017).

Statistics South Africa (Stats SA). 2011. *Census 2011: Population Dynamics in South Africa*. Report No. 03-01-67. Pretoria, South Africa: Stats SA.

Statistics South Africa (Stats SA). 2012. *Income and Expenditure of Households (IES): 2010/2011*. Statistical release P0100. Pretoria, South Africa: Stats SA.

Statistics South Africa (Stats SA). 2018. *Five Facts about the Retail Industry*. Pretoria, South Africa: Stats SA.