



Catch

your consumers' attention

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The foundation of research is no new concept, however, advancements in technology have made a wider range of studies possible (Smith & Albaum, 2012). One such technology is eye-tracking. Eye-tracking can be used to quantify an observer's overt visual attention and can be used to evaluate and compare visual search patterns of individuals in a variety of situations (Tonkin, *et al.*, 2011). As the saying goes, if you want to know what people pay attention to, follow their eyes. Traditional research has mostly made use of self-reporting techniques such as questionnaires. These techniques rely on consumers' ability to remember what they looked at but also gives them the opportunity think about what they should say and therefore incorrect results may be obtained. By making use of eye-tracking devices participants are not given the opportunity to say what they look at, or should look at, they just show you what they actually look at and the device captures the data. The device makes use of infrared LED light that is reflected of the cornea of the eye and can then be used to determine the location of a participant's attestation on the tested image.

Our Consumers

South Africans are known for their love of meat, which includes red meat. Statistics show a per capita consumption in the order of 17.42kg and 3.2kg for beef and mutton/lamb meat respectively (DAFF, 2019). In recent years the power has shifted from the hands of producers to the hands of consumers in the beef value chain. Along with this change in power, consumers' demands and needs have also changed (Labuschagne *et al.*, 2011). A study by the Department of Agricultural Economics, UFS, used eye-tracking to investigate red meat consumers' preferences. Some of the results are presented in this article.

The study area

The data for this study was collected from 350 participants in the Mangaung Metropolitan Municipality. The majority of the people in the municipal area reside in Bloemfontein, Botshabelo, and Thaba Nchu. During the field survey, nine different locations were visited for data collection; these locations are spread out across the metropolitan to ensure that the data that was collected is representative of the population.

Red meat aspects

To test consumers' preferences and attention levels towards red meat products, different packets of red meat were made-up and photographed after which it was shown to consumers on the eye-tracking devices during the test. Aspects that were tested in the study include: meat aspects (colour of the meat, fat on the meat, marbling), meat packaging and price label information (packaging, classification, price per kg, price per pack, weight of the pack and freshness indicators) and quality indicating labelling (nutritional information, brand of meat, breed of animal, after-slaughter practices, traceability measures and production practices).

Once consumers completed the eye-tracking test they were also asked to complete a post-test questionnaire. The questionnaire contained questions regarding participants' meat purchases, cut preferences, the aspects which they regard as important when selecting their pack of meat etc. This would allow the comparison of what consumers say they pay attention to when selecting their red meat products to what they actually pay attention to when the packs of meat are shown to them.

Results obtained from the eye-tracker consist of heat maps, gaze plots and metrics of eye fixation and visit data. Heat maps indicate which areas of the image enjoyed attention from participants for longer periods of time. Darker or redder areas captured consumers' attention for a longer period. Gaze plots show the sequence in which consumers paid attention to the different aspects on the tested image. The metrics contain information regarding the percentage of consumers paying attention to the individual aspects tested, the total duration of the fixations on each aspect, the time to first fixation on the aspect and the number of fixations before fixating on an individual aspect. In the study, the gaze plots that contained the information of all the participants, on one image, were difficult to analyse and it was decided to rather make use of the metrics data and heat maps.

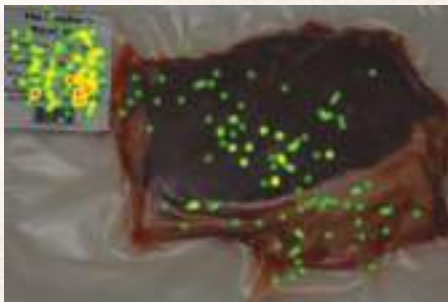


Image 3: Heatmap for beef steak with price label

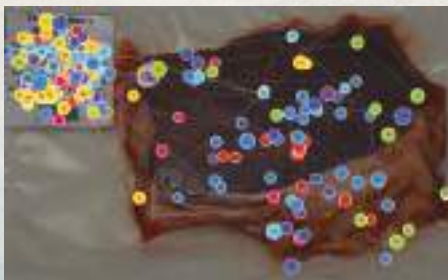


Image 4: Gaze plot for beef steak with price label

Consumer behaviour

Data from the participants showed that the average monthly budget for meat per household is R 927. Of this amount, R 379 is spent on beef products and R 314 is spent on mutton/lamb products. Consumption patterns of consumers indicated that 22% of consumers eat red meat once a day and another 22% of the consumers indicated that they eat red meat 4 times or less per month. Buying red meat directly from butcheries was the preferred choice from 66% of consumers followed by 28% who preferred supermarkets. Supermarkets were, however, visited more times per month on average (2.6) than butcheries (2.2). This suggests that consumers visit butcheries less often but buy larger quantities of meat per visit while supermarkets are visited more frequently, maybe for general grocery shopping, but consumers buy smaller amounts of meat per supermarket purchase. Furthermore, the majority of the consumers indicated that they prefer to buy bright (cherry) red beef and mutton products which has a medium amount of fat on them. A rating scale 1 to 5 was used where consumers had to rate aspect from not important (1) to very important (5). These ratings were analysed and compared to eye-track results for the aspects that enjoyed attention from the consumers.

Results

In terms of the price label information, consumers rated the price per kg higher than the price per pack followed by the weight of the pack, classification and freshness indicators. Eye-tracking results showed a slightly different rank where price per pack enjoyed the highest level of attention for consumers followed by weight of the pack, classification of the meat,

price per pack and freshness indicators. The two sets of data for these tested aspects indicate that consumers might indicate that price per kg is the most important aspect shown on the price label, however, they actually pay more attention to the price of the pack with price per kg being second to last place in terms of eye-tracking data. Freshness indicators were ranked the least important in both the questionnaire and eye-tracking data. Here it should be mentioned that the images used for these analyses all contained meat that was bright red. In images where paler and darker cuts of meat were shown to participants they tended to fixate less on the paler meat while the price label information of the paler meat received much higher level of attention from consumers. It seems that consumers in these cases will make use of the freshness indicators to determine why the meat appears paler and then make their purchase decision based on that.

One of the types of quality indicator labelling that was tested included breed certification labelling. With regard to the Angus beef labelling that was tested, 51% of the consumers paid attention to the label for roughly 0.81 seconds during the eye-tracking test. Men were more likely (56%) to fixate their attention on the labelling than women (49%). Just more than 9% of the consumers were able to recall that they saw the Angus beef label during the test. Amongst all the consumers, 11% indicated that they prefer to buy beef from a certain breed of cattle. However, the breeds of cattle that is preferred was diverse in nature amongst participants. On images where beef brands were shown to the consumers, it led to less attention being paid to the name of the butchery. This could indicate

that consumers know what to expect from the brand of beef shown and are less concerned with the butchery selling the brand. Men were more likely to pay attention to the brands of beef and higher educated consumers were more likely to fixate their attention on beef brands less familiar in the area.

Besides breed, production practice labelling was tested and the results for grass-fed beef (see Image 1) are presented first. Of the labelling aspects, the “Grass fed” label was most likely to be focused on first by consumers and the most frequently, causing the longest average total fixation duration of 0.9427 seconds. It is interesting to note that the percentage of participants fixating on the “Grass fed” label and percentage fixating on the price of the pack are the same at 44%. One reason could be that consumers are interested in this form of production practice labelling but are expecting a higher price due to the “Grass fed” guarantee. Higher-educated participants proved to have a higher tendency to fixate on the “Grass fed” label. Younger participants showed a higher fixation percentage with slightly more women fixated their attention on the label than men. Middle-income participants showed the highest fixation percentage (50%), followed by high-income participants (47%) and low-income participants (39%).

The eye-tracking results where “No antibiotics” labelling was tested (Image 2), suggest that this label was able to attract the attention of 44% of the participants, while the price of the pack and weight of the pack were able to attract the attention of 36% and 34% of the participants respectively. This label attracted more attention than other quality indicators such as “Free range” (41%), “Top quality guaranteed” (43%), and “Aged” beef (40%). The labels also measured a relatively long average total fixation duration (1.1142 seconds) compared to the other production practice labels. This indicates that consumers are interested in red meat that is free of antibiotics. Higher-educated participants showed higher fixation percentages to the label, with participants with a tertiary education showing a 48% fixation percentage. Regarding age, 52% of the participants in the 18 to 30 age group fixated on the label, with all the other age groups showing a declining trend when moving from young to older age groups. Just over half of the female participants (51%) fixated on the label compared to 40% of the men. A different trend was noticed in the income groups; an increase in fixation percentage was noticed as the income group increased, with the high-income group showing a 50% fixation percentage on the “No antibiotics” label.

Food for thought

The study identified certain differences between what consumers say they pay attention to when purchasing red meat and what consumers actually pay attention to. In the study, different aspects such as the breed certification and production practices labelling was investigated and also proved to be important for some of the tested red meat consumers. It should be worthwhile for producers to also conduct a willingness-to-pay assessment on the identified aspects before pursuing the marketing of these types of products. This will allow producers to determine whether they will be able to earn a premium on such a product and if it will make it worth their while to pursue such a product.

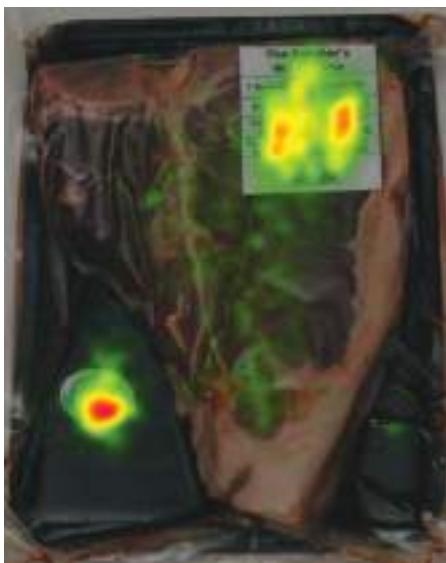


Image 1: Heatmap beef steak with a “Grass fed” label

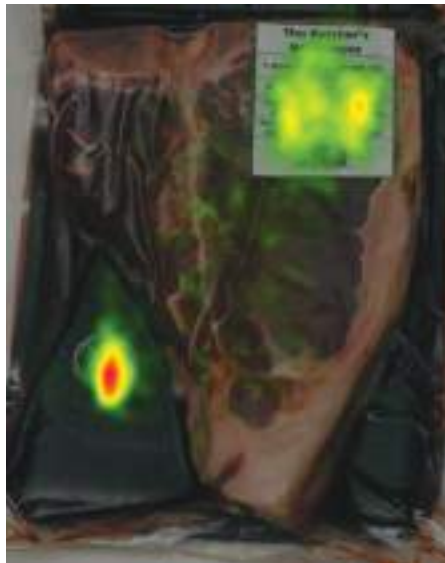


Image 2: Heatmap beef steak with a “No antibiotics” label

