



Urban Consumers' Educative Value Attached on Quality and Safety of Milk from Different Media Channels in Nairobi Kenya

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Agricultural advisory services inform urban consumers about milk safety and quality information through diverse media channels. Communication about milk is vital in educating consumers to make informed, healthy food choices. However, knowledge gaps exist on whether the dominant message theme by media targets educating consumers. This study sought to fill these knowledge gap. Thematic content analysis of newspaper articles was used (n=215) and researcher-administered questionnaires (n=131) was used in Nairobi city. The respondents involved in the study were 131. The frequencies of text data were determined, and the dominant message themes were identified using Chi-square test statistics. The respondents rated media sources for educative

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value, on a Likert scale (1 to 5). Results revealed that the dominant print media message themes were innovations for enhancing good quality milk (36.7%), causes of poor-quality milk (43.7%), benefits of quality milk (10.7%), and risks of poor-quality milk (8.8%). The relative consumer trust for information disseminated by agricultural advisors through different media channels was in the order of television (20.2%), radio (19.5%), product advertisement (16.7%), social media (13.5%), newspapers (12.4%), public extension (7.5%), research by university (6.8%), and lastly extension magazines (3.4%). Consumers placed greater trust on messages disseminated through television, which in their perception was of greater educative value to them.

Keywords: Consumers' educative value; milk quality; milk safety; media channels; Nairobi Kenya.

1. INTRODUCTION

Print media plays a key role in communicating about quality, safety and benefits of milk to consumers. Degeling et al. [1] found that messages on quality of milk transmitted through print media educates the public on scientific information. Urban consumers demand for quality and safe milk is high in Kenya. In urban settings, milk consumers access milk risk information from different media sources. Delivering high-quality and safe milk should be a distinct selling point of processed milk. However, noncompliance with the quality standards is persistently prevalent in the market dominated by sale of raw un-chilled milk [2]. Published scientific information has continuously warned of public health risks and associated economic losses regarding the quality and safety of milk traded in the domestic market. However, very few people access and read this scientific information since it is contained in journals, technical reports, and other scholarly literature.

Effective communication with consumers about the risks and hazards linked to consuming poor quality and unsafe milk is necessary. Access to this information would educate consumers to make informed decisions and healthy choices on whether to consume or avoid unsafe milk of poor quality. Furthermore, the dairy value chain entrepreneurs would be aided in making informed investment decisions. Educative and readily accessible communication on risks and benefits of milk can enhance consumer protection, confidence, and trust in milk safety and governance systems [3]. FAO/WHO (2016) clarifies that effective food safety communication involves the exchange of information, perceptions and opinions on risks and benefits associated with milk and milk products. This is relevant to Kenya today because some of the milk sold perpetually raises public health concern, creates a barrier to various business or trade opportunities, and reduces the competitive

nature of the dairy milk industry [4]. Effective risk-benefit communication would benefit Kenya's fast-growing milk industry by safeguarding public health, grabbing trade opportunities, and enhancing the industry's competitiveness.

Kenya's print media channels present articles on various topics on Agriculture from time to time. Some of the articles have educative value for consumers about the quality and safety of milk sold in Kenya. The major national newspapers contain weekly magazines that disseminate diverse agricultural subjects such as milk quality and safety. These include the Seeds of Gold in the Nation newspaper every Saturday, Smart Harvest from the Standard newspaper on Saturdays, Business Daily on Thursdays, and East African newspapers on monthly editions (Ngimwa, Ocholla & Ojiambo, 2013). Messages in print media articles quickly reach a more significant segment of the players in the dairy value chain than the information communicated through scientific publications. However, the educative value of content to the readers and milk consumers is not known. Furthermore, the print media articles and information disseminated by other media channels on the safety and quality of milk sold in Kenya is yet to be analyzed.

1.1 Statement of the Problem

Effective milk communication should educate consumers to be more knowledgeable about milk quality and safety issues. This is important in Kenya, where non-compliance with quality standards has persisted in traded milk. The agricultural advisory service providers help milk consumers access information on quality and safety of milk from diverse media channels, since media is a vital tool for reaching out to the masses. Milk consumers are important actors in the dairy milk value chain by sustaining the demand and growth of the dairy industry. However, knowledge gap exists on whether

agricultural extension information through various media channels reaches out to informs milk consumers on milk quality and safety issues since media is a powerful tool for agricultural extension. Therefore, there was a need for this assessment to be conducted.

2. MATERIALS AND METHODS

2.1 Data Sourcing

The data for this consumer survey study, was from a sample of 131 milk consumers who were randomly approached for interviews at different milk market outlets in Nairobi. Consent of the consumer was sort before engaging them in the interview. The researcher explained the objectives of the study, kind of information needed and made assurance of confidentiality for the information that they offered. A structured questionnaire with questions on educative value attached to communication on milk was administered to a consenting consumer respondent.

The consumer survey instrument was a researcher-administered questionnaire. It was used to collect both qualitative and quantitative data from milk consumers at different milk outlets in Nairobi. The instrument was designed to capture data on with educative value consumers attach to information on the quality and safety of milk by the use of a Likert scale. The Likert scale measured which information sources consumers; never found educative, rarely found educative, often considered educative, and frequently found to be educative. The data on this information was analyzed using mean comparisons computed as mean index scores of frequencies for all the responses

2.2 Data Analysis

To identify the educative value consumer attach to information disseminated by different media channels on quality and safety of traded milk in urban markets. The researcher used a questionnaire where the respondents rated media sources consumers; never found educative, rarely found educative, often considered educative, and frequently found to be educative. The data on this information was analyzed using mean comparisons computed as mean index scores of frequencies for all the responses.

3. RESULTS AND DISCUSSION

Milk of good quality has many benefits to young children and the adults especially relating to the individuals' good health and well-being. Table 1 above shows the educative value that consumers attach to information on benefits of good quality milk sourced from different media channels. The results in Table 1 show that the milk consumers consider information from the radio to be of very high educative value on communicating benefits of quality milk. This finding is similar to that of Giginyu, Jada and Mutah [5] which reported that radio is democratic in nature and is able to reach many people both educated and uneducated. Radios are also most preferred because they are portable and one can access them using their mobile phones. The findings of this study are similar to those of Lissitsa & Laor [6] which showed that currently radios are available in analog and digital forms, hence they are able to reach a wide range of consumers in different age cohorts. Consumers of most ages still listen to radios and the information obtained from the radios help consumers in decision making.

Table 1. Index scores showing level of educative value consumers attach to information on benefits of quality and safety of milk in the print media articles relative to other information sources

Media Source	Index scores showing level of educative value consumers attach to information on benefits of quality and safety of milk					
	Very high	High	Moderate	Low	Very Low	Index Scores
Radio	18	29	32	16	36	0.225
Newspapers	4	34	34	18	41	0.204
Televisions	14	30	20	17	50	0.203
Social media	11	23	21	23	53	0.188
Extension magazines	6	23	22	28	52	0.180

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

Table 2. Index scores showing level of educative value consumers attach to information on business opportunities relating to good quality milk and safety in the print media articles relative to other information sources

Media Source	Index score of educative value of the information on business opportunities					
	Very high	High	Moderate	Low	Very Low	Index Scores
Radio	6	34	31	31	29	0.224
Televisions	10	25	22	34	40	0.207
Newspapers	4	20	35	34	38	0.199
Extension magazines	4	17	28	37	45	0.186
Social media	10	15	20	32	54	0.184

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

The results in Table 2 indicate that information communicated by radio is most preferred by the milk consumers, compared to that communicated by agricultural extension magazines and other media channels. This finding differs with that reported by Sakya, Scoy, Garman, Miller, Snyder, Wasserman and Lennon [7], where half of the respondents' used television as an information source and 66% of the respondents use social media such as Facebook as sources of information. The findings of this study are similar to those of a study by Sama [8] where the researcher identified radio to be the best channel offering audio content suitable for businesses catering for the local market.

The results in Table 3 show that consumers attach very high educative value, to information on innovations to enhance high quality of milk, when the information is communicated by newspapers and radio. This study's findings are in line with the findings of Oto and Shimayohol [9]. The researchers in the study found out that 66.77% of the respondents involved in the study preferred radio as most educative channel of media because of its availability and accessibility to many respondents. The findings of this study

however differ with those of Oto and Shimayohol on newspaper. In this study newspapers are the most preferred in disseminating information on innovations due to high literacy levels among the urban consumers. This is contrary to the findings by Oto and Shimayohol where the study was conducted in the rural set up with low literacy level, hence in that study newspaper had the lowest preference.

The results in Table 4 show that the milk consumers consider information communicated by radio and television to be of high educative value on information related to incentives associated with high quality milk. This finding is similar to those of a study carried out by Rajya Lakshmi and Lakshmi [10] where radio and television were found to be very educative and informative to the respondents in the study. The radios are most preferred because they are portable and can be accessed through mobile phones. Radios are also informative to both the educated and those who are not educated since there exist vernacular stations. They are also most efficient in reaching out to many consumers.

Table 3. Index scores showing level of educative value consumers attach to information on innovations of the Kenya Dairy Board to ensure consumers access good quality milk, sourced from the print media articles relative to other information sources

Media source	Index score of educative value consumers attach to information on innovations					
	Very high	High	Moderate	Low	Very Low	Index Scores
Newspapers	6	21	33	35	36	0.206
Radio	4	25	33	31	38	0.206
Televisions	9	19	29	30	44	0.202
Social media	9	18	24	29	51	0.193
Extension magazines	5	17	31	35	43	0.193

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

Table 4. Index scores showing level of educative value consumers attach to information on incentives associated with quality and safety of milk in the print media articles relative to other information sources

Media Source	Index scores showing level of educative level consumers attach to information on incentives					Index Scores
	Very High	High	Moderate	Low	Very Low	
Radio	17	19	36	31	38	0.236
Televisions	15	14	30	27	45	0.205
Extension magazines	4	9	41	39	38	0.189
Social media	6	19	30	19	57	0.186
Newspapers	1	11	43	32	44	0.183

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

Table 5. Index scores showing level of educative value co articles relative to other information sources. Consumers attach to information on causes of poor-quality milk, sourced from the print media

Media Source	Index scores showing level of educative value consumers attach to information on causes of poor –quality milk					Index Scores
	Very High	High	Moderate	Low	Very Low	
Radio	7	43	33	14	34	0.222
Televisions	15	26	26	17	47	0.204
Social media	7	34	20	23	47	0.196
Newspapers	4	24	38	28	37	0.195
Extension magazines	2	25	26	38	40	0.183

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

Table 6. Index scores showing level of educative value consumers attach to information on risks of poor quality of milk sourced from the print media articles relative to other information sources

Media Source	Index scores showing the level of educative value consumers attach to information on risks of poor quality milk					Index Scores
	Very High	High	Moderate	Low	Very Low	
Radio	11	35	25	18	42	0.219
Televisions	11	24	24	27	45	0.203
Newspapers	4	25	37	23	42	0.201
Social media	14	19	24	22	52	0.198
Extension magazines	5	18	26	26	56	0.178

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

Table 7. Index scores showing level of educative value consumers attach to information on quality and safety issues related to quality and safety of milk sourced from the print media articles relative to other information sources

Media Source	Index scores showing level of educative value consumers attach to information on quality and safety issues					Index Scores
	Very High	High	Moderate	Low	Very Low	
Radio	8	29	38	20	36	0.217
Televisions	14	26	22	22	47	0.208
Newspapers	3	24	36	33	35	0.201
Social media	7	22	28	25	49	0.192
Extension magazines	3	16	34	29	49	0.181

(Very trustworthy = 5, Trustworthy=4, Neutral =3, Somewhat untrustworthy = 2, Very untrustworthy = 1)

The results in Table 5 above indicate that consumers trust information aired on radios most then television on causes of poor quality milk. The extension magazines are the least in preference in dissemination of this information to milk consumers. The radio being preferred most in this study is similar to those findings of Sanusi et al. [11] where the radio broadcast was the first on the rating. These findings are also in line with the findings of Asanov, Flores, McKenzie, Mensmann and Schulte [12]. Asanov et al. [12] found out that 92% of the respondents involved in the study own televisions in their homes, hence they find the television to be of high educative value. A study by Ahakwa, Yang, Tackie and Bankole [13] also revealed that television advertisement has the greatest impact on customer purchase decision and was statistically significant at $p < 0.01$. The findings of this study are also similar to those of a study conducted by Qader, Hamza, Othman, Anwer, Hamad, Gardi, & Ibrahim, [14], where radio advertisements were found to have beneficial influence on the consumers. Radios have great socioeconomic influence on the consumers.

The results in Table 6 show that consumers attach very high educative value to information on risks of poor quality milk, when it's reported on radios. This can be attributed to the fact that radios broadcast vital information during emergency situation or when an emergency is anticipated. The consumers find information from radios to be more reliable and it reaches most number of people. Many consumers use radio because compared to social media, it does not run out of data. This study's findings are in line with the findings of Oto and Shimayohol [9]. The researchers in the study found out that 66.77% of the respondents involved in the study preferred radio as most educative channel of media because of its availability and accessibility to many respondents. The findings of this study are in line with those of a study by Bolek [15] where 58% of the consumers found radio programs most efficient and effective in offering educative information, that helped in making informed judgement and decisions.

Table 7 shows that consumers find information aired on radio to be of very high educative value on issues of quality and safety of milk. The second most preferred channels is television. These findings are in line with the findings of Asanov, Flores, McKenzie, Mensmann and Schulte [11]. The researchers in the study found out that 92% of the respondents involved in the

study own televisions in their homes, hence they find the television to be of high educative value. A study by Ahakwa, Yang, Tackie and Bankole [13] also revealed that television advertisement has the greatest impact on customer purchase decision and was statistically significant at $p < 0.01$.

4. LIMITATIONS OF THE STUDY

The study had the following limitations:

1. Published information on quality and safety of milk in the mainstream newspapers during the study period were selective issues of relevance to the editors of the newspapers. The researcher navigated this limitation by ensuring selected articles were not direct question-and-answer interviews or paid advertisements.
2. Some respondents had difficulty understanding questions since the consumer survey questionnaire was in English. The researcher translated the items into Kiswahili when administering the consumer survey questionnaire to milk consumers with difficulty understanding English.
3. Some of the respondents were in a real hurry to end the interview. In such cases, the researcher issued such respondents the questionnaires to go through independently at their recommended pace as they responded to the items.

5. CONCLUSION

- i. Radio as channel of communication is most preferred by consumers when sourcing educative information on milk quality and safety
- ii. The content of print media articles is more educative to those producing and handling milk and dairy products. However, milk consumers find the content less educative and hardly three in ten trust the content.

6. RECOMMENDATIONS

The following are the recommendations emanating from the study

- i. The content media disseminates to the public on quality and safety of milk should include more content on benefits of quality and safe milk and risks associated with intake of poor quality milk.

- ii. The content disseminated by the agricultural advisory service providers through print media should also involve more information that targets educating the milk consumers.
- iii. Agricultural extension officers should attend workshops to discuss on effective ways of reaching the public other than the use of agricultural extension magazines which have less readership by the public, compared to use of electronic media channels.
- iv. Consumer awareness is essential in fostering reorientation of the Kenyan dairy industry to quality assurance of healthy milk and dairy products.

7. FURTHER PROSPECT

Based on the findings of this study;

- i. It is recommended that further research be conducted on how the existing linkages between research, extension and farmers affect the adoption of better technologies to enhance quality and safe milk in Nairobi and how these linkages can be enhanced.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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