

# **Food Adulteration and Consumer Challenges in Bangladesh**

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This report is submitted to the school of Business and Economics, United International University as a partial requirement for the degree fulfillment of Bachelor of Business Administration.

Report  
On  
**Food Adulteration and Consumer Challenges in  
Bangladesh**

Course code: INT 4399

**Submitted To**

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## Letter of Transmittal

June 08, 2023

Khandoker Mahmudur Rahman, Ph.D.

Professor

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**Subject: Submission of Report on “Food Adulteration and Consumer Challenges in Bangladesh”**

Dear Sir:

I am submitting the report titled "Food Adulteration and Consumer Challenges in Bangladesh," as part of my academic requirements for the BBA program at United International University. The report aims to shed light on the critical issue of food adulteration and its impact on consumers in Bangladesh. Throughout the study of the report, I have delved into the alarming prevalence of food adulteration practices in Bangladesh, which pose significant risks to public health and consumer rights.

I hope that my report satisfies the conditions that have been established by the institution and accurately portrays the efforts that I have made while participating in the internship/project programme. I will look forward to hearing your comments and suggestions when they are submitted. I am more than prepared to provide any extra information or clarity that may be requested.

Yours sincerely,



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## **Declaration of the Student**

I, **MD MESBAH UDDIN SHIFAT**, a student of School of Business Economics at United International University, hereby declare that the report titled "Food Adulteration and Consumer Challenges in Bangladesh" is my original work. The report has been prepared in fulfillment of the academic requirements for the BBA program and is based on extensive research, analysis, and personal efforts.

I certify that any and all of the material that is included in the report is genuine, up-to-date, and derived from respectable resources. Any references, citations, or quotes that were used in the report have been suitably acknowledged via the inclusion of suitable citations and a bibliography.

Throughout the course of this research project, I have acted ethically and in accordance with the criteria for academic honesty. The report does not include any text that has been plagiarized, and any ideas, thoughts, or theories that have been taken from other sources have been credited in the appropriate manner.

I additionally declare that I have adhered with all of the relevant rules, regulations, and ethical issues pertaining to academic writing and research that have been established by the institution. I am fully aware of the repercussions of any kind of academic misconduct, including plagiarism, and I certify that I have not participated in any actions that fall under this category.

I am understanding that the report will be assessed by the appointed assessors, and I am prepared to give any additional information or explanation that may be requested.



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## **Abstract**

There is a big challenge in Bangladesh in putting a stop to the adulteration of food products. The customer is the most important member of economic society and the center of all activities conducted by businesses. The growth in the median income of individuals has had the impact of causing changes in the market for consumer goods in a number of different ways, including the price, availability, variety, and attractiveness of items. The industrial sector is teeming with brand-new, ground-breaking items that are fueled by a broad variety of technical breakthroughs. These products have the potential to revolutionize their respective industries. Regardless of whether or not there is misleading advertising, incorrect media coverage, or adulteration of the food, it is difficult for the customer to pick a certain meal. Customers are the ones who suffer the most since they are the ones who knowingly ingest contaminated food and end up paying the price for unethical company activities. The Food Safety Act was enacted by the government of Bangladesh in 2013, with the goal of ensuring that all food is fit for human consumption. Nonetheless, boosting the degree of consumer understanding is one of the most vital steps that has to be made in order to lower the quantity of food that has been contaminated. This is one of the most important things that can be done. There are a lot of obstacles that need to be cleared up before the consumer can say for certain that the food they have prepared is risk-free for consumption. Customers who want to be able to effectively cope with the challenges that lie ahead will need to prepare themselves for the concerns that are on the horizon in order to accomplish this goal. They won't be able to properly deal with the obstacles that lay ahead of them until they reach that point. As a component of the research, a study was carried out to examine the incidence and impact of food adulteration in Bangladesh. Furthermore, an examination was conducted on the obstacles encountered by consumers in their efforts to prevent food adulteration, as well as their degree of familiarity with consumer rights. To be more specific, we concentrated on Bangladesh. In order to prepare this report, I first gained a full grasp of the difficulties that consumers in Bangladesh experience by doing an exhaustive literature research on the topic, conducting an analysis of case studies and real-life instances of food adulteration episodes obtained from a variety of secondary data sources, and then writing the report.

**Keywords:** Bangladesh, Food Adulteration, Consumer Challenges, Consumer Awareness.

# CHAPTER 01: INTRODUCTION

## 1.1 Introduction of the Report

The study of consumer behavior is of significant importance in the process of regulating the adulteration of food throughout a whole nation. The study of consumer buying behavior refers to the features and perspectives of the market, and it gives a systematic strategy to managing the enormous variety of information related to the numerous aspects that impact purchase patterns. This research also relates to the characteristics and viewpoints of the market. When a person makes a purchase, that person goes through a decision-making process about the kind of product, the price of the product, and the quantity of the product, which is helped by market agents (Rahman, 2016). Customers have a tendency to maintain a constant pattern of behavior; yet, it is critical that they demonstrate a capacity to adjust to new situations. The buyer is responsible for determining the optimum degree of product quality that can be obtained at a price that is affordable. Buying anything necessitates devoting a considerable amount of one's time, energy, and maybe even material resources to the endeavor. In order to do successful procurement, one must have a full awareness of the sources of the commodities, as well as the uses for which they are intended (Aishawarya Arefin, 2000).

Since the beginning of human civilization, there has been a problem with the contamination of food, which has led to a decline in the overall quality of food items as well as a number of adverse effects on people's health. Microbial dangers, pesticide residues, incorrect use of additives, chemical contaminants such as biological toxins, and adulteration are some of the most prominent threats to the safety of food. Food may be adulterated for a variety of reasons, and there are also a variety of reasons why producers engage in dishonest tactics. Some of these causes include:

- Attempting to deceive customers by artificially inflating product volumes while simultaneously lowering prices,
- Growing the quantity in order to increase the amount of profit,
- Extending the duration of food preservation,
- The process of drawing in potential customers, and
- The practice of prioritizing profit margins over the well-being of the public or consumers.

Due to the fact that today's market gives customers access to a diverse range of buying opportunities, there has been an uptick in the number of customer grievances and difficulties, especially those concerning consumer protection and regulatory affairs. It is expected that this trend will go on for at least the foreseeable future. In this case, the use of a technological tool is expanding the number of options that are open to people who participate in dishonest conduct such as exploitation and misrepresentation. As a consequence of this, it is of the utmost importance to obtain information and awareness about the dangers linked with food adulteration, as well as the relevant regulations and the consumer (Aishawarya Arefin, 2000).

## **1.2 Objectives of the Report**

### **1.2.1 Broad Objective**

The field of food adulteration and consumer challenges aims at maintaining food safety, maintain consumer advantages, and develop effective approaches to prevent and counteract food adulteration ways of doing things.

### **1.2.2 Specific Objectives**

- To study on the prevalence and the impact of food adulteration in Bangladesh
- To identify the key challenges of consumer for reducing food adulteration in Bangladesh
- To make a recommendation that develop effective strategies to prevent and combat food adulteration practices.

## **1.3 Types of Data Collection and Analysis Plan**

This research included secondary data. All the data has been collected from various secondary source including:

- Web-based studies, journals and articles on a variety of topics connected to the food adulteration and consumer rights among consumers.

Qualitative research is excellent for exploratory research. This study's qualitative research offers for a better understanding of impacts of food adulteration and the consumer challenges to prevent adulteration practices. In this paper, the research begins with an extensive review of existing literature, and studies related to food adulteration and consumer challenges. This method facilitates researchers in acquiring a comprehensive comprehension of the subject matter, while also enabling them to identify gaps in knowledge through exploratory elucidation.

## **1.4 Scope of the Study**

An investigation that focused on the topic of food adulteration and the difficulties that have arisen as a direct consequence for consumers in Bangladesh had a wide-ranging reach, since it covered many different areas that are connected to the problem. The purpose of the research is to analyse the prevalence of food adulteration in Bangladesh as well as the total volume of food that has been adulterated, with a particular emphasis on those food products that are most often targeted for adulteration. The purpose of this study is to investigate the extent to which consumers in Bangladesh are aware of the issue of food adulteration. During the process, consumers' knowledge, attitudes, and behaviors about detecting and avoiding food items that have been adulterated or tampered with may be submitted to an assessment. The purpose of this evaluation is to help consumers avoid purchasing food products that have been tampered with or contaminated. It's possible that this assessment will be a component of the procedure. In order to come up with a plan to address the issue of food adulteration, the objective of this research is to conduct an analysis of the regulatory framework that is now in place in Bangladesh as well as the enforcement mechanisms that are already in place. It is able to evaluate the laws, regulations, and policies that are already in place, as well as assess how successful they are in preventing adulteration and safeguarding the interests of consumers. In addition, the investigation may include conducting interviews with a variety of stakeholders, including governmental agencies, food producers, retailers, consumer organizations, and civil society groups, in order to get an understanding of their viewpoints on food adulteration and the difficulties that are experienced by consumers.

## **1.5 Limitation of the Study**

Several constraints have to be considered when conducting qualitative research in Bangladesh regarding the issue of food adulteration and the challenges encountered by consumers. The subsequent are a few common constraints that may be enforced:

- Qualitative research studies usually focus on exploring a certain topic in a great deal of depth, which might lead to the scope of the study being confined. Even while qualitative research provides an in-depth insight of the perspectives and experiences of participants, it is possible that it does not cover the whole range of elements that lead to food adulteration and consumer issues.

- The conduct of qualitative research may pose challenges in relation to temporal and resource limitations. The scope and extent of the research may be constrained by temporal, financial, or logistical limitations that impede access to individuals and resources. Consequently, it is plausible that the research may not comprehensively tackle all facets of food adulteration and consumer concerns.
- Quantifiability is hindered when qualitative research is conducted because while it generates data that is exhaustive and specific, qualitative research may lack the quantifiable metrics that are often associated with quantitative research. The limitation that was discussed before may make it difficult to get precise measurements of the frequency or severity of food adulteration and consumer hurdles, as well as to carry out comparisons between different studies.

# CHAPTER 02: LITERATURE REVIEW

## 2.1 Definition and Types of Food Adulteration

The term "food adulteration" refers to the practice of adding ingredients to food items that are of a worse quality, more hazardous, or lower cost in order to make a financial benefit or to fool customers. (Srilakshmi, 2003). It is a dishonest and unethical practice that puts the health of customers at danger along with the quality, safety, and nutritional value of the food. The following are some instances of food that have been adulterated:

- **Addition of substances:** The term "addition of substances" refers to the practice of include in a food item a substance that was not originally intended to be there. For instance, adding water to milk, combining sand or sawdust with spices, or adding starch to honey are all examples of modifying ingredients (He Y, 2020).
- **Substitution:** One sort of food adulteration involves the replacement of one food item with another that is of inferior quality or worth. For instance, using a cheaper vegetable oil in lieu of olive oil, genuine saffron for colored corn silk, and low-grade wheat flour in place of high-quality flour are all examples of ways to save costs without sacrificing quality (Schleining, 2007).
- **Removal of valuable components:** The elimination of beneficial components A number of the adulterants include the elimination of beneficial components in food. For instance, removing the cream from milk, which lowers its nutritive value, or removing the germ or bran from grains, which eliminates vital nutrients. Both of these processes lessen the overall nutritional worth of the product (Rao P, 2003) .
- **Chemical contamination:** The addition of toxic chemicals to food items is an example of this kind of food adulteration. For instance, adding synthetic colors or dyes to make fruits or vegetables seem fresher, or exceeding the allowable levels of chemical preservatives in food production and distribution (Nimkar, 1976).
- **Pesticide residues:** The phenomenon of food adulteration can manifest when food items are tainted with an overabundance of pesticide residues. This phenomenon occurs as a result of improper pesticide usage or non-adherence to the recommended interval between pesticide application and harvest.

- **Microbial contamination:** Microbial contamination can be classified as a type of food adulteration, wherein microorganisms such as bacteria, viruses, or fungi are present in the food product. The ingestion of these contaminants may lead to the development of foodborne illnesses.
- **Mislabeled:** Mislabeled is a phenomenon that takes place when food labels present inaccurate or fraudulent information. The aforementioned may encompass erroneous data pertaining to constituent components, dietary value, geographical provenance, or spurious assertions concerning the manufacturing processes.

The matter of food adulteration is of significant concern due to its potential to endanger the health of consumers, undermine the quality of food products, and engender fraudulent conduct within the food sector. The detection and prevention of food adulteration are contingent upon the active participation of both food regulatory authorities and consumer awareness.

## 2.2 Importance of Food Safety and Consumer Concerns

Ensuring food safety is crucial for safeguarding public health and enhancing consumer satisfaction. Food safety pertains to the proper management, processing, and preservation of food products in a manner that effectively mitigates the potential for contamination and reduces the likelihood of foodborne diseases (Grewal R, 2015). The escalation of consumer apprehensions regarding food safety has been notable in recent times, owing to various factors such as the prevalence of foodborne illnesses, the extensive reach of global food supply networks, and the heightened consciousness of the potential hazards linked to food consumption (Jonest, 1992).

The significance of food safety and the growing consumer apprehension towards it can be attributed to several pivotal factors:

- **Public Health:** Infectious infections that are spread by food may have serious consequences for a person's health, ranging from a little stomachache to hospitalization and even death, may also be caused by environmental issues as well (Rahman & Noor, 2016), (Rummana et al., 2008). It is possible for pathogenic microorganisms such as bacteria, viruses, and parasites to be harbored in contaminated food, in addition to toxic substances such as chemicals. These microorganisms and substances may cause a variety of ailments, including salmonellosis, E. coli infection, listeriosis, and other disorders that

are linked. The application of food safety rules is an efficient way to reduce the risk of the spread of such diseases and protect the health of the general population (Nasreen S, 2014 Sep ).

- **Confidence of the Consumer Market:** Consumer faith and trust are intimately connected to food safety. When customers have faith that the food they buy and eat is risk-free, they are more likely to have a favorable impression of the food sector and to continue to buy food items. Trust between businesses and their customers may be increased by the implementation of food safety measures such as accurate labeling, open disclosure of information on ingredients and allergies, and adherence to quality standards (Beniwal A, 1999).
- **Compliance with All Applicable Laws and Regulations:** In order to guarantee that food is safe for consumption, governments and regulatory agencies have enacted severe standards and rules. Food companies really need to ensure that they are in compliance with these standards in order to run their operations lawfully. When food safety requirements are not met, a firm runs the risk of facing legal repercussions, suffering financial losses, and having its brand damaged. It is essential that these standards be satisfied in order to preserve the credibility of the food sector and ensure the safety of customers (Beniwal A, 1999).
- **The Internationalization of Food Distribution Networks:** The current food business is dependent on intricate supply networks that span the globe; hence, food items often travel significant distances before reaching end users. This globalization presents extra issues to the safety of food since items may transit through a number of different hands and be subjected to a number of different processing procedures. Consumers are becoming more concerned about the safety of their food as a direct result of the possible dangers that are connected with the complexity and global nature of supply networks (Aishawarya Arefin, 2000).
- **Sensitivity to allergens and dietary constraints:** People who suffer from food allergies, intolerances, or certain dietary restrictions are at a greater risk of experiencing adverse reactions to food, making it even more important to practice proper food safety. People who have food allergies are particularly vulnerable to the dangers that might be posed by the improper handling or cross-contamination of allergenic substances. Consumers are

becoming more concerned about the need of correct labeling, precise ingredient information, and the avoidance of cross-contact in order to safeguard people who have certain dietary requirements (Schleining, 2007).

- **Transparency and Traceability:** Today's consumers are increasingly demanding more openness from the food industry on its origins, manufacturing processes, and safety standards. They want to know where their food comes from, how it was produced, and whether or not it satisfies the requirements for food safety. The desire for transparency and traceability across the whole food supply chain has been spurred by concerns about food fraud, mislabeling, and marketing activities that are intended to mislead consumers (Rahman, 2006).

In conclusion, food safety is critical for the welfare of society, the trust of consumers, and the credibility of the food business as a whole. Increased knowledge, foodborne illness outbreaks, globalization of supply chains, and the demand for openness have all contributed to rising consumer concerns about food safety. Protecting public health and preserving customer confidence requires following best practices for food safety and responding to consumer complaints.

## CHAPTER 03: ANALYSIS OF THE STUDY

### 3.1 Prevalence and Impact of Food Adulteration in Bangladesh

In Bangladesh, food adulteration is a major problem that has persisted for many years despite tremendous efforts to address the issue. The term "adulteration" refers to the practice of adding chemicals that are of poor quality or dangerous to food goods in order to improve profitability or to disguise the product's actual quality. This unethical behavior exposes the general public to significant health dangers and undermines the faith of customers in the food sector.

In Bangladesh, many different kinds of food, including but not limited to milk, edible oil, spices, fruits, vegetables, fish, and goods made from meat, are often tainted with bacteria and other pathogens. This is an issue that affects a large portion of the nation. The following are some common categories of products that have been adulterated:

#### a) Milk Adulteration

Milk is frequently found to be adulterated with diverse substances, encompassing water, flour, urea, detergent, and conceivably hazardous compounds like formalin. Formalin is the preferred preservative for milk, despite its highly toxic nature and potential to cause significant health complications. The issue of milk adulteration has been a noteworthy concern in Bangladesh for a substantial

#### ADULTERATION OF LIQUID MILK



duration. Adulteration refers to the act of incorporating substances into milk that are either of inferior quality or have the potential to pose a threat to human health, with the aim of increasing the profits of the vendor. The subsequent depiction portrays a case of milk contamination in Bangladesh:

The year 2018 witnessed the emergence of a significant scandal involving the adulteration of milk in Bangladesh. Multiple dairy enterprises were convicted of vending milk products that were contaminated and hazardous. The revelation of the scandal was brought to light by the Bangladesh Food Safety Authority (BFSA) during their customary regulatory assessments.

According to the findings of the inquiry, certain milk production companies were adding harmful substances to their product with the intention of increasing both its quantity and its shelf life. Adulterants include water, detergent, caustic soda, urea, formalin (a toxic chemical used for the preservation of dead organisms), and even powdered chalk or plaster. These are just some of the more often seen adulterants.

The inclusion of these contaminants not only resulted in a decrease in the milk's nutritional value, but also posed considerable health risks to consumers. Formalin is a highly toxic compound that has been associated with a range of severe health conditions, such as hepatic and renal impairment, gastrointestinal disorders, and malignancy.

## **b) Edible Oil Adulteration**

Adulteration of cooking oils occurs often in the form of replacement with less costly oils. These oils may include palm oil, soybean oil, recycled and refined oil, and many more, but are not restricted to these options. It's possible that the inclusion of adulterants may have a negative impact, and it will definitely undermine the oil's nutritional purity.



Adulteration of edible oil may take many forms, but one common method involves adding cheaper or lower-quality oils or other substances to the original edible oil in order to increase the volume or reduce the expenses of manufacturing. Consider the following typical situation:

Let's think a manufacturing makes and sells pure olive oil, which is a premium and pricey edible oil. Let's also pretend that the firm is in business. They could add cheaper oils or chemicals to the olive oil without alerting the customers in order to increase the amount of money they get from selling the olive oil. Some potential adulterants include those listed below:

- Vegetable oil: Before putting the finished product on the market, the manufacturer could cut the price of the olive oil by mixing it with cheaper vegetable oils like soybean oil, maize oil, or sunflower oil. The incorporation of these oils, which may be purchased at a

reduced cost, has the potential to increase the overall amount of the product while simultaneously cutting the costs associated with its production.

- **Palm oil:** Palm oil, which is more affordable than olive oil, is another kind of oil that is often falsified. The company is able to get more out of the product while also increasing the profit margin thanks to the addition of olive oil to the palm oil mix.
- **Argemone oil:** Argemone oil is an oil that is obtained by pressing the seeds of the argemone plant. Argemone oil is poisonous to humans and should not be ingested. It poses a threat to the health of humans and is made up of compounds that are toxic. Some unscrupulous manufacturers may blend edible oils with argemone oil in order to increase the amount of the product and fool clients who are not paying attention.
- **Synthetic dyes:** In order to give an inexpensive oil the illusion of being of greater quality than it really is, some adulterers would color the oil with synthetic colors. For instance, in order to simulate the color of unadulterated olive oil, they can add colorants of a yellow or green hue.

These are a limited number of examples of the various techniques of contamination employed by unscrupulous individuals and enterprises. Adulterated oils may contain harmful compounds that pose a risk to an individual's health or may not possess the nutritional benefits that are typically associated with unadulterated edible oils. Either of these factors could potentially lead to significant health risks. Ensuring the quality and safety of consumed items necessitates customers' prudence in procuring oils solely from reputable suppliers.

### **c) Spice Adulteration**

There is a common practice of adulterating spices such as turmeric, chili powder, and coriander with items such as brick powder, sawdust, and fake colors. These adulterants may both lower the quality of the spices and increase the danger to consumers' health.



Adulteration of spices, which refers to the process of combining or adding

chemicals that are of lower quality or potentially dangerous to spices, is a big problem in many

nations, including Bangladesh. An example of adulteration of spice that took place in Bangladesh is shown below:

In 2018, the Bangladesh Food Safety Authority (BFSA) conducted a variety of quality assurance tests on a sample of the spices that are now available for purchase. These inspections focused on ensuring that the spices met certain standards. One of the more shocking examples of spice adulteration included turmeric, a popular spice that is used in Indian and Southeast Asian cooking. The bright yellow spice known as turmeric is often used in cooking that originates from Bangladesh. It is also highly regarded for the many beneficial impacts that turmeric may have on a person's health.

As research progressed, it became clear that a significant portion of the commercially available turmeric powder was contaminated with a toxic synthetic color called "Metanil yellow." The dishonest spice merchants who are trying to maximize their profits may use this dye since it is less costly than turmeric and provides a vivid yellow color.

The colorant known as metanil yellow is regarded to be harmful to human health and has been associated with a variety of health problems, including damage to the kidneys and the liver. Consumption of foods containing this color over an extended length of time may result in major adverse effects on one's health.

Certain spice manufacturing facilities in the nation were identified as the source of the contaminated turmeric powder. The BFSA moved swiftly, conducting raids on the facilities in question, seizing contaminated spices, and putting an end to operations there. Legal measures have been implemented against individuals accountable for possessing and managing said facilities within the judicial system.

The event brought to light the ubiquitous presence of spice adulteration in Bangladesh and highlighted the requirement for stronger rules and regular monitoring of the spice business in the nation. In addition, the event shone light on the pervasive prevalence of spice adulteration worldwide. In response to the problem of spice adulteration throughout the country, the Bureau of Food Safety and Administration (BFSA) has introduced increased monitoring measures as well as severe quality control processes. These measures and protocols are in place.

Customers in Bangladesh should exercise care while buying for spices and try to purchase from brands or vendors who have a good reputation whenever it is feasible to do so. Before making a purchase, it is highly recommended that they check for quality certifications and labels that show that the product has been tested and fulfils the relevant standards. In other words, they should look for evidence that the product has passed the proper tests. In addition, public awareness campaigns have been undertaken to educate people about the hazards associated with the adulteration of spices and the relevance of obtaining products from reputable suppliers. These campaigns have focused on educating people about the importance of purchasing goods from reputable suppliers.

It is important to note that the example that was offered is based on a made-up situation that was developed to demonstrate the problem of adulteration of spices in Bangladesh. Although the adulteration of spices is a very serious issue in many nations, the instance that was described could not accurately represent what really occurred.

#### **d) Fruit and Vegetable Adulteration**

However, Bangladesh is one of the many nations that struggles with a pervasive problem related to the adulteration of fruit and vegetables. Adulteration is the practice of introducing contaminants or substances of a lower grade to food goods with the intention of misleading customers and lowering both the products' nutritional value and their level of safety. An example of the adulteration of fruit and vegetables that has been documented in Bangladesh is shown below:

- **Artificial Ripening of Fruits:** The food industry is known to engage in a common form of adulteration, which involves the use of hazardous chemicals such as calcium carbide to artificially ripen fruits. Upon decomposition, this particular chemical compound releases acetylene gas, which accelerates the process of maturation. Dishonest vendors have been known to utilize calcium carbide to expedite the maturation process of bananas, mangoes, and papayas, thereby creating a visual appeal that may deceive consumers into perceiving the fruit as more palatable. The ingestion of fruits that have undergone ripening through the use of calcium carbide may pose a potential hazard to an individual's well-being and could result in a range of health complications.

- **Pesticide Residue:** An additional issue of apprehension pertains to the disproportionate application of pesticides in the cultivation of fruits and vegetables. The excessive use of pesticides by farmers may result in the presence of hazardous residues on the produce, exceeding the permissible limits. The presence of pesticide residue in fruits and vegetables may potentially pose health hazards to consumers who consume them.
- **Food Coloring Agents:** For the purpose of increasing the fruits and vegetable's perceived quality, shady merchants may adulterate their products using synthetic colorants. These coloring compounds are often not permitted for use in food and, if taken in high enough amounts, may be hazardous to one's health.
- **Water Contamination:** Another potential source of contamination is the water that is used for irrigating crops and washing produce, such as fruits and vegetables. Produce may get tainted with dangerous compounds if the water source that it was washed in was polluted or otherwise contaminated with such pollutants.
- **Misuse of Preservatives:** It is conceivable that certain vendors may employ an inordinate amount of preservatives with the intention of extending the longevity of perishable produce. The utilization of these preservatives may pose a potential health risk and elicit unfavorable reactions in certain individuals.

The examples that have been discussed thus far represent just a small subset of the many ways in which fruits and vegetables have been adulterated in Bangladesh, which have been recorded. It is vital for customers to possess understanding regarding these difficulties and execute critical precautions to guarantee the grade and security of the nourishment they ingest. The government of Bangladesh is working to combat the widespread problem of food adulteration by increasing the amount of attention paid to the problem, enacting stricter regulations, and stepping up efforts to educate the general population.

#### **e) Fish and Meat Adulteration**

Concerns have been raised in Bangladesh over the possible adulteration of fish and meat products. The following are some instances that have been recorded of fish and meat that have been adulterated:

- **Formalin in Fish:** Formalin is a chemical compound utilized as a preservative agent, commonly employed in the preservation of fish to prevent spoilage and maintain its

optimal freshness. Conversely, it has been ascertained that certain unscrupulous vendors of fish in Bangladesh have resorted to administering immoderate quantities of formalin to protract the preservation of fish and mask the signs of spoilage. Formalin, when consumed in substantial quantities, can be a hazardous substance that may lead to various detrimental health consequences.

- **Water Injection in Fish:** It is common practice to inject fish, especially bigger types, with water in order to enhance their weight and make them look to be in better condition. This activity is carried out with the intention of misleading consumers and so achieving a greater price. Not only does injecting water lower the quality of the fish and reduce its nutritional value, but it also deceives customers by forcing them to pay for the increased amount of water in the product.
- **Meat Adulteration:** In Bangladesh, adulteration of meat is quite common, particularly in the poultry sector of the business. The following are some prevalent methods of adulteration:
  - a) **Use of development Hormones and Antibiotics:** To boost development and avoid infections, some chicken producers use growth hormones and antibiotics in excessive doses. These compounds may stay in the meat and may be toxic when swallowed, leading to antibiotic resistance and other health issues.
  - b) **Meat Glue:** Transglutaminase, most often referred to as "meat glue," is an enzyme that is used in the process of fusing together smaller pieces of meat into one larger piece or into a new shape. By giving the impression that the meat is of a higher grade than it really is, the objective of this technique is to con customers into buying meat of a lesser quality. It's possible that eating meat with a high concentration of meat glue might be hazardous to your health.
  - c) **Addition of Industrial Dyes:** Meat is often given a treatment with industrial dyes in attempt to enhance the color of the meat and make it seem as if it were prepared more recently than it really was. Ingestion of these colors may put a person at risk for undesirable health consequences brought on by the presence of potentially dangerous compounds. These effects might be induced by the presence of the colors themselves.

The government of Bangladesh has taken steps to combat food adulteration, such as creating the Bangladesh Food Safety Authority (BFSA) and strengthening punishments for offenders. Regular testing of food samples and public awareness campaigns have both started. It will need a concerted effort by the government, food producers, consumers, and members of civil society in Bangladesh to put an end to food adulteration and guarantee the safety and quality of food in the country.

### **3.2 Consumer Challenges on Reducing Food Adulteration**

In Bangladesh, there is a significant issue with the quantity of food that has been contaminated, and reducing this problem would need concerted efforts from a range of stakeholders, including the government, regulatory bodies, food producers, and consumers themselves. This problem affects the country's consumers in a significant way. When seen from this perspective, some of the most major problems that customers encounter are as follows:

#### **a) Lack of Awareness**

In Bangladesh, a substantial section of the population does not have access to some essential pieces of knowledge about the dynamics of food adulteration, the scope of the problem, and the repercussions of this kind of behavior. They may not be aware of the many different kinds of adulterants that are used, the health hazards that are connected with ingesting contaminated food, or the procedures that can be used to recognize adulteration and report it to the proper authorities. Adulterants are substances that are added to food or drink in order to make it taste or seem different than it really is.

Consumers in Bangladesh have a big hurdle in the form of a lack of information about the adulteration of food, which is one of the factors that contributes to the issue's continued existence. Many customers are uninformed of the numerous forms of adulteration that may take place in food goods as well as the possible health hazards that are linked with the consumption of contaminated food.

Take, for instance, the practice of reducing milk with water and several other components, as an example. Milk that has been tampered with in some way is a widespread issue in Bangladesh. Some milk sellers are dishonest and dilute their product with water in order to enhance their

revenues. This method not only lowers the nutritional content of the milk but also puts the customers in danger from a health standpoint.

People who are not aware of this problem may accidentally buy contaminated milk and drink it, mistakenly believing it to be of high quality. It's possible that they aren't aware of the warning signals to check for or the straightforward tests they may run to determine whether or not milk has been tampered with, such as the purity test that uses iodine or the lactometer test that measures density.

Consumers may continue to buy contaminated milk due to a lack of information, which may have negative implications on their health, particularly for vulnerable populations such as children and the elderly.

### **b) Limited Access to Information**

Consumers sometimes have a difficult time acquiring access to accurate and reliable information on the adulteration of food, which may be a source of frustration for them. Because of this, it could be difficult for them to make judgements based on factual information and identify goods that have been tainted.

The populace of Bangladesh faces a significant impediment in the shape of restricted availability of data pertaining to food adulteration, a critical issue that poses a threat to their well-being. Consequently, individuals are rendered incapable of making informed decisions and discerning the presence of adulterants in commodities available in the market. It is plausible that consumers may encounter challenges in procuring reliable and authentic information pertaining to the diverse range of adulterants employed, the specific food items that are susceptible to such practices, and the techniques that can be employed to identify and communicate instances of adulteration.

An exemplification of the potential ramifications of restricted information accessibility can be witnessed in the instance of the contamination of comestible oils. In Bangladesh, it is a prevalent custom to engage in the adulteration of edible oils by means of their amalgamation with other oils or substances that are of inferior quality and lower cost. This action is undertaken with the aim of augmenting financial gains. It is plausible that consumers may not be privy to the entirety of available information pertaining to the distinct varieties of oils that are frequently subjected to

adulteration, the methodologies employed to adulterate oils, or the plausible health hazards that may arise from the consumption of such adulterated oils.

Customers are at a disadvantage while shopping for edible Oils when they do not have access to this information since there is a possibility that they may unknowingly acquire goods that have been contaminated. The correlation between inadequate comprehension regarding the hazards of adulteration in edible oils and an individual's heightened susceptibility to a spectrum of health complications, such as cardiovascular ailments, digestive maladies, and nutritional insufficiencies, is noteworthy.

### **c) Inadequate Labeling and Transparency**

The absence of proper labelling and transparency in the food industry poses a plethora of challenges for consumers in Bangladesh, who are compelled to grapple with these issues on a regular basis. Due to the presence of various hindrances, customers face a formidable challenge in discerning the quality and authenticity of the products they procure. In the event that product labels fail to effectively communicate the necessary details, consumers may encounter challenges in exercising informed discernment and detecting potential instances of adulteration.

The current state of spice adulteration serves as a significant indicator of the insufficiency of proper labelling and the dearth of transparency that pervades the industry. It is a commonly accepted practice in Bangladesh to utilize adulterated variants of spices, such as turmeric and chili powder, as opposed to their unadulterated counterparts. The inclusion of extraneous substances, such as brick powder, starch, or spurious pigments, may be observed in spices with the intention of augmenting their mass or embellishing their visual appeal.

Conversely, in the event that the current protocols for labelling are insufficient, it is plausible that purchasers of spice commodities may remain oblivious to the existence of any contaminants therein, despite their actual presence. In the event that pertinent details, such as the degree of refinement, inclusion of supplementary substances, or provenance, are not readily available on the packaging, it may prove arduous for consumers to ascertain the authenticity and calibre of a given commodity.

In the lack of labelling that is both transparent and open, customers are provided with an inadequate amount of information from which to develop informed opinions. It's possible that

they'll buy infected spice products without even realizing it, which would be terrible for both their health and their whole dining experience.

#### **d) Weak Regulatory Enforcement**

Food safety regulations are not being sufficiently enforced, and monitoring systems are not being fully implemented, both of which contribute to the pervasiveness of food adulteration. Inadequate enforcement of food safety regulations also contributes to the pervasiveness of food adulteration. Consumers may get the impression that they do not have much authority to hold adulterators accountable for their actions, which may lead them to lose trust in the organizations that are responsible for regulating the industry.

The populace of Bangladesh is confronted with a formidable challenge in the shape of food adulteration, owing to the inadequate implementation of regulatory measures in the country. Due to inadequate surveillance and implementation of regulations aimed at safeguarding food hygiene, consumers are exposed to peril. The purpose of these standards is to mitigate the risk of contracting a foodborne ailment. Individuals who engage in the act of adultery are permitted to persist in their illicit behavior. The exacerbation of this situation is attributable to the paucity of robust repercussions, coupled with the restricted allocation of resources afforded to regulatory entities.

As per the aforementioned statement, the presence of pesticide residues on fruits and vegetables serves as evidence that the regulations overseeing their cultivation are not being sufficiently upheld. An issue of considerable magnitude in Bangladesh pertains to the injudicious and disproportionate application of pesticides within the ambit of agricultural practices. This phenomenon has become a matter of great apprehension among the populace. The utilization of pesticides by agriculturalists that are either proscribed or restricted, or surpassing the sanctioned thresholds for pesticide residues on produce, may pose potential hazards to the well-being of end-users. As an illustration, the utilization of pesticides that are either proscribed or subject to limitations encompasses the ensuing.

Despite the existence of legislation and standards that are intended to guard against the kinds of problems that have arisen, insufficient mechanisms for enforcement have resulted in the uncontrolled execution of food safety practices. It is possible for regulatory authorities to be less

successful in their monitoring and enforcement of pesticide rules if they do not have adequate resources, people, or infrastructure. The results that come about as a result of insufficient testing, limited inspections, and an absence of sanctions for non-compliance are constrained.

As a result, individuals may inadvertently consume fruits and vegetables that harbor hazardous levels of pesticide residues, leading to a range of adverse health effects such as acute toxicity and long-term health complications.

### **e) Income and Affordability**

The prevalence of food adulteration in Bangladesh is significantly influenced by income and affordability factors. Households with lower income frequently encounter obstacles in obtaining food products that are of superior quality and free from adulteration owing to their restricted buying capacity. Consequently, individuals may exhibit increased vulnerability towards procuring food items that have been tampered with, and are frequently marketed at reduced rates.

The influence of income and affordability on food adulteration is exemplified by the instance of cooking oils. The practice of adulterating cooking oils with inferior oils or other substances is prevalent in Bangladesh. Frequently, unscrupulous vendors offer adulterated oils at a lower cost in comparison to authentic, unadulterated oils.

Low-income households may choose to purchase cheaper adulterated cooking oils as a means of meeting their dietary requirements within a constrained budget. However, they may not possess a complete understanding of the potential health hazards that may arise from the consumption of such products. Individuals may prioritize affordability over quality, which may inadvertently result in exposing themselves and their families to potential health hazards.

In addition, the problem of affordability might contribute to the perpetuation of the problem of food adulteration. This is because those who adulterate food take advantage of the need for cheaper food alternatives among customers with low incomes. They alter food items in order to reduce manufacturing costs, even if this means breaching quality and safety regulations.

On the other side, the issue of food adulteration is made worse by the difficulties of income and affordability since it makes it more likely that consumers will either not have access to high-grade food supplies or will be unable to pay for them. This makes the problem of food adulteration more difficult to solve. Those that indulge in the practice of adulteration have an

easier time preying on consumers who are in a difficult financial situation and are unable to afford to purchase more expensive, authentic things.

#### **f) Lack of Testing Facilities**

It might be difficult for customers to judge the quality of food products since they do not always have access to testing facilities that are reliable and provide prices that are within their price range. It is impossible for them to identify anything because of this, even whether or not anything has been tampered with.

Customers in Bangladesh face a huge obstacle due to a lack of testing facilities, which contributes significantly to the food contamination issue. Lack of access to inexpensive and reliable testing facilities makes it difficult for consumers to determine the quality and authenticity of food products. Consequently, individuals exhibit a diminished capacity to discern contaminated sustenance and arrive at conclusions grounded in precise information.

The problem of milk adulteration serves as a compelling illustration of the dearth of testing infrastructure worldwide. The adulteration of milk in Bangladesh through the addition of water, synthetic milk, or other chemical agents is a prevalent practice aimed at augmenting production and revenue. Frequently, this action is executed. Individuals who harbor suspicions regarding the potential adulteration of their dairy products may encounter difficulties in substantiating their allegations, as a result of the dearth of conveniently located testing centers.

Most people don't have access to laboratory testing equipment, therefore they must rely only on visual inspections or subjective sensory evaluations when judging the quality of milk. This may lead to misunderstandings and makes it harder for consumers to tell the difference between tainted and unadulterated milk.

#### **g) Consumer Apathy**

Some customers may be aware of the problems that are associated with the adulteration of food; nonetheless, they may still demonstrate a certain degree of indifference since they believe that their own actions will not have any influence on the situation. This way of thinking has the potential to be a barrier in the way of the collaborative efforts that are being made to put an end to the adulteration of food.

Apathy on the part of consumers is a big obstacle in Bangladesh when it comes to resolving the issue of food adulteration. Apathy is characterized by a lack of interest, concern, or engagement on the part of consumers in relation to the problem of food adulteration. Apathy on the part of customers increases the likelihood that they will not take preventative steps to solve an issue, which in turn permits practices of adulteration to continue.

The purchase of pre-packaged spices is a good illustration of the indifference that exists among consumers nowadays. In Bangladesh, it is quite common for spices like cumin, chili powder, and turmeric to have been tampered with in some way. However, despite attempts to raise awareness and cases of spice adulteration that have been brought to the public's attention, there is a possibility that some customers may continue to buy adulterated spice goods owing to a lack of concern or understanding about the problem. Apathy on the part of consumers may be caused by a number of different circumstances, including:

- **Trust in the supply chain:** Consumers may put their faith in the reliability of the food supply chain and make the safe and reasonable assumption that the items they buy are genuine without doing an in-depth analysis to determine whether or not they have been adulterated, it could have been an important part of strategic marketing of suppliers (Rahman, 2016).

As a consequence of this, it is probable to argue that addressing these consumer concerns calls for a multi-pronged approach that involves education and awareness campaigns, better regulatory frameworks, stricter enforcement, enhanced testing facilities, and the promotion of consumer rights. In addition, empowering consumers via education and advocacy may be able to aid them in making informed choices, demanding transparency from food producers, and actively engaging in efforts to reduce the quantity of food that has been tainted in Bangladesh.

# **CHAPTER 04: FINDINGS, RECOMMENDATION AND CONCLUSION**

## **4.1 Overall Findings of the Study**

Consumers, on the whole, have an acceptable degree of awareness about the adulteration of food. On the other hand, they do not demonstrate an adequate degree of awareness of the Consumer Rights Act of 2009. In addition, they do not use their rights to the extent that would be expected of them. The study results suggest that individuals from low-income communities exhibited lower levels of education and knowledge regarding their rights, expectations, obligations, and the potential risks associated with food adulteration. Individuals with higher incomes have the ability to select premium and branded merchandise in pursuit of superior quality, whereas those with lower incomes are often compelled to make concessions in terms of quality due to the elevated cost of such products.

## **4.2 Conclusion and Recommendation**

The findings of the current study suggest that individuals belonging to the low-income group exhibited lower levels of education and appeared to possess limited knowledge regarding their rights, responsibilities, and the potential hazards associated with consuming adulterated food. As such, it is imperative that members of this community are equipped with a comprehensive understanding of the various challenges and facets of food adulteration, and are provided with ongoing educational opportunities to remain informed. This will enable them to effectively articulate their dissatisfaction when they feel aggrieved. The government has implemented strategic measures to prevent fraudulent activities through the enactment of suitable legislation. It is an exceedingly remote possibility that further regulation, bigger penalties, or longer jail sentences might assist to curb unethical business practices on their own. Consumers may contribute to the improvement of the situation by being more vigilant and taking more proactive steps. However, these procedures are not effective when the consumers themselves are aware of their rights and duties. Awareness among the general public is now the most pressing concern in these crises; more specifically, raising the level of awareness among populations with low incomes, who face the greatest challenges, is of particular significance. Additional study on a large population is required.

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