

Urban Consumers Perceived Risks On Traded Milk and The Media Channels Considered When Sourcing Information On Milk Quality and Safety in Nairobi

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ABSTRACT

Communication about milk risks is vital in educating consumers to make informed, healthy food choices. However, empirical evidence has not been presented to demonstrate the importance of media information in risk management in milk production and consumption. This study sought to fill this knowledge gap using researcher-administered questionnaires (n=131) to milk consumers in Nairobi city. This study interviewed 131 milk consumers in Nairobi to determine their perceived risks about milk that is sold in Nairobi and find out the media channels where consumers source information on milk quality and safety. The findings revealed that 55% of the 131 participants said that there was something they could do to control the safety of the milk they purchase. On the contrary, 45% of the participants said that there is nothing in their power they could do to control the safety of the milk they purchase. Relative sourcing of information for risk management actions in cases of poor quality and unsafe milk show that the milk consumers in Nairobi mostly access milk risk information from the electronic media i.e. social media (31.1%), radio (24.4%) and television (24.4%), which inform their mitigation actions. Based on the study the recommendation is agricultural extension messages on milk quality and safety can be effectively communicated to urban consumers through the electronic media since the use of extension magazines is accessed by only 11.1% of the milk consumers, while 8.9% of the population access information on perceived risks on milk sold from the newspapers.

Keywords: Milk quality, Risk-perception, Risk –attitudes, Risk- benefits, Risk avoidance

INTRODUCTION

A large proportion of milk in the market fails to meet the national, regional or international standards in bacterial load, somatic cell count, adulteration, antibiotic residues and chemical contamination. In random samples of both unprocessed and processed milk, the proportion that fail to meet the standards are as high as fifty-five percent in bacterial load [1]. The microbial load increases after the farm-gate along the value chain [2]. Milk adulteration with water and sometimes with butter is as high as thirty percent and this renders milk unsuitable for processing high value products [3].

Aflatoxin contamination exceeding the maximum safe limits of 50 parts set in the European Union standards is as high as eighty-four percent in unprocessed milk [4] while the prevalence of antibiotic residues in milk is as high as forty- five percent [5]. Contaminated and adulterated milk can expose

consumers to health hazards and risks [6-7]. This necessitates that effective communication is made to consumers about the hazards and risks associated with consumption of poor quality and unsafe milk. Access to such information would educate consumers to make informed decision and healthy choices as to whether to consume or not to consume milk that is unsafe, poor quality and not nutritious. Furthermore, the entrepreneurs in the dairy value chain would be aided in making informed investment decisions.

Readily accessible and educative risk-benefit communication can enhance consumer protection and their confidence in the food that they consume and trust in food safety and governance system [8]. The effective food safety and risk communication information and opinions about the risks and risk-related factors associated with food safety hazards and risks are well explained by the world health organization [9]. This has great relevance in Kenya today because the quality and safety of traded milk is a pervasively recurring public health concern, barrier to trade opportunities and diminishes competitiveness of the dairy industry. Kenya's fast growing dairy industry would benefit from effective risk-benefit communication in protecting public health, trade opportunities and enhancing competitiveness of the industry.

This study was aimed at assessing consumers perceived risks on traded milk in Nairobi and to determine which media channels consumers source information from and management actions they take in cases of poor quality and unsafe milk. The assumptions that guided the study were. Milk consumers make decisions on milk purchase and consumption based on information received from different sources. Newspaper information can be educative to consumers if the content is about health risks that directly affect them. The urban consumers are aware and concerned about quality and safety of marketed milk.

Statement of the problem

Effective milk risk communication should educate consumers to be more knowledgeable about milk quality, safety issues, and risk management actions to take in case of poor quality milk. 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 risk management actions because media is a powerful tool for agricultural extension. Therefore, there was a need for this assessment to be conducted.

MATERIALS AND METHOD

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 milk risk-benefit communication 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 risk communication regarding milk quality and safety. It had sections that specifically asked the respondent to rank information communicated through different media that communicate risks potentially associated with marketed milk, regarding: level of trust, Educative value, Risk attitudes, Risk perceptions, Risk avoidance. The questionnaire was chosen because it allows standardization and it is easy to use. Data was collected based on the research questions that guided the study.

The data on consumer perceived risks about traded milk was obtained by the respondents ranking their knowledge on perceived risks of traded milk on a scale from zero to five. The scale was with the codes 0 for no knowledge, 1 for very little knowledge, 2 for little knowledge, 3 for average knowledge, 4 for above average knowledge and 5 for very high knowledge. The data analyzed to answer this question was cross tabulated to obtain index scores using the Statistical Packages for Social Sciences (SPSS) version 22. The data on media channels from which consumers sourced information on risk management actions to take in cases of poor quality and unsafe milk, the respondents had to choose if they never, rarely, often or frequently access information on milk quality and safety from the thirteen sources of information.

DATA ANALYSIS

To identify consumer perceived risks about traded milk in urban markets. The researcher used a questionnaire where the respondents rated perceptions and risk on 1 to 5 Likert scale. Consumers perception and level of willingness to accept milk safety related health risk when taking poor quality milk was measured on a five point Likert scale which was very un-willing, unwilling, neutral, willing to accept the risk and very willing to accept the risk associated with consumption of poor quality milk. The data obtained to answer this question was analyzed using mean comparisons computed as mean index scores of frequencies for all the responses.

The consumers risk avoidance approaches for poor quality and unsafe milk was measured on a five point Likert scale using the following levels of agreement. Strongly agree to avoid poor quality and unsafe milk, agree to avoid poor quality and unsafe milk, neutral on whether to avoid poor quality and unsafe milk, disagree on avoiding poor quality and unsafe milk and strongly disagree on avoiding poor quality and unsafe milk. The data collected was analyzed using mean comparisons computed as mean index scores of frequency for all the responses.

To identifying relative frequency of information sourcing from media channels for risk management actions in cases of poor quality milk. The data collected aimed at determining the media channels from which consumers sourced information on risk management actions to take in cases of poor quality and unsafe milk. The respondents had to choose if they never, rarely, often or frequently access information on milk quality and safety from the thirteen sources of information. They also had to rank their level of trust of the information disseminated by each source of information, on a

five point Likert scale. The data collected was analyzed using mean comparisons computed as mean index scores of frequency for all the responses.

RESULTS AND DISCUSSION

Table 1: Index scores showing consumer risk attitudes towards milk safety related health risk when taking milk.

Risk attitudes	INDEX SCORES				
	Very willing	Willing	Neutral	Unwilling	Very unwilling
Accept milk safety related health risk when taking milk	0.37647	0.35106	0.75	0.81818	0.810811
Think about milk safety when I buy and take milk	0.62353	0.64894	0.25	0.18182	0.189189

Consumers attitude to accept milk safety related health risk when taking milk posted a mean of 3.15 on a Likert scale of 5 measures which is a medium score showing that approximately half of the consumers would accept milk safety related health risk while the other half will not. Consumers attitude to think about milk safety when buying and taking milk recorded a mean of 4.14 which is a high score indicating that most consumer will think of milk safety when buying and taking milk.

Table 2: Index scores showing consumer risk perceptions towards milk safety related health risk when taking milk.

Risk perceptions	INDEX SCORES				
	Very willing	Willing	Neutral	Unwilling	Very unwilling
Exposed to high risks when taking unprocessed milk	0.31746	0.490196	0.425	0.804878	0.6875
Buying safety assured milk at high price is worth the risk avoided	0.68254	0.509804	0.575	0.195122	0.3125

On consumer perceptions, buying safety assured milk at high price is worth the risk avoided recorded a mean of 3.92 which is a high score indicating that most consumers will buy safety assured milk at high prices to avoid risk. A study by Novoselova, Meuwissen, Van der Lans and Valeeva (2002) indicated that 58% of respondents are willing to pay an additional price for milk that is extra-safe. Consumers' perceptions of being exposed to high risks when taking unprocessed milk recorded a mean of 3.27 which is a medium- score indicating that approximately half of the consumers ready to be exposed high risks when taking unprocessed milk while nearly half of the consumers are not ready.

Pearson chi-square test of risk attitudes at 4 degrees of freedom gave a value of 42.735 with significance of 0.000 at 95% confidence level showing there is a significant relationship between risk attitudes and consumption of milk in the market depending on its quality and safety. Pearson

chi-square test of risk perceptions indicated degrees of freedom gave a value of 89.966 with significance of 0.000 at 95% confidence level showing there is a significant relationship between risk perceptions and quality and safety of milk in the market. Both risk attitudes and risk perceptions at 16 degrees of freedom showed a Pearson Chi-square value of 187.201 and 0.00 significance at 95% confidence level showing a significant relationship between risk attitudes, risk perceptions and quality and safety of milk.

Table 3: Consumers power to control the safety of milk they purchase.

Response		NO		YES	
		Frequency	%	Frequency	%
Safety Control Measure	Avoid purchasing low quality	100	76.3	31	23.75
	Can't control process	29	22.1	102	77.9
	Check standardization marks	126	96.2	5	3.8
	Complain, advise and talk to seller	122	93.1	9	6.9
	Don't know milk source	7	5.3	124	94.7
	I don't know how or what to do	12	9.2	119	90.8
	Purchase from licensed dealers	119	90.8	12	9.2
	Report to authorities	129	98.5	2	1.5
	Take preservation measures	119	90.8	12	9.2
	Unable to complain	11	8.4	120	91.6
Total		774	59.1	536	40.9

The results in table 2 above correspond to those from a study conducted by Bebe, Kilelu and Lee (2017), where on average score, 87% of consumers agreed that they think about milk safety when buying and taking milk. On average score, 75% of the consumers said that it is worth the risk avoided in buying safety assured milk at high price but disagreed that buying milk without safety assurance is worth the risk. The consumers were neutral about being exposed to high risks when taking unprocessed milk and neutral on being willing to accept milk safety related health risk when taking milk.

Table 4: Consumers power to control the safety of milk they purchase.

Do you think there is anything in your power that you can do to control the safety of milk you purchase?	Frequency			Percentages		
	NO	YES	TOTAL	NO	YES	TOTAL
Avoid purchasing low quality	0	31		0.0	23.7	
Purchase from licensed dealers	0	13		0.0	9.9	
Take precautionary measures	0	12		0.0	9.2	
Complain, advise and talk to seller	0	9		0.0	6.9	

Check standardization marks	0	5		0.0	3.8	
Report to authorities	0	2		0.0	1.5	
Can't control process	29	0		22.1	0.0	
Don't know milk source	7	0		5.3	0.0	
I don't know how or what to do	12	0		9.2	0.0	
Unable to complain	11	0		8.4	0.0	
Total	59	72	131	45.0	55.0	100.0

Pearson chi-square test on consumer power to control the safety and quality of milk indicated a value of 851.634 at 9 degrees of freedom with significance value of 0.00 showing that the consumer has significant power to control the safety and quality of milk. On average score, 87% of consumers agreed that they think about milk safety when buying and taking milk. On average score, 75% of the consumers said that it is worth the risk avoided in buying safety assured milk at high price but disagreed that buying milk without safety assurance is worth the risk. The consumers were neutral about being exposed to high risks when taking unprocessed milk and neutral on being willing to accept milk safety related health risk when taking milk [10].

Table 5: Index scores showing consumer level of trust on milk quality and safety messages from different media sources.

	INDEX SCORES				
	very trustworthy	somewhat trustworthy	Neutral	somewhat untrustworthy	very untrustworthy
Newspapers	0.17308	0.11515	0.10526	0.00000	0.00000
Radio	0.13462	0.21212	0.26316	0.14286	0.00000
Social media	0.05769	0.15758	0.21053	0.00000	0.12500
Televisions	0.19231	0.21818	0.15789	0.14286	0.00000
Extension magazines	0.03846	0.03030	0.05263	0.00000	0.00000
Public extension	0.09615	0.07879	0.02632	0.00000	0.00000
Research university	0.17308	0.04242	0.00000	0.00000	0.00000
Product adverts	0.13462	0.14545	0.18421	0.71429	0.87500

The results in Table 4 above indicate that the consumers find information communicated by television very trustworthy, and that communicated through newspapers and by research done by the universities. This finding concur with those of a study conducted by Reshtia, Singh and Sharma (2021), where a group of farmers were selected to determine their preferences when using different

communication channels to source agricultural information and the problems they encountered. The channels involved in the study were print media, electronic media, personal contact by agricultural extension agents and social media. Television was the most preferred electronic media channel. The findings that the probability of consumers trusting the print media information increases with frequency of reading newspaper demonstrates the potential for an increased role of print media in educating consumers on matters of food safety. This provides evidence that the print media can play a role in disseminating informative and educative content about food quality and safety. Therefore, regulating authorities can enter into partnership with the media to provide access to a communication channel that quickly reaches a wider population of consumers.

CONCLUSION

The consumers' attitude to think about milk safety when buying and taking milk recorded a high score indicating that most consumers think about milk safety when buying and taking milk.

The media channels that consumers find most trustworthy in sourcing information on risk management actions to take in case of poor quality and unsafe milk in descending order based on index scores is televisions, research from university and newspapers, radio and product advertisements, public extension, social media and lastly agriculture extension magazine. Therefore the agricultural extension agents should consider use of electronic sources of information to reach out to many urban consumers.

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