

AN EMPIRICAL ANALYSIS OF CONSUMERS' AWARENESS ON FOOD SAFETY IN CHHATTISGARH

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Abstract

The consumer awareness regarding food safety has been found unsatisfactory in the study. This study showed most of the respondents was unaware about the various adulterants and their effects on health. The study has shown that consumers' knowledge of consumer rights was very poor on food adulteration and consumers behavior. A majority of the respondents had little knowledge of consumer rights as well as acts and regulations enacted to protect the consumers' rights and ensure food safety. The role of government agencies and consumer organizations needs to create awareness among the consumers as well as effective monitoring and implementation of the laws on food safety, adulteration and its impact on the consumers' health. The purpose of this study was to find out the knowledge and practices of the consumers of Raipur municipality, Raipur, on food adulteration and its effect on their health. A quantitative and descriptive type of research design was employed for the study. The total number of consumers who live in Raipur, Ward No. 2, was the population of this study. The sample size was 150 households selected by a simple random sampling procedure. The interview schedule was the tool for primary data collection. The results of the overall study showed that the respondents had poor knowledge of consumer rights and food adulteration and its effects on their health.

Keywords: Adulteration, Consumer, Food, Knowledge, Practice, Safety

1. Introduction

Food is a basic requirement of all living beings for their growth. The health and productivity of people depend on the nature of the food they consume and its wholesomeness in term of its nutritive value (Battershall, 2024). Food adulteration is an emerging problem which causes loss of

economy to food stuff of lower quality in one hand and negative impact on the health of consumers on other hand (Bower, 2020). Awareness is power which enables people to take appropriate action against any problem. Unless common people know about food adulteration, they are bound to

suffer, both physically (health) and economically (Goel & Goel, 2022). Food safety is an important public health issue and food adulteration is one of the notorious health hazards. The availability of safe food improves the health of people and addresses basic human rights (Negri, 2020). World Health Organization [WHO] has a specific mandate for the protection of public health. Its mission is the attainment by all the people of world of the highest level of health. This attainment needs protection of the nutritional value of food as well as the prevention of potential health hazards (Dawadi, 2005). Adulteration is the process by which the quality or nature of a given food is reduced through the addition of a foreign or an inferior substandard substance or the removal of vital vitamins.

Within the supply chain, adulteration is the key food safety issue (Ades, Garig & Feldsten, 2025). The consumer defense is the knowledge of all the malpractices and utilization of the consumer rights and their knowledge and awareness about the adulterated foods, and adulteration related law. Such knowledge and awareness are crucial in the society where technology heightens opportunities for perpetrators of frauds, deception and misrepresentation (Gupta & Panchal, 2020). After a long struggle and advocacy by the consumer organizations and civil society for a separate and comprehensive consumer protection laws based on UN guidelines, the Raipurese parliament finally made consumer protection act, 1998.

The earliest known statement of consumer right at a political level was given on the 15th march, 1962 when the US president John F. Kennedy delivered a speech to the Congress in which four consumer rights were highlighted: right to safety, right to be informed, right to choose and right to be heard. Later on, the general assembly of the UN added four more rights: right to fulfillments of basic needs, right to redress, right to consumer education, and right to live in a clean and hygienic environment (GoN, 2020). WHO has been assisting member states to strengthen their programs for

improving the safety of food all the way from production to final consumption (Comuniica, 2005). Ensuring food safety has been recognized as an important aspect of the protection of people's health. So food adulteration has been recognized as a problem. In such context, public base defense is the knowledge of food adulteration and its effect on their health, and utilization of the consumer rights and responsibilities and legal remedies which exist to resolve these problems when they occur. The overall situation makes it clear that Raipur has been facing food safety problems due to adulteration. So, the researchers selected the research topic

2. Methodology

This study was concerned with the 'consumer awareness and practice on food safety'. The researchers applied quantitative and descriptive research design for the study. The area of the study was Raipur municipality ward no 4 of Rupandehi district, Raipur. All the household consumers in the ward were the population of this study. Interview schedule was used as a tool for data collection. A total number of 150 household respondents were selected as sample size by simple random sampling method. After the collection of the required data from the respondents, it was checked and verified to reduce possible errors. The Statistical package for Social Sciences Version 20 [SPSS version 20] was applied for the tabulation as well as the analysis of raw data in frequency table, percentage and needed information. The data and descriptive information were analyzed and interpreted based on percentage, from which findings and conclusion were drawn.

3. Result and Discussion

This section focuses on the knowledge of the respondents on food safety and adulteration of food items. The respondents have been using different food adulterants with their effects on the consumers' health. How well they were aware about how badly food adulteration affected their health and how knowledgeable they were on various consumer rights are described below.

3.1. Age and sex wise Involvement of Respondents in Family shopping.

Age and sex are the important aspects of demographic characteristics which are directly or indirectly indicative of the consumers' health and behavior. The respondents were distributed in the differences of five years. Most of the respondents whom the researchers came across were in

between 20 to 60 years. In the context of Raipur Municipality, Raipur the respondents who do shopping is given below.

TABLE 1. DISTRIBUTION OF SHOPPING BY AGE AND SEX

Age in years	Shopping				Total	
	Male shoppers		Female shoppers			
	Number	Percent	Number	Percent	Number	Percent
20-29	27	18.00	21	14.00	48	32.00
30-39	10	6.67	25	16.67	35	23.33
40-49	8	5.33	17	11.33	25	16.67
50-59	7	4.67	15	10.00	22	14.67
60 & above	6	4.00	14	9.33	20	13.33
Total	58	38.67	92	61.33	150	100.00

The above table shows that the number of male is 58 (38.67%) and female is 92 (61.33%) . The table explains the population living the age group 20-29 had the highest majority and the population living between the age group 60 & above had lowest majority. The study had shown that the study population was 150. It was found that the number of female was more than male by 22.66 percent. Most of the shopping for the family is done by females. The total respondents who did shopping for the family were 61.33 percent females while 38.67 percent were males. Both males and females, maximum respondents belong to age group 20-29 years [males] and 30-39 [females]. The percent were 18% and 16.67% respectively. The data showed that female members of the respondents were mostly involved in shopping. The reasons may be females were the home makers traditionally and inclined towards the purchasing of food items.

3.2. Educational Status of the Respondents

Education is one of the important characteristics for the development of a nation. According to census 2078 BS, the literacy rate of Raipur was 76.2%, the literacy rate of male was 83.6%, and

that of the female was 69.4%. The educational status of the respondents is presented in the table below.

TABLE 2. DISTRIBUTION OF THE RESPONDENTS BY EDUCATIONAL STATUS

Education level	Number	Percent
Illiterate	10	6.67
Literate	35	23.33
SEE	42	28.00
Higher Education	63	42.00
Total	150	100

The above table shows 6.67 percent were illiterate while 23.33 percent of the respondents were literate. Similarly, 28 percent of the respondents had SEE level education and 42 percent had higher education. The aforementioned table denoted that literate persons were 93.33 percent. However, 6.67 percent were still illiterate which can probably be due to poverty (ADB, 2024).

3.3. Monthly Income of the Respondents

Income is one of the major factors which leads to the better health status of the respondents, and their economic status depends on the monthly income and expenditure. Economic status determines the purchasing power, standard living, quality of life, family size and patterns of disease. The following table shows the monthly income of the respondents.

TABLE 3. DISTRIBUTION OF RESPONDENTS BY MONTHLY INCOME

Income	Number	Percent
< 9000	19	12.67
10000-19000	41	27.33
20000-29000	36	24.00
30000<	54	36.00
Total	150	100

The above table shows that the respondents who earned less than NPR 9000 per month were 12.67 percent; earning between NPR 10000- 19000 were 27.33 percent; those whose income was NPR 20000- 29000 were 24 percent, and 36 percent of the respondents earned more than NPR 30000. According to country partnership strategy, Raipur 2013-2017 the annual income of Raipurese people was NPR 19000 below denotes the poverty (ADB, 2024). So researcher concluded from the above table that the economic status of about 40 percent respondents was not satisfactory to live a quality life.

3.4. Awareness of the Respondents on safety of Food Items

Food is an important and basic biological need of Human beings. It is required for them to maintain nutritional status that enables them to grow well and enjoy good health. Food should have nutritional value and be safe for consumption. Consumer awareness on safety of food items helps them maintain and protect food items they are using.

TABLE 4. DISTRIBUTION OF RESPONDENT BY AWARENESS ON SAFETY FOOD ITEMS

Safe food in the market?	Respondents	
	Number	Percent
Yes	17	11.3
No	112	74.7
Don't Know	21	14.0
Total	150	100

The table shows that 11.3 percent respondents replied that safe food was available in the market while 74.7 percent said that the available food items were not safe. 14 percent of consumers didn't know whether they were safe or not. A large percent complained that the food materials in the market were not safe, which meant consumers were not satisfied with the food available in the market. Most of the respondents believed that the food items they were using were not safe for their health. Thus it can be concluded that consumers were not adopting right consumer behavior.

3.5. Respondents' Awareness on Food Adulteration

Intentional or accidental addition of a foreign substances mixed with food which reduces the quality of food is known as food adulteration (Food act, 1967). The following table shows the data of food adulteration.

TABLE 5. DISTRIBUTION OF RESPONDENTS BY THE AWARENESS OF FOOD ADULTERATION

Knowledge of Food Adulteration	Number	Percent
Mixing of two or more food	50	33.33
Mixing of low qualitative food	75	50.00
Both 1 st and 2 nd	7	4.67
Don't know	15	10.00
Any other contamination or presence of fertilizers and pesticides residues	3	2.00
Total	150	100

The above table shows that 33.33 percent of respondents replied that mixing two or more types of food is adulteration while 50% thought the mixing of low quality food with the quality food is adulteration. 4.67% respondents said adulteration was both mixing two or more food and low qualitative food while 2% respondents said adulteration was contamination or presence of fertilizers and pesticides residues with food. But 10% respondents didn't have any idea about what the food adulteration means. Hence it can be concluded from the analysis that the respondents' knowledge on food adulteration was average. A greater percent of them expressed their ignorance on it.

3.6. Knowledge of the Respondents on Various Food Adulterants

Greedy businessman was involved in adulteration to make easy money by increasing the bulk of food with inferior and cheaper substances of the food wholly or partly. Adulteration not only affects the quality of food but is also injurious to health. Consumer awareness of the respondents about commonly used adulterants is presented in the given table.

TABLE 6. DISTRIBUTION OF RESPONDENTS BY THEIR KNOWLEDGE ON COMMONLY USED ADULTERANTS

Adulterants	Number	Percent
Non-edibles colors, chemicals	14	9.33
Non-edibles like sand, stone, pieces of bricks, powder etc.	100	66.67
Non-edible oil	8	5.33
All of above	25	16.67
Don't know	3	2.00
Total	150	100

The above table shows that 9.33 percent of the respondents knew that commonly used adulterants were non-edibles colors and chemicals; 66.67% respondents reported non-edibles like sand, stone, pieces of bricks and powder were mixed with the food; and 5.33% respondents said non-edible oil has been used as adulterants. 16.67% respondents said all of the above were used, and 2% of the respondents didn't have any idea about the adulterants. So, it can be concluded from the analysis that respondents' knowledge on some of the fatal adulteration was very low.

3.7. Knowledge of the Respondents on Effect of These Adulterants on Their Health

Food adulteration lowers the quality of food which is unfit to consume. Non-edible colors, chemicals, methanol yellow may cause allergy, liver problems and even cancer. Non-edible materials like stone, sand, bricks, and powder etc. cause stomach problems. When consumed continuously keshary dal for a long period may causes paralysis (cite). Argemone Mexicana oil used to adulterate mustard oil leads to severe conditions like epidemic dropsy and glaucoma of eyes. Minerals oil mixed with edible oil can cause damage of the liver. The respondents had very little knowledge in this regard which is presented below.

TABLE 7. DISTRIBUTION OF RESPONDENTS BY THEIR KNOWLEDGE ON EFFECT OF VARIOUS FOOD ADULTERANTS ON CONSUMER HEALTH

Adulterants	Health hazards	Number	Percent
Brick, Sand, Stone, Powder etc.	Stomach problem	30	20.00
	Don't know	120	80.00
Total		150	100.00
Methanol Yellow	Liver problem	7	4.67
	Allergy	15	10.00
	Don't know	128	85.33
Total		150	100.00
Khesari Dal	Paralysis	17	11.33
	Don't know	133	88.67
Total		150	100.00
Argemone Mexicana Oil	Glaucoma	18	12.00
	Epidemic dropsy	10	6.67
	Don't know	122	81.33
Total		150	100.00
Mineral Oil	Damage to liver	20	13.33
	Don't know	130	86.67
Total		150	100.00

The above table shows that most of the respondents were unaware about the actual human organs affected due to various adulterants. Only 20% of the respondents knew about the adverse effect of consuming stone, sand, bricks, dust and powder while 4.67% and 10% of the respondents knew about the effects of methanol yellow on consumers' health. 'Khesari' was a common adulterant found in pulses but only 11.33% of the respondent knew about its bad effect on health. Only 18.67% (12% and 6.67%) of the respondents had knowledge about the effect of Argemone Mexicana oil while 13.33% of the respondents had the knowledge about the effects of mineral oil

consumption. So, it has been clear from the table that consumers' knowledge in this regard was very poor. Ignorance regarding the adverse effects of the adulterants on the human health was one of the causes that consumers weren't much alert while purchasing goods.

3.8. Knowledge of the Respondents on Consumer Rights

The table below shows the data regarding respondents' knowledge on some of the consumers rights: right to safety, right to be informed, right to be heard, and right to redress.

TABLE 8. DISTRIBUTION OF RESPONDENT BY KNOWLEDGE ON CONSUMER RIGHTS

Consumer right	Know		Don't know		Total	
	Number	%	Number	%	Number	%
Right to safety	31	20.67	119	79.33	150	100.00
Right to be informed	44	29.33	106	70.67	150	100.00
Right to be heard	18	12.00	132	88.00	150	100.00
Right to redress	40	26.67	110	73.33	150	100.00

From the above table, it is evident that 20.67% of the respondents had the knowledge on the right to safety, 29.33% had the knowledge about right to be informed, 12% of the respondents knew about the right to be heard, and 26.67% had the about the knowledge on the right to redress. Hence, respondents' knowledge on various consumers' rights was found to be poor.

3.9. Respondents' Practice of Showing Reaction to Cheating of Quality, Quantity and Price

Consumers are cheated in quality, quantity and price of consumer items most of the time. It is the responsibility of consumers to be active against such exploitation and execute the consumer rights. The following table presents the data regarding respondents' practice of reaction to cheating.

TABLE 9. DISTRIBUTION OF RESPONDENTS BY THEIR PRACTICE TO SHOW REACTION AGAINST CHEATING

Reaction against cheating	Number	%
Suggestion, complaint to sellers	99	66.00
Complaint to district court	7	4.67
Report to the police	9	6.00
Publicity	12	8.00
Nothing	23	15.33
Total	150	100.00

The data above shows that most of the respondents 66% used to suggest and complain the sellers about their being cheated on quality, quantity and price. 4.67% of the respondents complained in the district court, 6% respondents reported to the police while 8% respondents did publicity and 15.33% respondents did nothing on this issue. Thus, it can be concluded that the respondents lacked right consumer behavior in the context.

3.10. Respondents' Sources of Consumer Education

Respondents' knowledge and practice greatly depends on socio demographic factors. In terms of the varieties in socio-demographic characters, the respondents have different chances of exposure to the source of knowledge. The table below gives the factors which influence respondents' knowledge and practice on consumer education

TABLE 10. DISTRIBUTION OF THE RESPONDENTS BY SOURCES OF CONSUMER EDUCATION

Consumer education	Number	%
By school education	22	14.67
By Government organization	91	60.67
By school and mass media	14	9.33

By NGOs consumer awareness program	3	2.00
Others	20	13.33
Total	150	100.00

The table shows that 60.67% of the respondents received consumer education from the source of Government organization. For 14.67% of the respondents the source was school education, 9.33% of the respondents got such education from the sources of school and mass media. For 2% of the respondents, the source was NGOs consumer awareness program, while 13.33% respondents got consumer education from other sources. Most evidently, consumers' education is one of the consumer's rights. It helps to create consumers' awareness and which in turn helps consumers to adopt right consumer behavior.

4. Conclusion

The consumer awareness regarding food safety has been found unsatisfactory in the study. A majority of the respondents had little knowledge of consumer rights as well as acts and regulations enacted to protect the consumers' rights and ensure food safety. The role of government agencies and consumer organizations needs to create awareness among the consumers as well as effective monitoring and implementation of the laws on food safety, adulteration and its impact on the consumers' health.

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