

# A Study on Consumer Awareness in Food Adulteration with Special Reference of Coimbatore City

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## Abstract

Food adulteration poses a significant challenge to public health and safety, particularly in urban areas. This study explores the prevalence and awareness of food adulteration in Coimbatore City, focusing on its impact on consumer health and safety. The research employs primary data collection through structured questionnaires distributed among residents of Coimbatore. Statistical tools such as SPSS were used for data analysis, including frequency analysis and ANOVA, to assess the correlation between demographic factors and awareness levels. The findings indicate a high prevalence of adulterated food products in the region and varied levels of consumer awareness based on demographic variables. The study emphasizes the need for stricter regulations, increased public awareness campaigns, and robust quality control measures to combat food adulteration effectively. It concludes that a collaborative effort from consumers, regulatory authorities, and food manufacturers is essential to ensure food safety in Coimbatore City.

**Keywords:** Food adulteration, Consumer awareness, Food safety, Coimbatore City, Public health.

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## 1.1 INTRODUCTION

Food adulteration is a growing concern that poses serious risks to public health and safety. It involves the addition of harmful or inferior substances to food, often for economic gain, compromising its quality and nutritional value. Adulteration not only affects food integrity but also escapes consumers to health issues such as food poisoning, digestive disorders, and chronic diseases like cancer. Many individuals are unaware of common adulterants, the harmful effects to detect them. The study focuses on consumer awareness of food adulteration, its detection methods, and its impact on health. It aims to identify the level of awareness among consumers and highlight the need for educational campaigns and strict enforcement of food safety measures. This detect adulteration is essential for reducing its prevalence and ensuring safer food practices. Food adulteration is a critical issue in real-time due to its severe impact on public health and safety. The addition of harmful chemicals or substances to food can lead to acute illnesses like food poisoning and chronic conditions such as cancer, liver damage, or kidney failure. With staples like milk, spices, and grains often being targeted, the risk extends to millions of people who rely on these for their daily nutrition. The main purpose of food

adulteration is to alter the quality of food products for economic advantage. Such actions usually take place by substitution with inferior quality or less valued food and increasing the weight or volume by admixture of undeclared ingredients.

## 1.2 STATEMENT OF THE PROBLEM

Food adulteration is a significant public health concern that compromises the safety and quality of food consumed by individuals. Despite advancements in food safety standards and regulatory frameworks, the lack of consumer awareness remains a critical issue, allowing adulteration practices to persist. Consumers are often unaware of the harmful effects, the methods of adulteration, and how to detect them. This lack of awareness leaves consumers vulnerable to health risks, including foodborne illnesses, organ damage, and chronic conditions like cancer. Ensuring informed decision-making and promoting active participation in food safety with floor adulteration.

## 1.3 NEED OF STUDY

The study of consumer awareness in food adulteration. The study due to its significant impact on Public Health, Safety and market integrity. Adulterated substances that pose over health risk,

making it crucial to assess. Consumer knowledge and Practices to promote informed choices and safer Consumption habits. This research helps identify gaps in awareness empowering Consumers to detect adulteration the enforcing food safety laws. This Contributes to improved public health, market transparency and economic stability by addressing the issue of food adulteration. The study of consumer awareness in food adulteration is vital to protecting individual health and well-being. Adulterated food products often contain harmful substances that can cause severe health issues such as food poisoning, organ damage, and long-term diseases. Awareness equips individuals with the knowledge to identify and avoid unsafe food products. At the public and governmental level, awareness of food adulteration plays a key role in ensuring food safety and public health. Informed communities can advocate for better food quality standards, pushing manufacturers to comply with safety regulations. Governments, in turn, can implement strict policies, conduct regular inspections, and penalise offenders to deter adulteration. A collaborative approach between the public and authorities creates a safer food supply chain, reduces health risks, and fosters trust in the food industry.

#### 1.4 SCOPE OF THE STUDY

The scope of the study on consumer awareness in food adulteration focuses on understanding how much consumers know about adulteration. food and their ability to identify it. If considers the impact, Demographic factors like age, education and income on awareness levels. The study uses a structured questionnaire with closed and open-ended questions to assess consumer awareness, perceptions, and behaviours regarding food adulteration. Improving public health and promoting ethical practices in the food industry.

#### 1.5 OBJECTIVE OF THE STUDY

- To study on socio-economic factors of the respondents.
- To study the awareness of food adulteration.
- To study the effects of using adulteration in foods.
- To know the factors influencing to buy unhealthy products.

#### 1.6 RESEARCH METHODOLOGY

Research Methodology for a study on Consumer awareness of food adulteration involves a

descriptive research design to explore the level of awareness information sources and Consumer responses. A sample size of around 140 respondents' Primary data is gathered using. Structured Survey interview and observation. of Consumer behaviour during Purchases. This approach ensures a comprehensive understanding of Consumer knowledge and practices related to food adulteration. Secondary data is sourced from existing literature, government reports and studies on food safety.

#### 1.7 SAMPLING TECHNIQUES

- The sampling technique is studying the population by gathering the information and analysing that data at random.
- This research is conducted by random sampling.

##### 1.7.1 SAMPLING SIZE

- Sample size refers to the number of participants or observations included in a study.
- Approximately 100 respondents will be targeted for participation in the study.

##### 1.7.2 TOOLS USED

- Frequency
- Anova

#### 1.8 LIMITATIONS OF THE STUDY

- The area of the study is conducted only in Coimbatore city, so the result may not be applicable to other cities.
- Only 140 respondents have been taken for the study, if the responses increase the results may differ.

#### 2. LITERATURE REVIEW

In the upcoming lines, the review of literature takes place which includes reviews of past studies.

**Sharifa Nasreen and Tahmeed (1996-2011)<sup>1</sup>**, in the study titled “**Food Adulteration and Consumer Awareness**”. The objective of the study is to address food safety as a global public health issue by identifying hazards such as microbial contamination, pesticide residues, chemical toxins, and adulteration. The tools used in the study were data collection, cross-sectional surveys, analysis, and stakeholder intervention. The findings revealed that 40-45% of daily consumed food in Dhaka City was adulterated, and many consumers lacked knowledge about food adulteration when purchasing packaged

food. The suggestion was to implement measures to deter chemical adulteration through additives and increased consumer awareness. The conclusion emphasized the need for effective strategies to combat food adulteration to ensure public health safety.

**Elizabeth C. Redmond and Christopher J. Griffith (2003)<sup>2</sup>**, in the study titled “**Consumer food handling in the home, promote food safety and reduce the sickness of foodborne illnesses**” The objective of the study is to address unsafe food-handling behaviour despite knowledge of safety measures. The data was collected from 245 respondents. The tools used in this review are data collection methods, including surveys, focus groups, and studies. The findings revealed that many consumers lack adequate knowledge about food safety, particularly in areas like temperature control. The study concludes that improving consumer food handling behaviours can reduce illnesses and suggests bridging the gap between knowledge and behaviour through targeted education and awareness programs.

**Nidhi Gupta and Priti Panchal (2009)<sup>3</sup>**, in the study titled “**Extent of awareness and food adulteration detections in selected food items purchase**” The objective of the study is to emphasise the critical effects of food adulteration, its health hazards, and the lack of consumer awareness, especially among homemakers. The data was collected from 317 respondents. The study aims to

protect consumers from adulteration and fraud and identify commonly used brands of selected food products among homemakers. The tools used in this review include data collection methods, questionnaires, interviews, stratified sampling methods, and laboratory methods. The findings revealed higher adulteration levels in loose food items compared to branded products, with examples such as chalk powder in turmeric and grit in flours. The study concludes that enhancing consumer literacy can empower individuals to tackle adulteration effectively.

**R.T. Gauhar (2014)<sup>4</sup>**, in the study titled “**Food adulteration and contamination in India**” The objectives of the study are to understand the occurrence and types of food adulteration and contamination, emphasise preventive measures, and strengthen the regulatory system to minimise health hazards. The data was collected from 377 respondents. The tools used in the study included structured questionnaires for gathering consumer feedback, laboratory analysis for detecting adulterants, and field surveys to observe practices in food production and distribution. The findings revealed the addition of non-permitted additives, contamination by mycotoxins, pesticides, and heavy metals, as well as the impact of globalisation on food safety. The study concludes by providing practical solutions for consumers and authorities to reduce risks.

### 3.1 PERCENTAGE ANALYSIS

Table1

DEMOGRAPHICS		FREQUENCY	PERCENTAGE
AGE	18-25	112	80
	26-40	18	12.9
	41-60	9	6.4
	ABOVE 60	1	0.7
	<b>TOTAL</b>	<b>140</b>	<b>100</b>
GENDER	MALE	90	64.3
	FEMALE	50	35.7
	<b>TOTAL</b>	<b>140</b>	<b>100</b>
EDUCATIONAL QUALIFICATION	HIGH SCHOOL	2	1.4
	DIPLOMA	6	4.3
	GRADUATE	105	75
	POST GRADUATE	27	19.3
	<b>TOTAL</b>	<b>140</b>	<b>100</b>
FAMILY TYPE	JOINT FAMILY	35	25
	NUCLEAR	105	75
	<b>TOTAL</b>	<b>140</b>	<b>100</b>

<b>MONTHLY INCOME</b>	LESS THAN 25000	54	38.6
	25000-35000	21	15
	35000-50000	39	27.9
	MORE THAN 50000	26	18.6
	<b>TOTAL</b>	<b>140</b>	<b>100</b>

**ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
Rate the following based on your preference from the statment [Food adulteration is a serious issue that affects the 2 and safety of food products]	Between Groups	20.228	3	6.743	2.860	.039
	Within Groups	320.658	136	2.358		
	Total	340.886	139			
Rate the following based on your preference from the statment [Adulterated food negatively affects health ]	Between Groups	24.412	3	8.137	3.577	.016
	Within Groups	309.381	136	2.275		
	Total	333.793	139			
Rate the following based on your preference from the statment [I prefer buying 3ed food products over un3ed food products ]	Between Groups	29.516	3	9.839	4.269	.006
	Within Groups	313.420	136	2.305		
	Total	342.936	139			
Rate the following based on your preference from the statment [To minimize exposure to adulterated food, I prioritize cooking meals at home using fresh and trusted ingredients.]	Between Groups	26.457	3	8.819	3.918	.010
	Within Groups	306.086	136	2.251		
	Total	332.543	139			
Rate the following based on your preference from the statment [I am aware the meaning of the term 'Best before' on food 4]	Between Groups	25.628	3	8.543	3.764	.012
	Within Groups	308.658	136	2.270		
	Total	334.286	139			
Rate the following based on your preference from the statment [I consider the environment impact of 4 when purchasing food items ]	Between Groups	28.590	3	9.530	4.374	.006
	Within Groups	296.345	136	2.179		
	Total	324.936	139			
Rate the following based on your preference from the statment [I can identify whether food items like 4, spice, honey, or oil are adulterated]	Between Groups	32.740	3	10.913	4.710	.004
	Within Groups	315.110	136	2.317		
	Total	347.850	139			
I believe the government should take action against food adulteration.	Between Groups	26.040	3	8.680	3.878	.011
	Within Groups	304.381	136	2.238		
	Total	330.421	139			
Rate the following based on your preference from the statment [I prefer to buy food from 1 rather than 2 due to adulterated concerns]	Between Groups	29.469	3	9.823	4.551	.005
	Within Groups	293.524	136	2.158		
	Total	322.993	139			

## INTERPRETATION

The above table indicates that the demographic factor of the 140 respondents have been taken for the study, Age: 112 (80%) of the respondents were 18-25 years, 18 (12.9%) were 26-40 years, 9 (6.4%) were 41-60 years, and 1 (0.7%) was above 60 years. Gender: 90 (64.3%) of the respondents were Male and 50 (35.7%) were Female. Education: 2 (1.4%) of the respondents had a High School qualification, 6 (4.3%) had a Diploma, 105 (75%) were Graduates, and 27 (19.3%) were post-graduates. Family Type: 35 (25%) of the respondents lived in Joint Families and 105 (75%) lived in Nuclear Families. Monthly Income: 54 (38.6%) of the respondents earned Less than ₹25,000, 21 (15%) earned ₹25,000-₹35,000, 39 (27.9%) earned ₹35,000-₹50,000, and 26 (18.6%) earned More than ₹50,000.

## INTERPRETATION

The ANOVA results suggest that, there is no significant difference between the groups ( $F \approx 0.045$ , Sig.  $\approx 0.987$ ). The variation within groups (SSW = 3839.651) is much larger than the variation between groups (SSB = 3.775). This analysis implies that the groups are likely to be homogeneous, and any observed differences are probably due to chance.

## 4.1 CONCLUSION

The study on consumer awareness in food adulteration with special reference to Coimbatore City reveals that while many consumers are aware of food adulteration, a lack of practical knowledge and preventive measures persists. This highlights the need for educational initiatives to empower consumers and stricter enforcement of food safety regulations. By promoting awareness and encouraging vigilance, safer food consumption practices can be ensured. This research provides valuable insights for addressing food adulteration issues and protecting public health in urban areas like Coimbatore.

## REFERENCE

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