

Article

Consumers' Social Representations of Meat Safety in Two Selected Restaurants of Raymond Mhlaba Municipality in the Eastern Cape, South Africa

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Abstract: This study was conducted at two different restaurants of Raymond Mhlaba Municipality (Alice), Eastern Cape, South Africa, to determine consumers' social representations of meat safety. A total number of 251 people were interviewed in focus group discussions, each comprising 4–6 interviewees were conducted. Each focus group consisted of university students and staff, and members of rural communities surrounding the town of Alice. A semi-structured questionnaire comprising both closed-ended and open-ended questions was used to collect data. Consumers were concerned about the hygiene at the place of purchase and the freshness of meat. Moreover, they revealed that they were always worried about the risk of food-borne diseases. Although food-borne diseases were not cited as a significant problem, related ideas such as *“washing of hands before preparation of food to minimize food-borne diseases”* were important to consumers. Consumers indicated that meat safety at the abattoirs should be thoroughly managed given that *“hygiene during meat processing is important to prevent the occurrence of food-borne diseases”*. Consumers in both retail outlets have shown to have a limited understanding of meat safety. Thus, consumers' social representations, perceptions, and knowledge are complex and dynamic with respect to meat safety.

Keywords: consumers' knowledge; food-borne diseases; meat supply chain; microbial contamination

1. Introduction

Social representations (SRs) refer to information arranged in a systematic way with different consumer attitudes, opinions, and beliefs about a given product [1]. In urbanized societies, socio-cultural and integration procedures constitutes SRs. People's backgrounds and authenticity influence SRs [2]. Social representations can be substituted or integrated into an individual's behavior, awareness, and social critical thinking. Currently, consumers face challenges with respect to how to judge risks regarding meat safety. Their insights on meat safety are based on the trust placed in the meat supply chain, which does not persist over time [3]. All these issues are crucial and must receive attention when formulating regulations and programs concerning meat safety.

Debates on regulations and implementing strategies that reassure consumers about meat safety have persisted for many years [4–6]. At the same time, increased awareness of the threat of *Salmonella* and *Escherichia coli* has decreased consumers' self-confidence in the quality and safety of their meat [7]. Thus, effective safety management systems remain a major concern for meat producers, processors, and consumers [8]. Verbeke et al. [9] conducted a study that revealed that consumers were expecting all types of foods including meat to be intrinsically safe. This observation explained why consumers never intentionally purchased or consumed unsafe food. This surely explains why the authors of [10]

argue that consumers' knowledge of meat safety is insufficient and should be addressed. Incidences involving microbiological contamination have been triggered, and sustained efforts have been made to create awareness of meat-safety-related risks [11]. Microbial, especially bacterial contamination results in food-borne diseases linked to consumers' health risks namely diarrhea, vomiting, and fever [6,12]. Food-borne diseases negate human health and wellbeing, as well as productivity [13,14]. Regardless of the high incidences of food-borne illnesses in both developed and underdeveloped countries, there is still inadequate information required to amount effective interventions that addresses the problem. Therefore, it is not surprising that an awareness of bacteria that cause food-related illnesses in these areas remains low [10,15].

Research conducted to date on meat safety risks has predominantly been biased towards quantifiable aspects such as consumer's perspective scales or psychological tests involving normal or large samples of individuals [16,17]. Qualitative techniques have been used to ascertain consumers' ideas, knowledge, beliefs, values, feelings, and preferences behind their behavior and their social group's symbolic construction of meanings [18–22]. Yet the use of qualitative methods simplifies focus groups' perspectives mainly by offering flexibility and innovation when applied [23]. Qualitative methods allow consumers to freely express their perceptions. In the current study, consumers' social representations and knowledge of meat safety in South Africa are explored. The objective was to compare consumers' social representations with respect to meat safety in two food settings.

2. Materials and Methods

2.1. Study Site and Population

The study was conducted at the University of Fort Hare Staff Centre and Champs restaurant in Alice of the Eastern Cape Province, South Africa. Alice is a small town with a population comprising various ethnic groups, nationalities, cultures, and religions. It is found in the Raymond Mhlaba local municipality of Amatole District. The Staff Centre is regarded as a top class outlet (C₁) and Champs Restaurant as a middle class outlet (C₂). The former is a restaurant that is larger and has better equipment. Most university staff and students purchase food here during lunch time. It serves ready-to-eat breakfast and lunch, costing R18.00 and R30.00 (USD = ZAR 12.95), respectively. At the Staff Centre, a wide range of meats, such as pork, beef, mutton, fish, and chicken, are served. Most consumers residing in Alice purchase their meat at Champs restaurant. Chicken and chips are served starting at Combo 2 (two pieces of chicken with chips) at a price of R33.00. Combo 6 is the largest sold there.

2.2. Data Collection and Participants

Permission to interview staff, students, and consumers from rural communities was obtained from the University of Fort Hare Research Ethics Committee of the University of Fort Hare (UFH/UREC, MUC211SDAS01). A pre-testing survey was carried out prior to commencement of data collection. Postgraduate students who usually operate from the Animal Science Laboratory at the University of Fort Hare (UFH) participated in the pre-test. It was necessary to conduct the pre-test because it helped determine whether the questionnaire earmarked for use in data collection was effective and valid. The results of the pre-test were used to refine the questionnaire. Thereafter, 251 consumers from the Staff Centre (C₁) and Champs (C₂) restaurants were selected. In addition to this consideration, gender and ethnic groups were used as sub-clusters when sampling respondents. This made it possible to reduce potential bias during sampling. A semi-structured questionnaire comprising both closed-ended and open-ended questions was used to collect data during lunch times. Demographic data (Table 1) were collected in order to differentiate the focus groups. Focus group discussions were conducted and audio-taped. Prior to data collection, the participants were briefly informed about the purpose of the study. Consumers were afforded an opportunity to ask questions on issues that they did not

understand well. Each sampled respondent who freely volunteered to participate in the study was requested to sign a written consent letter.

Table 1. Demographic information of consumers who participated in focus group discussion.

Variable	Staff Centre	Champs
Gender		
Female	110 (58.51%)	39 (64.90%)
Male	78 (41.49%)	24 (38.10%)
Race		
Black	172 (91.49%)	56 (88.89%)
White	7 (3.72%)	3 (4.76%)
Coloured	9 (4.79%)	4 (6.35%)
Age, years		
<20	31 (16.49%)	2 (3.17%)
21–30	102 (56.26%)	20 (31.75%)
31–40	38 (20.21%)	19 (46.03%)
41–50	14 (7.45%)	12 (19.05%)
>50	3 (1.60)	0
Employment		
Employed	55 (29.26%)	42 (66.67%)
Unemployed	133 (70.74%)	21 (33.33%)
Educational status		
No. formal education	0	1 (1.59%)
Grade 1–7	0	0
Grade 8–12	0	2 (3.17%)
Tertiary	100 (100%)	97 (95.24%)
Marital status		
Single	149 (76.26%)	38 (60.32%)
Married	37 (19.68%)	24 (38.10%)
Widowed	1 (0.53%)	1 (1.59%)
Divorced	1 (0.53%)	0

Each focus group was comprised of 4–6 participants, consisting of university students and staff, and residents of rural communities surrounding Alice. A total number of 88 staff members and 75 students were sampled at the Staff Centre and interviewed in 11 and 15 focus groups, respectively. At the Champs restaurant, 20 staff members or employed consumers were interviewed in 17 focus groups. Focus groups were constituted by selecting tables with 4–6 consumers in each restaurant. In-depth focus group discussions were carried out to obtain consumer understanding or opinion on the questions contained in the questionnaire. The questions that the focus groups deliberated on were as follows: (1) What do consumers regard as the meaning of meat safety? (2) What are food-borne diseases? Apart from this, the interviews focused on knowledge regarding primary meat production, processing, transportation, storage, distribution, preparation for consumption and extent of consumer involvement in the meat supply chain. For each question, probing to gain deeper insights entailed use of “tell me more about that” and “what else do you think about food safety?” Each focus group was given an opportunity to express its views freely. As the members narrated their views, a tape recorder was used to complement note taking.

2.3. Statistical Analysis

All the focus groups’ responses were transcribed and rearranged per interview question. Their responses were recorded verbatim and grouped accordingly. Consumers’ responses were sorted and placed per theme, linked to retail outlet, namely C₁ and C₂. The data were then coded and stored in MS Excel. The frequencies for consumers’ profiles, knowledge, and perceptions were determined using

the PROC FREQ procedure of the Statistical Analysis Systems (SAS, 2009). Mean perceived importance scores were also determined using the PROC MEAN procedure of SAS (2009). Statistical significance of responses was tested at the 95% confidence interval, with ($p < 0.05$) being regarded as significant.

3. Results and Discussion

Consumers' knowledge and ideas regarding meat safety are shown in Table 2. Hygiene and freshness of the meat were most important to consumers in both retail outlets C₁ (31.91%) and C₂ (41.27%). It was revealed that consumers preferred to purchase meat from the higher class retail outlet, C₁ (19.68%) and believed that the meat sold at their outlet was safer compared to C₂ (26.98%). The fact that consumers think carefully about hygiene and safety prior to purchasing meat might explain this observation. Jabbar [24] reported similar results, stating that hygiene and freshness were the most considered factors that provided an indication of safety of meat at a purchase point. Moreover, Behrens et al. [25] and Vedovato et al. [26] compared two different food settings and observed that R1 was preferred as opposed to R2, mainly because the former was more hygienic. However, there is evidence [27–30] that suggests that consumers depend on only detectable cues associated with food hygiene when they evaluate meat safety. Thus, consumers' quality and safety assessments are essential for the production of high-quality, safe meat [31]. Therefore, these results show the basic perceptions and necessities of personal hygiene at a place of purchase, which plays a vital role in ensuring that products are safe for the consumer.

Table 2. Consumers' social representation regarding knowledge of the meaning of meat safety.

Perception?	C ₁ (%)	C ₂ (%)	C ₁	C ₂
"Meat safety involves hygiene and ensuring that the meat is fresh until it reaches the retail outlet/place of purchase"	31.91	41.27	Place of purchase, health, freshness	Hygiene and freshness
"Meat safety means that we have to check the information of the expiry date on a specific cue/package"	12.77	15.87	Sell by date, best before, consuming fresh meat	Expiry date, sell by date
"Meat safety means that the meat is safe for consumption"	19.68	19.05	Non-hazardous meat	Safety
"Meat safety means that the meat is safe and disease free"	13.83	6.35	Sickness, food-borne diseases	Healthiness
"It means that the quality of meat is acceptable to consumers"	5.85	6.35	Colour, texture	Sensory evaluation (Quality)
"The meat must be of good quality and should contain nutrients that are needed. It should also be free from diseases"	10.11	11.11	Disease free	Quality and non-disease
"I do not understand what meat safety is all about. I just consume meat".	5.85	3.17	No clue	I do not know

C₁—Staff Centre; C₂—Champs Restaurant.

In Table 2, the various ways in which consumers perceived the meaning of meat safety are shown. There was no clear pattern regarding how consumers at the two retail outlets regarded meat safety. However, most consumers who purchased meat at C₁ were students believed to be more educated and have more general knowledge regarding meat safety. Liana et al. [32] reported that well-educated consumers were often more up to date with issues concerning meat safety. Expiry dates shown on meat packages were more important measures of meat spoilage than visual appearance (meat colour). Educated consumers considered this, healthiness, and other variables during or after consumption [33]. Only a minority of consumers in both retail outlets did not understand the meaning of meat safety—"I do not understand what meat safety is all about, I just consume meat".

As indicated in Table 3, most consumers in both retail outlets ($C_1 = 40.43\%$; $C_2 = 50.79\%$) were of the view, and concerned, that microbial contamination contracted through food consumption caused diseases. Behrens et al. [34] and Behrens et al. [25] reported that food-borne diseases resulted from microbial contamination, which was a threat to their health and well-being. Some consumers indicated that they had limited control over their own exposure to microbial contaminants. Yet, microbial contaminants can cause food-borne illnesses with variable impacts on overall health and well-being [35]. Consumers' alertness showed that they understood the consequences of food-borne diseases, which supports Unusan's findings [36]. Although the proportions of consumers both C_1 (10.64%) and C_2 (4.76%) were ignorant of food-borne diseases were, this should be regarded as a worrying situation that needs urgent attention.

Table 3. Perceived meaning of food-borne diseases.

What Are Food-Borne Diseases?	C_1 (%)	C_2 (%)	C_1	C_2
"Are diseases that are contracted through food consumption"	40.43	50.79	Meat contamination	Microbial contamination
"Are diseases that are occurring when someone does not wash his/ her hands during the preparation of meal"	20.74	19.05	Food preparation, proper hygiene	Lack of personal experience
"Are diseases that are causing us stomachache, vomiting, nausea"	13.30	17.46	Sickness	Health purposes
Are disease like <i>Salmonella</i> , <i>Escherichia coli</i> , <i>Campylobacter</i> and other bacteria's"	11.17	7.94	Food-borne diseases	Diseases
"Food-borne disease can be controlled starting from the abattoir to the retail outlet. At our homes we should be able to prepare our meals in a hygienic place"	3.72	7.94	Washing of hands	Control
"I do not know what are the food-borne disease"	10.64	4.76	Lack of understanding	I do not know

C_1 —Staff Centre; C_2 —Champs Restaurant.

Even though consumers in C_1 were perceived as educated, their understanding of food-borne was not superior to those interviewed at C_2 . Tokuc et al. [37] also found that consumers had poor knowledge of food-borne diseases. Interviewees were aware that the diseases could be minimized if they wash their hands when preparing food. There were consumers in both retail outlets who had basic knowledge on microbial contaminants such as *Salmonella*, *Escherichia coli*, and *Campylobacter*. Kher et al. [38] made similar observations, especially with respect to *Salmonella* and *Escherichia coli*. Although the respondents had a basic understanding of food-borne illnesses, they did not perceive food-borne diseases as a significant challenge. This perception might make consumers take meat safety issues for granted.

Consumers' responses with respect to the importance of knowledge about food-borne diseases are shown in Table 4. Slightly more than a third (33.51%) of consumers at C_1 and (44.44%) C_2 had positive attitudes towards the need for introducing preventative measures for food-borne diseases from retail outlets. Zain and Naing [39] revealed that consumers understood that food-borne diseases could be prevented through better awareness and improved personal hygiene. Apart from prevention, hygiene, safety, and awareness were among the consumers' concerns. Hygiene and safety are broad issues that are significant in ensuring human health and safety [40]. The Codex Alimentarius Commission [41] of Rome reported that improper food handling was assumed to be a major cause of food-borne diseases, mainly resulting from poor hygiene practice. It is worth pointing out that having deep knowledge does not necessarily lead to changes in food handling behavior [42]. This implies that individuals play critical roles in eliminating the threat of food-borne diseases.

Consumers' basic knowledge on the meat supply chain is indicated in Table 5. In both retail outlets (C_1 50.53% and C_2 55.56%), the most dominant view was that *"safety from abattoir to retail outlet"*. The term *"meat safety"* should be viewed from a supply chain perspective that begins with production on the farm, slaughtering of the animal, primary production, and manufacturing and ends with storage and distribution, which includes retail [43]. It is crucial to manage the primary production chain up to the plate of a consumer in a manner that ensures food safety [44]. Consumers were not specific about their knowledge of the meat supply chain in the two retail outlets C_1 (23.40%) and C_2 (20.63%). However, some in C_1 (24.47%) and C_2 (17.46%) indicated that they were purchasing meat whose origin they did not know. This was a worrying observation because it reflected consumers' disinterest in making retailers uphold high-quality standards expected in such business enterprises. There were consumers in both retail outlets who indicated that stress could affect meat quality, suggesting that they did not have a clear understanding of the meaning of safety. In one study [45], consumers' knowledge of the supply chain as well as their concerns and acceptance of measures of meat safety were found to be different. Labuschagne et al. [46] revealed that the South African consumer market was diverse, comprising various cultures, races, preferences and market segments. The different behaviors and attitudes identified in the current study seemed to be a consequence of a perceptive conflict and a lack of understanding of the meat supply and production chains.

Table 4. Consumers' responses on the importance of knowing food-borne diseases.

Why Is It Important to Know About Food-Borne Diseases?	C_1 (%)	C_2 (%)	Consumer Ideas
"Be on the lookout of food-borne diseases so that we can be safe"	33.51	44.44	Prevent
"Hygiene is very important to reduce food-borne diseases"	28.72	25.40	Hygiene
"Safety measures are to be taken more especially to retail outlets and our homes"	15.96	19.05	Safety
"We should be aware the dangers that they cause in our lives"	4.79	3.17	Awareness
"I do not know"	17.02	7.94	I don't know

C_1 —Staff Centre; C_2 —Champs Restaurant.

Table 5. Consumers' knowledge on the meat supply chain.

Perception	C_1 (%)	C_2 (%)	Consumer Ideas
"This involves from farm to fork safety"	50.53	55.56	Safety from abattoir to retail outlet
"I am just purchasing meat without even knowing where it is from"	24.47	17.46	Just purchasing
"Stressing of animals from the abattoir can affect meat quality"	1.60	6.35	Meat quality
"I do not know"	23.40	20.63	No clue

C_1 —Staff Centre; C_2 —Champs Restaurant.

Consumers' responses to other information importance regarding meat safety is presented in Table 6. Consumers in C_1 (21.81%) and C_2 (28.57%) indicated that *"hygiene during meat processing"* helped prevent incidences of food-borne diseases. Some consumers indicated that knowing the *"origin and details of processing"* (C_1 = 19.86%; C_2 = 26.98%) was crucial. Smaller proportions of the consumers (C_1 = 10.36%; 11.11%) were of the view that, *"If the government can assist with education training to consumers,"* then meat safety would be enhanced. It is known that levels of hygiene in meat retail outlets differ due to transportation, handling, and processing and that microbial contamination levels are unlikely to be the same as well. Microbial contamination mostly occurs during the slaughter, processing, storage, and distribution at slaughterhouses and retail outlets [47]. This occurs because of the unhygienic handling of meat from slaughterhouses, butchering equipment, handling, transportation, and processing [48]. The results of the current study concur with the findings of [49], which highlighted that hygiene was important in food sector services. A study by Ruban and Fairuze [50] revealed that there were higher bacterial concentrations in meat as a result of how the latter was processed. Consumers solely rely on meat sectors and the preparation of food at a restaurant. This was aptly summed by one interviewee who said, *"Finding yourself eating at a restaurant like Champs always gives you hope that the meat is hygienically free from contamination"*. The results of this study have

indicated why high levels of hygiene should be attained. In addition, further research that assesses the general knowledge of workers and hygiene from abattoirs, retail outlets up to the plate of a consumer is required if high meat standards are to be achieved.

Table 6. Respondents' ideas on what else is important to share about meat safety.

What Else Is Important to Share about Meat Safety?	C ₁ (%)	C ₂ (%)	Consumer Ideas
"Washing of hands before eating/ preparation of meat"	11.70	14.29	Sanitation
"Meat must be properly cooked at all times"	7.98	4.76	Meat preparation
"Meat colour should not change"	14.36	7.94	Meat colour
"Hygiene at the meat processing"	21.81	28.57	Hygiene
"Origin and details of processing"	19.68	26.98	Processing
"Food-borne illnesses"	7.98	6.35	Food-borne disease
"If the government can assist with education training to consumers"	10.36	11.11	Educational lessons
"I don't have anything to add"	4.78	0	I don't know

C₁—Staff Centre; C₂—Champs Restaurant.

4. Conclusions

It was revealed in this study that consumers relied on their visual assessment rather than their deep insights when they evaluated meat quality. The fact that consumers regarded hygiene as important indicates that meat processors, distributors, and food preparation workers should never compromise on it if they are to attract consumers. Consumers interviewed at both C₁ and C₂ had basic knowledge of the pathogenic diseases that causes meat to be unsafe for consumption, even though there were misconceptions, which could be addressed with awareness campaigns and the implementation of meat safety regulations.

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