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İSTANBUL KÜLTÜR UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

ANALYZING CONSUMER BEHAVIOR IN STOCKPILING FOOD COMMODITIES DURING CRISIS: A CASE STUDY OF THE 2023 GAZA WAR

MASTER OF BUSINESS ADMINISTRATION THESIS

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Department: Business Administration

Program: Business Administration (English)(Thesis)

Supervisor: Assoc. Prof. Dr. Murat Taha BILIŞIK

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ABSTRACT

This study explores the behavior of stockpiling for food commodities during times of crises, with a focus on wheat flour as the subject of study during the ongoing Gaza War in 2023. Flour is considered one of the most crucial food items that residents of Gaza sought to stockpile, as it plays a vital role in ensuring food security and protecting against hunger. The study analyzes the economic, situational, social, and psychological factors influencing individuals' decisions to stockpile this commodity. A survey was used to collect data from citizens in different areas of the Gaza Strip, and the data was analyzed using the SPSS software. The results revealed a strong correlation between the studied factors and the decision to stockpile, indicating the importance of understanding these factors to predict consumer behavior during crises. Based on these findings, several recommendations were provided to improve stock management strategies and deal with future crises.

Keywords: Consumer Behavior, Stockpiling, Food Commodities, Food Security, Crisis, Gaza War 2023, Crisis Management, Economic Factors, Situational Factors, Social Factors, Psychological Factors

ÖZET

Bu çalışma, kriz zamanlarında temel gıda maddelerinin depolanması davranışını incelemekte olup, 2023 Gazze Savaşı sırasında buğday ununun stoklanması üzerine odaklanmaktadır. Un, Gazze halkının stoklamaya en çok yöneldiği temel gıda maddelerinden biri olarak kabul edilmekte; gıda güvenliğini sağlama ve açlığa karşı korunmada hayati bir rol oynamaktadır. Çalışmada bireylerin bu ürünü stoklama kararlarını etkileyen ekonomik, durumsal, sosyal ve psikolojik faktörler analiz edilmiştir. Gazze Şeridi'nin farklı bölgelerinde yaşayan vatandaşlardan anket yöntemiyle veri toplanmış ve elde edilen veriler SPSS programı kullanılarak analiz edilmiştir. Sonuçlar, incelenen faktörler ile stoklama kararı arasında güçlü bir ilişki olduğunu ortaya koymuştur. Bu durum, kriz dönemlerinde tüketici davranışlarını öngörebilmek adına bu faktörlerin anlaşılmasının önemini göstermektedir. Bulgulara dayanarak, stok yönetimi stratejilerini geliştirmek ve gelecekteki krizlerle daha etkili bir şekilde başa çıkmak için çeşitli öneriler sunulmuştur.

Anahtar Kelimeler: Tüketici Davranışı, Stoklama, Gıda Maddeleri, Gıda Güvenliği, Kriz, 2023 Gazze Savaşı, Kriz Yönetimi, Ekonomik Faktörler, Durumsal Faktörler, Sosyal Faktörler, Psikolojik Faktörler

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Completing this thesis has been more than just an academic achievement, it has been a journey of resilience, patience, and unwavering hope during one of the most difficult periods of my life.

I would like to express my deepest gratitude to my supervisor, dr. Murat Taha Bilişik, for his valuable guidance, continuous support, and insightful feedback throughout the stages of this research. Your encouragement and trust in my work have been deeply appreciated throughout this process.

I also thank my professors and the academic staff at Istanbul Kultur University, whose contributions throughout my studies have shaped my academic growth.

Though this journey unfolded under incredibly challenging personal circumstances amid the devastating war in Gaza and the painful loss of my sister and her family, I remained determined to see it through. I am truly grateful to everyone who offered me strength, compassion, and support along the way.

With gratitude,

Taghreed Alshafei

DEDICATION

To the memory of my beloved sister "Salam" and her family,
who lost their lives during the war in Gaza,
Though you are no longer with us,
your love, laughter, and strength will forever live in my heart.
your memory gave me strength when I needed it most.

To my family in Gaza,
whose resilience in the face of unimaginable pain continues to inspire me.
to your enduring spirit, and to the hope that never dies.

To my beloved husband and precious children,
your love is the light that guided me through my darkest days,
your presence is my greatest blessing,
and your faith in me gave me the strength to keep going.
This achievement is as much yours as it is mine.

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1 INTRODUCTION

1.1 Background

Many societies around the world face significant challenges during crises, whether caused by natural disasters, wars, or economic and social upheavals. These crises directly affect various systems, including economic and social structures, leading to disruptions in both local and global markets. A common consumer response during such crises is the stockpiling of essential goods, as individuals seek to secure their basic needs in the face of uncertainty brought on by crises.

The Gaza Strip is a notable example of a region that has been enduring ongoing crises, where the population suffers from the effects of the israeli blockade, along with severe economic and humanitarian challenges. Life in Gaza is marked by a scarcity of essential resources, a fragile local economy, high unemployment rates, and shortages of basic goods, disrupted supply chains, and inadequate responses to humanitarian needs. These challenges were exacerbated by repeated Israeli assaults, with the latest being the Gaza War of 2023, which caused significant damage to infrastructure and deepened the suffering of its residents.

During these crises, understanding consumer behavior and their priorities in stockpiling essential goods becomes crucial. This understanding helps stakeholders such as policymakers, distributors, and humanitarian organizations in planning the optimal distribution of goods and addressing the needs of the population effectively. This study aims to analyze the stockpiling behavior of consumers in Gaza during the 2023 war, focusing on the most important food commodity they prioritize and the factors influencing their decisions.

The study highlights the importance of understanding consumer behavior during crises as a fundamental step in supporting national and international efforts to manage crises more efficiently and reduce their negative impact on the population.

1.2 Problem Statement

Crises, especially wars, lead to significant disruptions in markets and consumer behavior, leading to changes in purchasing and stockpiling patterns. The ongoing Gaza war 2023 has severely impacted food security, causing widespread shortages and uncertainty. Among food commodities, flour stands out as a key ingredient that is stockpiled in large quantities by consumers during the war. Therefore, understanding the factors influencing flour stockpiling is essential to assessing its impact on market stability and consumer purchasing decisions. This study aims to analyze consumers' behavior in stockpiling flour during the crisis, by examining the economic, psychological, social, and situational factors that influence their decisions. It may contribute to providing recommendations that can help improve crisis management and ensure the stability of food supplies in the future.

1.3 Research Objectives

1.3.1 Main Objectives

Analysis of the factors influencing consumer behavior in stockpiling flour during Gaza war 2023, by studying economic, psychological, social, and situational factors and their impact on stockpiling decisions.

1.3.2 Specific Objectives

1- Analyze the impact of economic factors on flour stockpiling during the war.

2- Analyze the situational factors that influence consumer behavior in stockpiling flour, such as anxiety, fear, and uncertainty.

3- Explore the impact of social factors, such as family and community influence, on flour stockpiling decisions during the war.

4- Assess the impact of psychological factors, such as flour availability and rumors on flour stockpiling behavior.

5- Provide recommendations on consumer behavior during crises to help develop more efficient policies for managing essential resources.

1.4 Research Questions

The study will address the following key research questions:

1 - Do economic factors affect consumers' behavior in stockpiling food commodities during the war?

2 - Do situational factors affect consumers' behavior in stockpiling food commodities during the war?

3 - Do social factors affect consumers' behavior in stockpiling food commodities during the war?

4 - Do psychological factors affect consumers' behavior in stockpiling food commodities during the war?

1.5 Significance of the Study

1.5.1 For the public

1. The study gains its importance as it addresses a topic that can impact any community during times of crisis and wars. Stockpiling essential goods poses significant challenges during crises, as fluctuations in supply and demand directly impact affected communities. In the context of the 2023 Gaza War, understanding which goods consumers prioritize and how the war impacts these behaviors helps the community adapt to emergency conditions.

2. There is a scarcity of studies on this topic. Despite the importance of stockpiling behavior during crises, studies focusing on this behavior in the context of wars are rare. This research fills a critical gap in understanding consumer behavior in such circumstances.

3. The study serves as a starting point for researchers interested in understanding consumer behavior during crises. This research provides the foundation for deeper studies into consumer behavior related to stockpiling during wars and emergencies, guiding future research on crisis management.

1.5.2 For Policymakers

1. The findings of this study serve as a reference for policymakers in planning preparedness and response strategies. Understanding stockpiling behavior during crises will help policymakers such as the governmental agencies, Regulatory Authorities, distributers and

international and local NGOs, plan and distribute essential goods more effectively during wars and emergencies.

2. Understanding the dynamics of stockpiling helps distributors and policymakers determine how to allocate and display goods in markets effectively for better planning to meet the demands of affected populations.

3. To support cooperative associations and humanitarian organizations in distributing essential goods to vulnerable populations.

1.5.3 For the Researcher

1. This study equips the researcher with tools to study consumer behavior during crises. It provides a deeper understanding of how consumer preferences and behaviors shift in times of wars, enabling the researcher to develop a framework for analyzing similar situations in other regions or future crises.

2. The research satisfies the researcher's curiosity about crisis behavior. It offers scientific insights into many factors such as the psychological and economic factors that drive stockpiling.

1.6 Scope and Limitations

This study aims to understand stockpiling behavior among consumers in the Gaza Strip during the 2023 Gaza War. It will specifically focus on flour item and identifying the factors influencing their decisions to stockpile. The research analyzes consumer behavior by collecting data through surveys from residents of Gaza, exploring how the ongoing war and limited access to goods have shaped consumer stockpiling decision.

While this study aims to provide valuable findings, it is subject to several limitations:

1. Geographical Scope: The research will be limited to the Gaza Strip, and findings may have limited generalizability beyond the Gaza Strip.

2. Time Frame: The study will focus solely on the period of the 2023 Gaza War, without extending to pre-war behavior or long-term trends.
3. Data Collection: Data will be gathered through surveys from Gaza residents, which may introduce biases due to the availability and willingness of participants to share their experiences during such a sensitive and difficult time.
4. Sample Size: The study will analyze a sample of Gaza residents to identify broader trends, but it may not fully capture all demographic or regional variations within the population.

1.7 Hypothesis

1.7.1 Main hypothesis (H)

There are several factors that affect consumer behavior in stockpiling flour during crisis.

1.7.2 Sub-hypotheses

Many sub hypotheses branch out from the main hypothesis:

1. First sub-hypothesis (H1): Economic factors greatly affect consumer behavior in stockpiling food commodities during crisis.

2. Second sub-hypothesis (H2): Situational factors greatly affect consumer behavior in stockpiling food commodities during crisis.

3. Third sub-hypothesis (H3): Social factors greatly affect consumer behavior in stockpiling food commodities during crisis.

4. Fourth sub-hypothesis (H4): Psychological factors greatly affect consumer behavior in stockpiling food commodities during crisis.

5. Fifth sub-hypothesis (H5): There are differences in consumer responses attributed to personal characteristics towards the factors affecting the stockpiling food commodities.

1.8 Research Method

- This study uses the descriptive-analytical method, which involves collecting data on consumer behavior in stockpiling flour during the 2023 Gaza war and analyzing it.

1.9 Sources of information

This study relies on a variety of sources to ensure accuracy and comprehensiveness in analyzing the phenomenon of stockpiling. Information was collected from:

- Theoretical sources: include books, research papers, academic references, and previous studies to formulate the theoretical aspect.

- Official reports and statistics: Reports and statistics issued by governmental and international organizations and institutions concerned with food security and the reality of Gaza were used.

1.10 Previous Studies

To achieve the study's objectives, the researcher reviewed the previous literature written on the subject relevant to the study, as follows:

1- ***Psychological factors and consumer behavior during the COVID-19 pandemic*** *(Di Crosta et al., 2021):*

It was a study that aimed to examine changes in consumer behavior and their psychological antecedents during the lockdown period due to the COVID-19 pandemic. A total of 4121 participants. Considering "Changes in General spending", the results showed that the sample reported, on average, an increase of 60.48% in the general spending level during the first week of lockdown. Furthermore, significant differences between "Changes in Necessities spending" and "Changes in Non-necessities spending", were detected. Indeed, the spending level for necessities products showed an increase of 90.69%, while for non-necessities products, the average increase was only 36.11% The results of the correlation analyses indicated that there was a significant positive association between "Changes in necessities spending" and

"Necessities". Furthermore, a significant positive association was highlighted between "Changes in non-necessities spending" and "non-necessities". Therefore, people's changes in spending levels were related to their attitudes and feelings toward specific products. This finding supported the choice to investigate the psychological underpinnings of people's consumer behavior.

2- ***Consumer food stockpiling behavior and willingness to pay for food reserves in COVID-19*** *(Wang et al., 2020)**:***

Analyzed changes in consumer food stockpiling behavior during crises by collecting 1,188 valid samples from various regions in China during the COVID-19 pandemic. The findings showed that the pandemic led many households to stockpile food and increase their reserves of fresh products. The average food stockpile increased from 3.37 days before the outbreak to 7.37 days after it. These results indicate that food demand rises significantly during crises, this suggests that during emergencies, food demand can surge rapidly, requiring governments and policymakers to adapt food supply levels and implement strategies to manage demand shock.

3- ***The impact of the global price crisis during the Russian-Ukrainian war on the purchasing behavior of the Egyptian consumer*** (Ben Hassen & El Bilali, 2022)***:***

The research aimed to study the impact of the global price crisis during the Russian-Ukrainian war on the purchasing behavior of the Egyptian consumer, explain the correlation between some of the social and economic variables of the study and both the global price crisis during the Russian-Ukrainian war in its dimensions and the purchasing behavior of the Egyptian consumer in its dimensions. The research sample included 1080 men and women. The most influential variable affected the purchasing behavior of the Egyptian consumer was the number of family members, then the monthly income of the family, and the educational level. The study recommended the necessity of urging the Consumer Protection Agency to take all measures to control prices, ensure the availability of all goods, and prevent the monopoly of the trade in goods.

4- ***Factor affecting panic behavior during crisis***(Karim ben Othman & Kemal alayeb, 2021)

The study sought to identify the factors affecting panic buying among Algerian consumers during the Corona crisis, by applying it to a sample of 381 consumers. The study showed that several factors affect panic buying among consumers, and they were as follows: the most influential elements in panic buying behavior during Corona are social and cultural factors, followed by psychological factors, and finally the situational and marketing factors.

5- ***The COVID-19 Pandemic and the Antecedents for the Impulse Buying Behavior of US Citizens. Journal of Competitiveness****(Ahmed et al., 2020)*

As for (Ahmed et al,2020), they tried to identify the motives for purchasing during the Corona crisis, by applying it to a sample of 889 American consumers to stand on the fluctuations caused by the crisis in consumer behavior. The results showed that fear of closure, scarcity of products, and panic are the main group of reasons that helped create a state of panic buying, as well as the rumors circulating on social media sites are a primary driver of impulsive buying.

1.11 Commentary on Previous Studies

After reviewing the previous studies, the researcher finds that all of them hold exceptionally high academic value and have contributed to providing practical solutions for understanding consumer behavior during crises. They have also offered recommendations and suggestions for policymakers in the studied countries. All previous studies have analyzed consumer behavior and the changes it undergoes during crises, focusing on the factors influencing such behavior.

The researcher has benefited greatly from reviewing these studies, as they have helped in forming a comprehensive understanding of the research topic, determining how to approach it, and clearly defining its objectives. Additionally, these studies have played a crucial role in selecting the appropriate research methodology, identifying the suitable statistical model, and determining the necessary tools and techniques for data collection and analysis.

1.12 Key Agreements with Previous Studies

This study aligns with previous research in analyzing consumer behavior during crises and understanding the factors influencing this behavior during emergencies and crises. It also shares similarities with some studies in its research methodology and in deriving recommendations based on understanding changes in consumer behavior to mitigate the impact of crises and develop effective emergency response strategies.

1.13 Research Gap & What Sets This Study Apart from Previous Research

Analyzing consumer behavior during crises is a scientific approach that has gained prominence, especially during several disasters, with the most notable being the COVID-19 pandemic. Many studies have been conducted in various countries around the world. However, since each crisis has its own unique nature, what applies to one crisis, such as the COVID-19 pandemic, does not necessarily align with other crises, such as the Russian-Ukrainian war.

Although there are many studies that have analyzed consumer behavior in different crises, very few if any have examined this behavior under the extreme and compounded conditions currently unfolding in Gaza. The current war has created a unique and exceptionally harsh environment marked by siege, destruction, famine, and a complete breakdown of infrastructure. Consumer behavior has not been tested under such intense and life-threatening conditions, making this study one of the first to examine food stockpiling as a behavioral response to circumstances that are nearly unimaginable. This context helps to understand how people act when access to basic goods becomes a matter of survival, not just preference or precaution. By framing stockpiling as a survival-driven behavior under such exceptional pressure, this research contributes new insight to the literature and provides a foundation for better preparedness in similarly extreme future scenarios.

This study offers several recommendations that contribute to improving the efficiency of preparedness and emergency response plans, thus enhancing the ability to better manage crises.

2 LITERATURE REVIEW

2.1 Introduction

The literature review serves as a cornerstone of this thesis, offering a detailed examination of existing research to establish a clear foundation for the study. This section aims to explore consumer behavior during crises, with a specific focus on the phenomenon of stockpiling flour.

Crises whether economic, political, or humanitarian have a profound impact on consumer behavior. These events often trigger fear, uncertainty, and a heightened sense of urgency, leading individuals to adopt unique purchasing patterns that deviate from their usual behavior. Stockpiling food commodities is one such pattern, driven by the need to secure food and reduce perceived risks associated with shortages. Understanding these behaviors is critical, not only for consumers themselves but also for markets and policymakers striving to manage the ripple effects on supply chains and pricing structures.

In this chapter, I started by explaining many concepts, starting with crises, explaining their definition, types, and characteristics. Then I moved on to talk about basic commodities, focusing on food commodities and the status of the food market in Gaza during the war 2023. After that, I discussed the concept of food security and the reality of food security in Gaza during the war. Finally, I discussed consumer behavior, explaining the factors that affect it, and how it changes during crises, focusing on flour stockpiling behavior during the Gaza war 2023.

2.2 Crises

2.2.1 Definition and General Concepts

(Brown, 1998)described the original meaning of the word as a situation where critical decisions must be made within a short timeframe. Merriam-Webster defines a crisis as a situation or period of instability in which making decisions becomes challenging (merriam webster, 2024)
(Darling, 1994)characterized a crisis as a state of panic, fear, danger, or shock. Similarly,(الشعلان, 2002) referred to a crisis as "a critical situation that can lead to adverse outcomes." Another notable definition is provided by Mohsen Al-Khodairy in his book *Crisis Management*, where he defines

a crisis as "a situation or state faced by a decision-maker in any administrative entity (such as a state, institution, project, or family) where events escalate, causes intertwine with outcomes, and the decision-maker loses control over the situation or its future direction"(الخضيري, 1997)

2.2.2 Types of Crises

Crises can be classified into several categories as follow:

1- Based on their causes:

- Man-Made Crises: These crises are directly caused by human actions, such as environmental pollution (chemical causes), wars or conflicts.
- Natural Crises: These arise from natural phenomena, including earthquakes, hurricanes, and droughts.
- Hybrid Crises: These occur when both natural and human factors contribute to the crisis. For example, the famine in Somalia resulted from drought (a natural factor) combined with civil war (a human factor). (Carter, 2008)

2- Based on Type and Scope of the Crisis:
Crises can occur in different fields, such as economic, political, social, and environmental. For example, an environmental crisis refers to issues like pollution or natural disasters. Within each type, subcategories can emerge, such as financial crises within the broader category of economic crises(أحمد ماهر, 2011)

3- Based on Geographical Scope of the Crisis:
Using geography as a criterion, crises can be classified as local, affecting a limited area or a single city, international, involving multiple countries, or global, such as worldwide economic downturns that impact the entire world (أحمد ماهر, 2011)

4- Based on Nature of the Threat:
Crises can vary depending on the nature of the threat they pose. External threats often arise from economic pressures or competitive forces outside the organization, whereas internal threats typically originate from administrative mistakes, technical failures, or

problems within the workplace environment.(أحمد ماهر, 2011)

5- Parties Involved in the Crisis:

This classification is generally used for crises at the state level and is based on the nature of the parties involved. Internal crises stem from domestic political or social dynamics, whereas external crises arise from international conflicts or challenges that threaten a nation's sovereignty.(أحمد ماهر, 2011)

6- Based on Size of the Crisis:

Crises can range from small, affecting a specific organization or institution, to medium or large-scale crises with broader impacts. The size is often measured in terms of tangible losses, such as financial damage from a traffic incident or a power outage. Intangible factors, such as damage to public perception or a society's image, also play a role in determining the crisis's size (Gunasekaran et al., 2014)

7- Based on Duration and Evolution of the Crisis:

Crises can be categorized into two types based on their timeline:

- Explosive and Rapid Crises: These emerge abruptly, intensify swiftly, and are typically resolved within a short timeframe. Their outcomes largely depend on the effectiveness of the crisis management response.

- Gradual and Prolonged Crises: These evolve gradually, often preceded by warning signs that may be ignored or misinterpreted. They tend to last for extended periods and can present enduring challenges to organizations or societies. (Gunasekaran et al., 2014)

2.2.3 Characteristics of a Crisis

A crisis is defined by several essential characteristics, including:

- Unpredictability and suddenness: Crises typically emerge without warning, leading to confusion and inaction. They are often accompanied by heightened emotions such as fear, anxiety, and panic due to the rapid and intense progression of events.

- Imminent and escalating danger: Crises present serious risks to both lives and property, contributing to social unrest and instability. The situation is often worsened by the spread of rumors and growing pressure on decision-makers.

- Time sensitivity: Time becomes a crucial element during a crisis, with decisions needing to be made in very short timeframes. This urgency adds to the complexity and sensitivity of the situation.

- Uncertainty: Crises are often surrounded by unclear boundaries and unpredictable durations, making it extremely difficult to plan, allocate resources, or implement effective actions. (العماري, 1993)

2.2.4 The Stages of a Crisis

A crisis typically unfolds through five sequential and interconnected stages, each building upon the previous one and none of which can be skipped:

1. Birth and Emergence Stage

This is the initial warning phase, where early signs of the crisis begin to surface as vague and undefined threats. Due to limited information, the situation may feel uncertain. However, proactive decision-makers can often identify and intervene at this point, potentially neutralizing the crisis entirely or at least delaying its development until better control is established.

2. Growth Stage

If the early signs are ignored or mismanaged, the crisis begins to grow, driven by both internal and external factors. It becomes increasingly visible, and the mounting pressure forces decision-makers to acknowledge its presence.

3. Maturity Stage

At this point, the crisis reaches its most intense and dangerous phase. The factors fueling it become highly destructive, making it more difficult to manage. The severity typically results from weak planning, poor responses, or a lack of understanding of the crisis's full scope.

4. Decline Stage

Following a peak of intense confrontation, the crisis begins to weaken as much of its energy is expended. Although its influence diminishes gradually, decision-makers must remain vigilant to prevent a resurgence triggered by new or lingering factors.

5. Disappearance Stage

In this final phase, the crisis loses all of its driving forces, leading to the complete disappearance of its effects and manifestations. (1997 ,الخضيري).

2.2.5 Crises Management

The definition of crisis management can vary across countries, depending on the level of turbulence in different situations around the world (Eliasson & Kreuter, 2000) . (Paraskevas, 2006)notes that the word "crisis" originates from the Greek term "krisis," which translates to "choice" or "decision" in English. This suggests that there is no single solution to a crisis, as both decisions and choices are involved. These situations require a trade-off between critical options and appropriate action, making strategic planning essential. Since there are right and wrong ways

to respond to a crisis, managing it effectively must be planned and structured. So, Crisis management is generally understood as a set of strategies and actions to help a business navigate through a crisis and regain stability (Zuzak & Konigova, 2009).

Crisis management, therefore, refers to the application of scientific and administrative tools to overcome crises, mitigate their negative effects, and leverage their potential positive outcomes (الخضيري, 1997). Alternatively, it can be defined as a specialized process aimed at producing a strategic response to crises through a pre-selected and highly trained team of administrators. These individuals employ their skills and specific procedures to minimize losses as much as possible (عليوة, 2004)

Given that a crisis is an emergency or sudden event that spirals beyond control, disrupting regular operations or even halting them entirely, and posing a significant and direct threat to an organization, crisis management revolves around immediate action. This involves clear preparedness and response plans designed to weaken, contain, and neutralize the crisis, stripping it of its momentum. In essence, crisis management is a system designed to handle crises by preventing their occurrence when possible and preparing for those that cannot be avoided or predicted. The primary goal is to control outcomes and minimize the destructive effects of such events. This system relies on specialized techniques, methods, and administrative processes developed at minimal economic cost, enabling organizations to function effectively under extraordinary circumstances. A robust crisis management system must include a response plan with early warning indicators, leveraging all available expertise without disrupting daily operations (الشعلان, 2002).

Anderson outlined four crisis management strategies, each corresponding to a different phase in the crisis lifecycle:

- **Prevention**: This strategy is used at the earliest stage, aiming to stop a crisis before it begins by anticipating warning signs. It focuses on identifying and removing the underlying causes of potential crises. However, it may not be effective for natural disasters.
- **Preparedness**: This involves developing a response plan in advance, including anticipating possible scenarios, forming a dedicated crisis response team, and ensuring they are properly

trained and informed. Regular drills are essential to evaluate the plan's effectiveness, detect weaknesses, and test the team's readiness.

- **Response**: Activated during the height of a crisis, this strategy aims to minimize harm to people and property. It involves putting the preparedness plan into action through the crisis management team to ensure a swift and organized reaction.
- **Recovery**: Implemented once the crisis has passed, this phase focuses on mitigating its long-term impacts. It includes analyzing the crisis to gather insights and lessons learned, which can help prevent similar events in the future or improve responses to unavoidable crises like natural disasters. (Anderson & Stulz, 2017)

2.2.6 The 2023 Gaza War

More than one and half year into the 2023 Gaza war, the humanitarian crisis has escalated to catastrophic levels, marked by an unprecedented toll on human lives, extensive destruction, and acute food insecurity. Mass displacement and a lack of safe havens, exacerbated by israeli restrictions on aid delivery, have intensified the crisis further.

The war has severely disrupted key sectors, including education, healthcare, social services, the economy, and the environment. Educational institutions have experienced devastating losses. The healthcare system is on the verge of collapse, grappling with critical shortages of medical supplies and rampant malnutrition, particularly among children. Social services have been drastically reduced, leaving most individuals without essential support. Meanwhile, the long-term environmental consequences of the war remain uncertain and could take generations to fully assess and address. What further reflects and confirms this grim reality is the statement made in May 2024, Samantha Power, the head of USAID, who described the situation in Gaza as being "worse than it has ever been"(TARA SUTER, 2024). Also, several organizations, including Doctors Without Borders, the Red Cross, and a coalition of UNICEF, the World Health Organization, the UN Development Program, the United Nations Population Fund, and the World Food Program, have issued warnings about an impending humanitarian collapse.

The data from the Food and Agriculture Organization of the United Nations (FAO) indicates that all households, without exception, are skipping meals daily. Adults are rationing their portions to ensure that children can eat. In the northern governorates, individuals in nearly two-thirds of households went entire days and nights without food at least ten times during the month. The FAO has repeatedly called for urgent measures to save the population in Gaza. In November 2023, Director-General Qu Dongyu called for an immediate humanitarian ceasefire in Gaza to alleviate civilian suffering and facilitate the delivery of urgent aid. Again, in March 2024, he expressed the FAO's deep concern in a statement during an event organized by the Italian government, stating. (FAO, 2024)

The escalation of hostilities has severed water, food, and fuel supplies, leading to the collapse of all food-related sectors, including vegetable production, livestock, fisheries, and aquaculture. Between 60% and 70% of livestock used for meat and dairy production in Gaza has either perished or been prematurely slaughtered to meet the urgent food needs caused by the war (United Nations, 2024). The FAO also expressed grave concern over the significant losses in livestock, which are essential for livelihoods and the survival of families in Gaza. Providing animal feed is not merely a means to sustain rural livelihoods or an economic asset for affected families. Preserving the lives and productivity of animals owned by households offers a critical source of protein, nutrition, and milk—indispensable elements, particularly for children.

2.3 Basic commodities

2.3.1 Definition of basic commodities

Basic commodities are goods that are fundamental to daily life and are widely used across various industries. According to Merriam-Webster, a commodity is defined as an economic good, typically produced through agriculture or mining. These commodities, such as grains or minerals, are essential products that can be exchanged in the market. In particular, agricultural commodities like grain, corn, and other staples are considered vital resources for fulfilling basic needs (Merriam Webster)

Commodities are often raw materials or agricultural products that are produced in large quantities by numerous independent producers. They are typically traded in bulk, and their prices are influenced by supply and demand dynamics in the global marketplace. Factors such as weather conditions, geopolitical events, and supply-side shocks (e.g., wars or natural disasters) play a significant role in determining their market prices. Examples of commonly traded commodities include energy products such as oil and natural gas, metals like gold and copper, and agricultural goods like wheat and coffee (LEHMAN BROTHERS, 2008)

2.3.2 Food commodities

Any agricultural product or food item that is normally grown, harvested, or produced for commercial sale and consumption is referred to as a food commodity. These commodities are frequently unprocessed goods or raw materials that are traded in bulk and used as direct consumption or as inputs for other production processes (LEHMAN BROTHERS, 2008)

Food commodities include, for example:

- Grains include corn, rice, wheat, and oats.
- Bananas, apples, tomatoes, and potatoes are examples of fruits and vegetables.
- Meat and animal products: chicken, beef, eggs, and milk.
- Two essential commodities in the beverage and sweetening sectors are sugar and coffee.
- Oilseeds: seeds used to extract oil, such as sunflower and soybean seeds.

(United States Department of Agriculture)

2.3.3 The Food Commodity Market in Gaza During the 2023 War

The continuous bombing of farmland, food factories, and the restrictions on humanitarian aid entering Gaza have led to a sharp depletion of food stocks. Estimates indicate that the food entering Gaza covered only about 7% of the population’s needs (Margaret Besheer, 2023). Additionally, there was a general shortage of food commodities across Gaza's markets: as of November 17, 2023,

northern Gaza had no access to food for over 10 days. In southern Gaza, the only functioning flour mill was bombed on November 15, 2023, while only a few bakeries were operating intermittently (Oleg Bilukha et al., 2023).

Furthermore, food prices soared to unprecedented levels due to the severe shortage of food supplies. By November 17, 2023, the price of wheat flour had increased by 65%, bottled water by 100%, and vegetables by 32%. At the time, the war was still in its early stages. The ongoing decline in food production has led to continuous price hikes and market instability, further increasing reliance on humanitarian aid. However, the scarcity of such aid, due to restrictions on its entry, has exacerbated the disruption of food commodity markets. (world food program, 2023)

In the following figure, some prices of essential items before and during the war are illustrated, showing a significant increase in prices when available, as many of these items were completely absent from the markets at times.

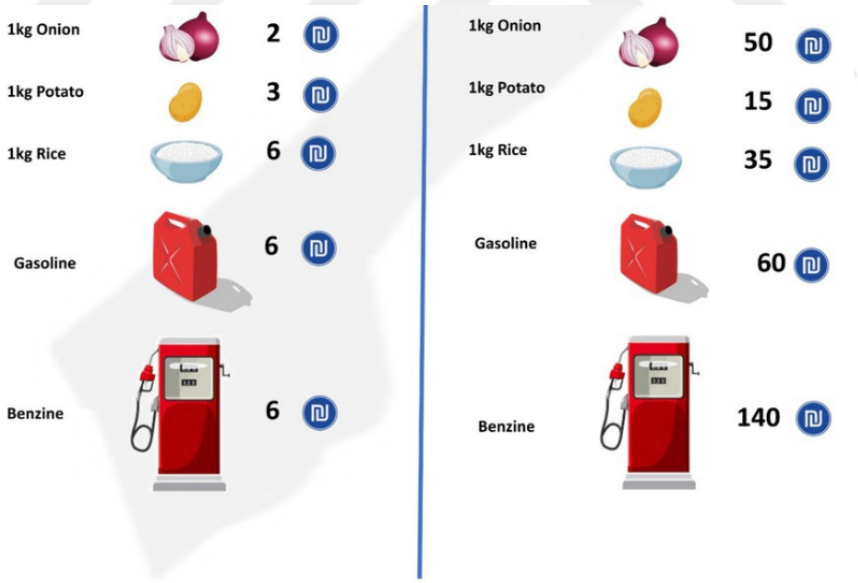

Figure 1 Prices of some items before and during the ongoing war on Gaza (Hassoun et al., 2024)

2.3.4 Flour: A Basic Food Commodity

Flour is a powder made by grinding grains like wheat, barley, corn, rice, and oats. It's a key ingredient in many foods, especially in baking bread and other baked goods (Oxford English

Dictionary).The most used flour is wheat flour, which is rich in proteins like gluten. Gluten gives dough its elasticity, helping it trap gas bubbles during baking and creating a soft, airy texture in the final product (Oxford English Dictionary). Flour comes in different types, such as white flour and whole wheat flour, depending on how much of the grain is included during the milling process. Wheat, and especially wheat flour, is one of the most important natural foods humans have relied on throughout history. In ancient times, people created stone tools to grind wheat and extract flour. Nowadays, advanced machines are used for this purpose (Wikipedia).

2.4 Food Security

2.4.1 Introduction

Food has always been one of the most fundamental human needs, serving not only as a basic requirement for survival but also as a critical factor in ensuring social and economic stability. Since the earliest stages of human existence, the search for food has driven much of human behavior from the pursuit of wild plants and animals to the invention of tools and the establishment of agricultural practices. As people sought to secure reliable sources of nourishment, they gradually developed systems for food production, preservation, and exchange. This pursuit of nourishment has transcended mere biological necessity; it has been a central motivator in the evolution of human civilization, influencing migration patterns, settlement choices, and community organization. Fertile lands, abundant water resources, and favorable climates often determined where early populations chose to live, ultimately laying the foundation for the first stable societies.

From ancient civilizations to modern times, humans have consistently depended on a varied and balanced diet to meet their physiological needs. Essential nutrients such as carbohydrates, fats, proteins, vitamins, and minerals are required to fuel the body, support growth, and maintain immune function. To achieve this dietary diversity, communities throughout history engaged in a range of food-related activities. Farming, herding, hunting, and gathering provided access to local food sources, while trade and bartering enabled the acquisition of goods that were not readily

available within a particular region. This system of mutual reliance between individuals and communities not only enhanced dietary options but also fostered cooperation and social cohesion, both of which were vital for long-term survival.

In more recent decades, especially since the mid-1980s, global food availability has improved significantly due to advances in agricultural technology and practices. The widespread use of chemical fertilizers and pesticides, the mechanization of farming, and the promotion of sustainable and organic methods have all contributed to increased productivity and food supply. However, despite these achievements, food security remains a global challenge. A complex array of factors including soil degradation, freshwater scarcity, erratic climate patterns, population displacement due to conflict, rapid urbanization, and disruptions in trade and transport continue to pose serious threats to the stability of food systems worldwide. Addressing these interconnected challenges requires coordinated efforts and innovative strategies that emphasize both sustainable production and fair distribution. Only through such comprehensive approaches can the global community ensure that nutritious, safe, and sufficient food is available to all especially in times of crisis or humanitarian emergency. The Food and Agriculture Organization (FAO) of the United Nations reported that in 2023, between 713 and 757 million people suffered from undernourishment. Taking the average (733 million people) into account, the number of undernourished individuals increased by approximately 152 million compared to 2019 (FAO, 2024).

As shown in the following figure, hunger in the world increased sharply from 2019 to 2021 and remained at the same level until 2023. Where the orange line represents the prevalence of undernourishment as a percentage of the population, while the grey line represents the total number of undernourished people in millions.

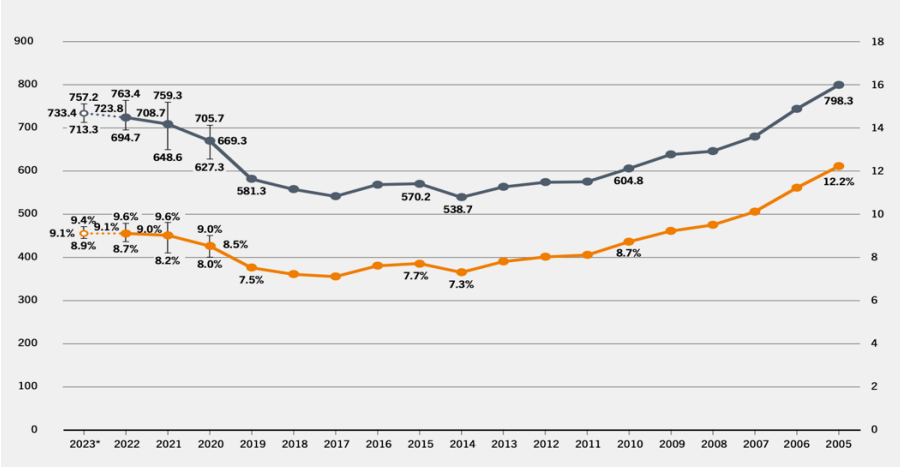

Figure 2 World Food Shortage 2005-2023
(Integrated Food Security Phase Classification, 2024)

2.4.2 Concept of Food Security

Food security, as defined by the Food and Agriculture Organization (FAO) and other international organizations, involves ensuring consistent physical, social, and economic access to adequate, safe, and nutritious food for everyone at all times (FAO, 2020). Achieving this goal requires addressing six key pillars: availability, access, utilization, stability, agency, and sustainability, all of which must be fulfilled concurrently (Ben Hassen & El Bilali, 2022; Boyacı-Gündüz et al., 2021)

Food insecurity occurs when individuals do not have reliable access or control over adequate quantities of safe and nutritious food required for healthy growth and development (GRFC, 2023)

2.4.3 The reality of food security in Gaza during the 2023 war

By late 2023 and early 2024, the Gaza Strip was facing extreme levels of hunger and food insecurity. Reports from the World Food Program and United Nations officials painted a grim picture, with food supplies nearly depleted, bakeries destroyed by israeli airstrikes, and access to basic food becoming increasingly limited (Usaid Siddiqui et al., 2023).

Long queues for bread were a common sight, signaling the worsening crisis (Joseph Stepansky et al., 2023). As the war continued, Gaza was pushed to the verge of famine. International aid organizations raised alarms about mass starvation, with most households unable to meet their food needs and many resorting to desperate measures to survive(Hazem Balousha et al., 2023) . Human Rights Watch accused Israel of using starvation as a weapon in the occupied territory, further intensifying the humanitarian disaster (Human Rights Watch, 2023)

By early 2024, the Gaza Strip was experiencing one of the most severe cases of man-made starvation in a century (Liam Stack et al., 2024) .The chief economist at the World Food Program highlighted that the majority of those facing famine or extreme hunger worldwide were in Gaza, underscoring the severity of the crisis (Isaac Chotiner, 2024).

With food stocks exhausted and food prices soaring, the population continued to suffer, with children being especially vulnerable to malnutrition and dehydration (Mark Weiss, 2024). The international community expressed deep concern, recognizing the looming threat of starvation and emphasizing the urgent need for humanitarian aid to prevent further tragedy. Approximately 2.2 million people in Gaza were reported to be facing food insecurity at an emergency level (British Red Cross, 2024).

The independent and globally recognized Food Security Phase Classification (IPC) has reported that 1,044,353 people in Gaza are experiencing crisis-level food insecurity (Level 3), 663,721 are facing emergency levels (Level 4), and 132,987 are enduring catastrophic levels (Level 5) of food insecurity, this data is based on statistics from September to October 2024. As shown in the figure below:

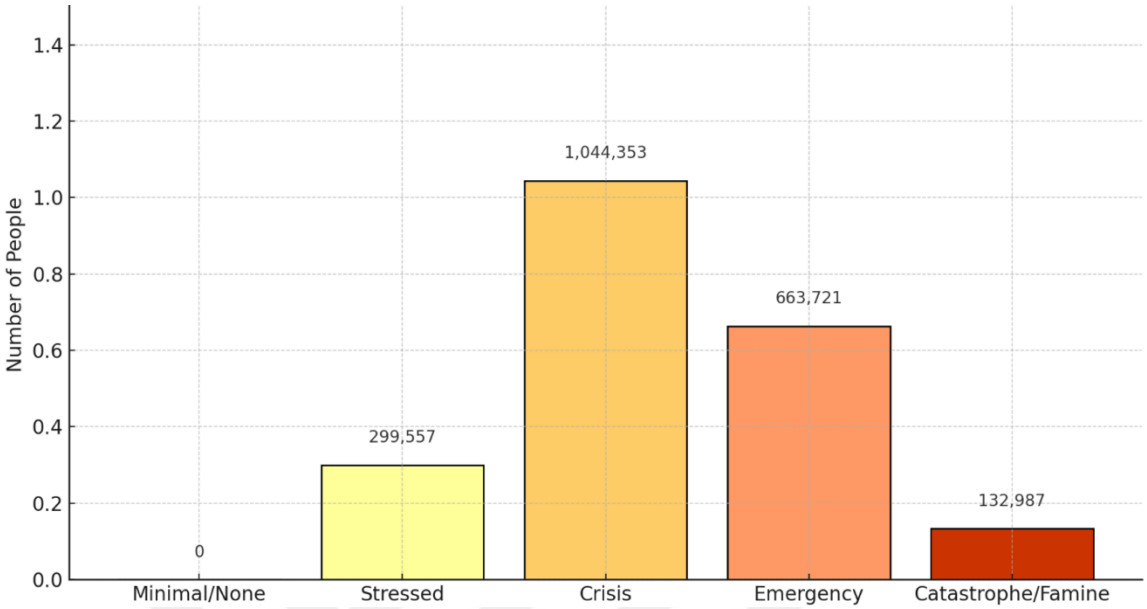

Figure 3 Food Security Level in Gaza, IPC Classification

(Integrated Food Security Phase Classification, 2024)

The besieged Gaza has faced severe restrictions on food supplies due to the closure of border crossings connecting it to the outside world. Families forced to flee northern Gaza during the war were left without access to food, transportation, water, or shelter. Meanwhile, those who remained in the north witnessed the destruction of bakeries, flour warehouses, and food markets due to airstrikes. The ongoing war has also disrupted food production, and basic food commodities have become increasingly scarce due to limited humanitarian assistance. In previous wars in Gaza, humanitarian aid played a crucial role in improving access to basic necessities, including food (Brück et al., 2019) . However, during this ongoing war, humanitarian aid has been severely hindered from entering the region, exacerbating food insecurity and pushing the population into catastrophic conditions (Human Rights Watch, 2023)

2.5 Consumer Behavior

2.5.1 Definitions and General Concepts

Consumer behavior refers to the actions and associated activities of people who are specifically concerned in purchasing and utilizing economic goods and services. It encompasses both mental and physical actions (Smith, 1937).

(Bergadaa et al., 1995;Essoo & Dibb, 2004)define consumer behavior as the "how" and "why" individuals consume specific products or services. Their definitions emphasize the motivations and actions that guide consumption decisions, highlighting the intricate relationship between consumers and their choices. Expanding on this, (Mokhlis, 2008) interprets consumer behavior as the range of decisions consumers make regarding their consumption choices. According to Mokhlis, these decisions often revolve around whether or not to consume a particular product, reflecting the complex considerations involved in the selection process.

(Diop, 2004) offers another perspective, describing consumer behavior as an acquired attitude adopted by individuals who engage with a specific product. This definition underscores the behavioral and psychological aspects of consumption, focusing on how habits and preferences influence purchasing decisions. (Nassè, 2018) provide a more detailed view, framing consumer behavior as a process through which individuals examine, evaluate, and decide which products or services meet their needs. These researchers emphasize the role of motives such as quality, taste, advertising, price, and personal preferences in shaping consumption choices.

(Galbete et al., 2017) approach consumer behavior from a lifestyle perspective, particularly in the context of diet and food. They argue that consumer behavior reflects daily lifestyle patterns, which are subject to changes and variations based on individual needs and external factors. (Raju & Xardel, 2004) present a comprehensive definition, describing consumer behavior as the sum of how individuals and groups recognize their needs and the ways they purchase and experience goods and services to meet those needs.

(غيموز, 2014) defines it as a set of ideas that affect the individual’s feelings and determine his behaviors and unsatisfied needs. Human behavior changes continuously, as do lifestyles and the strength of influences.

The American Marketing Association builds on this understanding by defining consumer behavior as the dynamic interplay of emotions, cognition, actions, and environmental factors that guide individuals in the exchange processes of their daily lives.

From an academic perspective, consumer behavior is regarded as an applied social science. The analysis of consumer behavior applies experimental behavioral principles to understand human consumption patterns. Positioned at the intersection of economic psychology and marketing science, this field offers insights into how and why consumers make purchase decisions (Foxall, 2001).

2.5.2 Characteristics of consumer behavior

According to (غيموز, 2014),consumer behavior is characterized by several characteristics, including:

- Consumer behavior results from a motive or set of motives.
- It is characterized by diversity and flexibility, as it changes according to circumstances and differs from one individual to another.
- The unconscious plays a major role in shaping consumer behavior.
- Consumer behavior is linked to previous events and may affect subsequent events.
- It is often difficult to predict consumer actions and behavior.

Due to the complexity of consumer behavior and the difficulty of uncovering its secrets, behavioral scientists have called it the "black box", where the consumer is viewed as an entity that receives stimuli and issues certain responses. In other words, the human mind works as a data processing system, as it receives inputs (stimuli) and produces outputs (responses or actions) (بن عيسى, 2010)

2.5.3 Factors Influencing Consumer Behavior

Many factors shape the consumer's decision-making process. Researchers have categorized these factors in different ways. For instance, (Koudelka, 1997)separates them into internal and external factors, while (University of Delaware) identifies three main categories: personal, psychological, and social factors. (Kotler, 2001)expands this by adding cultural factors as a separate category.

2.5.3.1 Personal factors

Individual characteristics and attributes that affect a person's behavior, preferences, and decision-making processes are referred to as personal factors. These variables, which are specific to each person, include things like age, occupation, income, education, lifestyle, personality, and stage of life. Individual requirements, interests, and circumstances influence how a person views, assesses, and chooses goods and services (Horska & Sparke, 2007).

- Age & life cycle: Age and life cycle stages play a significant role in consumer behavior. As individuals age, their needs and preferences evolve. The life cycle is a series of stages through which consumer attitudes and behavioral tendencies develop and occur due to the development of maturity, experience, income, and status (Wells & Gubar, 1966).

- Occupation: A person's occupation has a considerable impact on their purchasing decisions. People today worry a lot about their image and social status, which is a direct result of their financial success. A person's consumption of certain things is influenced by their occupation or profession. (Lancaster, 1966)

- Lifestyle: A consumer's lifestyle is another significant factor affecting consumer behavior. Lifestyle refers to how an individual lives and interacts with society, shaped by their interests, opinions, and activities. It further developed through social interactions experienced

throughout the stages of the lifecycle. This influences their overall behavior and interactions with the world, including purchasing decisions (Best et al., 2007).

- Personality: A person's personality is the culmination of all their enduring internal psychological characteristics that set them apart (Kassarjian, 1971). So, Personality is an important factor in consumer behavior, as it varies from one person to another and changes over time. It significantly affects purchasing choices. Personality goes beyond appearance, encompassing behavior in different circumstances. Traits such as self-confidence, dominance, and assertiveness can play a key role in shaping consumer preferences for specific products or services (Jisana, 2014).

2.5.3.2 Psychological factors

There are many internal factors that shape a person's decision-making and buying patterns that affect consumer thoughts, emotions, and behaviors. Many psychological factors impact how consumers evaluate and select products or services (Callwood, 2013) . These factors include:

- Motivations: it plays a critical role in shaping consumer behavior. Each consumer is driven by unique motivations when making purchasing decisions. A consumer's decision to buy a product is often influenced by how well it addresses their specific needs and desires. One of the most fundamental and widely recognized models for understanding motivations is Maslow’s Hierarchy of Needs, which developed by psychologist Abraham Maslow in 1943. This model posits that human needs are organized in a five-tier pyramid, with each level representing a different category of needs. At the base of the pyramid are the most basic physiological needs, including food, water, warmth, and shelter, which are essential for survival. Above these, the second tier consists of safety needs, such as personal security, employment, resources, health, and property. As individuals satisfy these lower-level needs, they move on to higher levels: social needs (such as friendship, intimacy, and family), esteem needs (including self-esteem, respect, and recognition), and self-actualization needs, which involve realizing personal potential, self-growth, and peak experiences (Huitt, 2007) . According to this model, as an individual fulfills their physiological needs, they will naturally

progress to seeking the fulfillment of safety and security needs, and so forth through the hierarchy (Taormina & Gao, 2013).

The model suggests that in times of scarcity or threat, consumers are likely to prioritize their physiological and safety needs over other concerns. For example, in the context of the COVID-19 pandemic, many consumers engaged in panic buying and hoarding behaviors, focusing on purchasing basic commodities like toilet paper, canned goods, and hand sanitizers. These behaviors are driven by a perceived threat to their survival, which triggers the need to meet these fundamental needs first before other desires can be addressed (Micalizzi et al., 2021). As Maslow's hierarchy indicates, when lower-level needs (such as the need for food or security) are at risk, individuals tend to focus their behavior on addressing these needs, often disregarding higher-order aspirations. So, decision-makers must recognize that individuals' behavior during emergencies generally aligns with the hierarchy of needs described in Maslow's motivation theory (Donahue et al., 2012).

As shown in figure 4, the hierarchy of needs emphasizes the prioritization of basic physiological needs at the base, with higher-level needs becoming more significant only once the lower-level needs are satisfied.

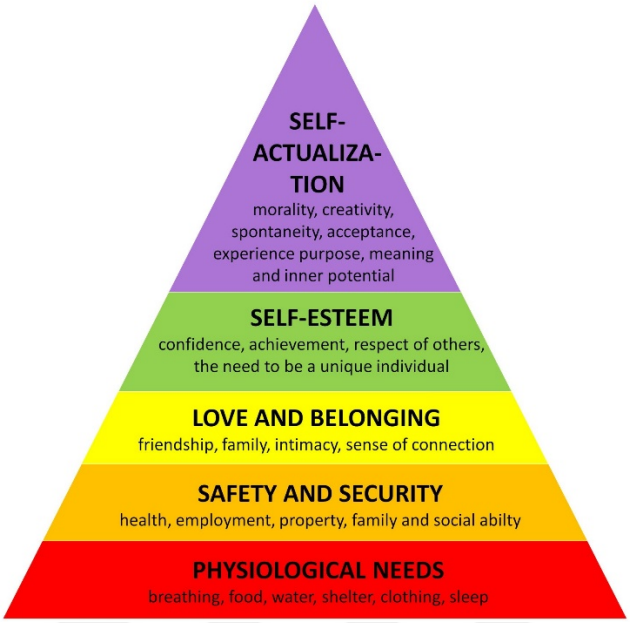

Figure 4 Maslow's Hierarchy of Needs

(Finkelstein, 2006)

- Perception: it defined as the process of selecting, analyzing, and interpreting environmental input data to make them meaningful and useful (Alex Brown) .So it is the process by which customers make sense of the world around them using the data that their senses have collected. Consumers automatically evaluate their wants, values, and expectations in response to stimuli. They then use this evaluation to choose, organize, and interpret the stimuli(Connolly, 2012). The diversity in perception can lead to varying purchasing decisions among consumers with similar needs (Belch G & Belch M, 2018).

- Learning: it can be defined as a set of continuous and organized processes and procedures, whether intentional or unintentional, that aim to provide individuals with the knowledge and information they need when making decisions related to goods and services. In addition, learning contributes to modifying individuals' ideas, beliefs, attitudes, and behavioral patterns towards various matters. From this definition, learning goes through multiple stages, is characterized by continuity and change, and may be intentional or occur incidentally. Moreover, learning can be done through thinking, observation, or practical experience (البكري, 2006).Learning, according to Khalifi Rizqi, is a process by which an individual acquires new

information in his brain that is stored by appropriate mechanisms. In the psychological sense, it is any permanent change in behavior resulting from a change in cognitive processes (خليفي, 2012).

- Attitudes and beliefs : People may hold beliefs and attitudes regarding specific products and services, Attitudes and beliefs are important factors that shape consumer behavior. An attitude reflects how a consumer thinks, feels, and acts towards something, whether it's a product, person, or even (Sarangapani, 2009). Abu Taiema define attitudes and beliefs as a set of perceptions a person holds about something, and these beliefs may be based on factual knowledge or belief (2008 ,أبو طعيمة).

2.5.3.3 Economic factors

Economic factors play a crucial role in shaping consumer behavior. The financial situation of consumers directly impacts their purchasing decisions and brand/product choices. Both personal and household income levels increase consumers' ability to purchase and stockpile goods. Additionally, expectations of future income influence purchasing decisions, as consumers may adjust their behavior based on anticipated financial conditions. Savings and liquid assets are also significant in enabling consumers to purchase goods when needed. Furthermore, broader economic factors such as inflation and recession affect prices and purchasing power, influencing how and when consumers decide to buy goods *(Ramya & Ali, 2016)*.

2.5.3.4 Cultural factors

Culture represents the fundamental values, beliefs, desires, and behaviors that individuals acquire from their family and significant societal institutions. It is an integral aspect of every society and serves as a primary influence on an individual's preferences and actions (Jisana, 2014). Culture is the crucial factor that determines a person's desires or decisions. The ideas, phrases, customs, language, materials, attitudes, and emotions of a civilization are all part of its culture (Samuel Craig & Douglas, 2006) .So, culture has a major effect on consumer behavior. Research studies have consistently shown that culture influences almost every aspect of purchasing: it affects

basic psychological domains such as self-identity and motivation, the way that information is processed (Torelli & Rodas, 2016).

2.5.3.5 Social factors

Social factors significantly influence consumer buying behavior, with key elements including family and reference groups. The importance of the family comes from the fact that the individual is greatly affected by family decisions and is influenced by them as they are in constant contact. Reference groups, which can impact a person's attitudes and behaviors either directly or indirectly, serve as benchmarks for learning and adopting attitudes, beliefs, and behaviors. According to (Pride & Ferrell, 2022) , individual behavior is influenced by many small groups, which are defined as the groups with a distinctive influence on which the individual belongs and to which he refers.

Furthermore, an individual's roles and status within society shaped by affiliations with groups, organizations, families, or clubs profoundly affect their purchasing decisions, as these social positions help shape their preferences and choices (Jisana, 2014).

2.5.3.6 Marketing and situational factors

Situational factors are defined as the time and place factors surrounding the purchasing and consumption situation that temporarily affect the individual's behavior without having any relation to the characteristics of the personality or the elements of the marketing mix of the organization. Given that situational circumstances are numerous and varied, the behavior of individuals under these circumstances may take complex measures, which makes it difficult to predict them (بن عيسى, 2010).

While marketing factors include the product, the price, marketing and, distribution channels (حمودي et al., 2018).

2.5.4 Consumer behavior during crisis

2.5.4.1 Introduction

Consumer behavior and people's purchasing pattern tend to change during difficult and stressful times such as crisis (Nistorescu & Puiu, 2009) . Consumers react to any change in the crisis situation around them by changing their consumption. This happens as a result of a change in their levels of perception of risk. People have become more money-minded; they no longer want to spend money on high-quality products, even if they are still able to do so. They spend only on essentials and switch to cheaper brands. They have a more rational opinion about the temptations of discounts (Nistorescu & Puiu, 2009).

Consumer behavior before the crisis was not based on making large-scale decisions and gathering information, but during the crisis, especially those with direct impacts on survival, such as wars, it became a more complex and intricate process. the crisis, have a negative impact on consumers, which means that the consequences of the crisis can be reflected in people's consumption patterns (Amalia & Ionut, 2009).

So, in these times of uncertainty, there is a radical shift in purchasing and spending habits. These shifts vary greatly depending on the type of crisis and the extent of its impact on individuals and societies. Consumers radically re-prioritize their priorities. There is a greater focus on essential goods such as food and medicine, while non-essential or luxury goods are postponed or avoided. Numerous studies show that crises whether economic or war-related crisis led to a significant shift in consumer interests, with the priority given to securing basic life needs, and goods that provide comfort and entertainment becoming less important. (Solomon, 2020).

2.5.4.2 Different consumer responses to crises

Crisis that occur in different countries and at varying rates in turn affect the consumer behavior of individuals. Consumer behavior is often studied in situations where the buyer is able to make choices, but studies that address behavior during unusual situations have not received the same attention.

The psychological aspect of the consumer affects his future behavior and leads it according to specific psychological data, and the consumer responds to the crisis and adapts to it in a way that is more rational due to caution and fear of increasing the severity of the crisis (Ang, 2001a). So, Consumers at this time are increasingly searching for information about available alternatives to make their final choice. This choice is mainly directed towards low-priced products and durable products that have a long shelf life, unlike non-durable products that are consumed immediately, in order to anticipate and resist the continuation of the crisis on the consumer. Also, the more the consumer believes in the seriousness of the crisis, the more he will turn towards durable products because their confidence in the state's ability to address the ongoing crisis decreases significantly (دراجي et al., 2018) .

For example, during economic crises, consumers exhibit a range of responses that affect their purchasing behaviors. For instance, during the Asian economic crisis, significant changes were observed in consumer responses at various levels. While the following table reflects consumer responses during the Asian economic crisis, it provides a useful framework for understanding how consumers may react during other types of crises. War-related crises, however, often amplify these behaviors due to heightened uncertainty and the pressing need for survival. The table below illustrates these responses in more detail.

Table 1 Consumer Responses During Economic Crisis

(Ang, 2001)

General Responses	Adjustments in Products	Adjustments in Pricing	Adjustments in Promotion	Adjustments in Shopping
Reduced waste and extravagance	Buying essential goods only	Focus on durable products	Preference for discounts	Increased shopping duration
Careful decision-making	Switching to local goods	Focus on cheaper products	Less attraction to giveaways	Preference for nearby stores
Increased information-seeking	Buying in smaller packages	Focus on value for money	Preference for informative ads	Reduced impulse buying

In general, the adjustments consumers make to their behavior during crises are often more rational and cautious than in normal circumstances. Under regular conditions, consumers tend to purchase products as needed without extensive deliberation. However, during critical situations, they prioritize essential goods to minimize waste and excessive spending.

Another common consumer behavior during crises is panic buying, which characterized by the excessive accumulation of essential goods due to fear and anxiety over potential shortages. Previous studies have highlighted that this behavior often emerges in response to natural disasters and unexpected disruptions. For instance, during Superstorm Sandy, which struck the East Coast of the United States in 2012, concerns about fuel supply disruptions led to widespread panic buying, causing gasoline shortages at many stations (Sterman & Dogan, 2015). Similar patterns of panic-driven purchasing have been observed in various disaster scenarios (Kulemeka, 2010; Ishida et al., 2013). Several psychological factors contribute to panic buying, one major driver is risk aversion, where consumers fear being unable to secure necessary supplies, prompting them to over-purchase (Arafat et al., 2020) .This perceived threat to their sense of security often leads to irrational purchasing decisions (Prentice et al., 2022) . Additionally, panic buying can serve as a coping mechanism, offering individuals a sense of control over uncertain circumstances. The influence of social behavior also plays a key role; witnessing others stockpile essentials or encountering empty store shelves can create a heightened sense of urgency, reinforcing expectations of scarcity and further fueling panic buying (Papagiannidis et al., 2023)

2.5.4.3 Consumer Behavior during The Gaza War 2023

The war in Gaza is a stark example of how crises impact consumer behavior. The ongoing war and the continuous siege have presented unprecedented challenges for the population, leading to severe deterioration in living conditions, which directly influenced consumers behavior. One of the most prominent effects observed in Gaza's market was the widespread fear of shortages in food commodities, especially with the siege preventing humanitarian aid from entering for extended periods Which the residents of the Gaza Strip depend on mainly during wars due to the loss of most of the population's sources of income and the exaggerated rise in market prices (PCPS, 2023) , further exacerbating the suffering of population. These circumstances led to the emergence of new and diverse consumer behaviors, with people taking precautionary steps to stockpile basic foodstuffs such as flour, rice, and oils in anticipation of disruptions in supply chains or market closures. The blockade and restrictions on the movement of goods heightened fears among the population about losing access to these goods in the near future. Moreover, going to markets became a risky endeavor, as many areas were either heavily destroyed or embroiled in violent clashes (العربي الجديد, 2024). This led to an increased fear for people's safety, making them avoid going to market areas that were potentially unsafe.

What further exacerbated these behaviors was the use of starvation as a political tool, with the population in Gaza becoming increasingly fearful of running out of essential supplies. In light of these conditions, behaviors like stockpiling became one of the most common coping strategies during this difficult period. This behavior was not only a response to economic hardship but also a direct result of the growing psychological stress and fear of the uncertain future (الجزيرة, 2024) .

2.5.5 Stockpiling behavior

Human behavior is dynamic and tends to shift during crises or disasters (Caballero et al., 2016). A frequently observed behavior in these situations is stockpiling. Purchasing significantly more than is usually needed is a sign of stockpiling. In many parts of the world, reports of such over buying during humanitarian situations have been common (Yuen et al., 2020).

Major events like pandemics, hurricanes, and wars often push people to stockpile groceries on a large scale. Under normal circumstances, consumers tend to stock up when there are discounts or sales (Griffith et al., 2009), but this usually doesn't cause shortages since sales are temporary and shoppers have different levels of price sensitivity. However, during sudden and extreme crises, stockpiling can quickly lead to stock-outs. People worry about store closures due to movement restrictions or expect shortages, which led to more stockpiling. The fear of a shortage of commodities becomes infectious during disasters, when there is little time for thinking and assessing the situation. It spreads quickly through media outlets, including social media, TV, radio, and newspapers. False information and inflated claims will worsen the issue by encouraging people to stockpile and accelerate purchases (Jayne Dowle, 2020) . Examples of situations that caused this kind of behavior include the COVID-19 pandemic (Baker et al., 2020), hurricanes(Beatty et al., 2019), also in order to reduce food supply instability during disasters, rice and grains a staple crop in Asia were also stockpiled in India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. (Hu et al., 2013)

Humans respond to scarcity either emotionally or rationally, which leads to stockpiling. People may stockpile as a result of stress, worry, panic, and fear (Sterman & Dogan, 2015) , possibly in an effort to control their distress (Rajkumar, 2020). For instance, a number of studies consistently revealed that those who felt more threatened by COVID-19 were more likely to build up stocks (Garbe et al., 2020) and to have a larger desire to stockpile (Kim et al., 2020).

Disaster-triggered stockpiling behavior has more illogical components than shop or brand promotion-triggered stockpiling, and it can be viewed as an unconventional inventory accumulation action for minimizing possible losses (King & Devasagayam, 2017).
In food markets, stockpiling minimizes risk, maximizes potential gain, and prepares for future uncertainty (Headey, 2011). In addition to scarcity, the war itself is associated with feelings of fear, insecurity, and uncertainty, which may increase the motivation to stockpile or make hasty purchases of goods. Both commodity theory (Brock, 1968) and prospect theory (Tversky & Kahneman, 1992)theoretically support this, relating how customers may hoard or stockpile

necessities due to scarcity and risk aversion, respectively. Risk aversion may encourage stockpiling as a way to protect oneself from harmful events, even if they are unlikely to occur, if the imagined inability to access critical items in the future is deemed to be dangerous. Stocking up on supplies is, to some degree, a natural human instinct. However, it can negatively impact society by straining supply chains and creating shortages for other.

It is crucial to comprehend the causes because stockpiling behavior can have serious repercussions, including preventing those who need them most from buying necessities and causing prices for key products to fluctuate (Chen et al., 2020).

2.5.6 Flour Stockpiling in Gaza: From Survival Strategy to a Health Crisis

Flour stockpiling has become a common behavior in Gaza during the ongoing war since 2023 October 7, as it is one of the most essential food commodities that prevents hunger amidst the severe shortage of other food supplies. This shortage is caused by the bombing of factories, significant damage to agricultural lands, the continuous closure of border crossings, and the prevention of aid and humanitarian supplies from entering.

The halt in aid deliveries has led to a sharp increase in commodity prices due to their scarcity, with some goods including flour rising in price by tens of times, while others have completely disappeared from the market. For instance, the price of a 25-kilogram sack of flour has skyrocketed to 500 shekels (approximately $131.5), up from 60 shekels (about $15.7) before the war. In other areas, the price has reached as high as 1,000 shekels ($263) (حسني نديم, 2023).

This price surge has occurred amid an economic crisis in the Gaza Strip, with residents suffering from a lack of cash flow after losing their jobs due to the ongoing war. While some residents have managed to purchase and stockpile flour to avoid further price hikes and secure their future needs, others have struggled to obtain it due to its unaffordability. Many had relied primarily on humanitarian aid, and once its entry was blocked, obtaining flour and other essentials became nearly impossible (جمعة يونس, 2025).

In this context, the disappearance of flour from Gaza's markets has triggered a severe humanitarian crisis, turning the mere act of obtaining a loaf of bread into a distant dream in many areas. This crisis was exacerbated by the israeli military's targeting of dozens of bakeries and the depletion of fuel and gas necessary to operate the remaining ones.

Most of the flour stockpiled by residents has been depleted, including the supplies they received through food aid distributed by UNRWA. The organization has been unable to continue its distributions due to the lack of incoming shipments, as israeli authorities have intensified their blockade on border crossings that control the flow of goods into Gaza.

This crisis has affected all families in the Strip, especially those waiting for their turn to receive food aid after exhausting their meager stockpiles. As a result, many families have been forced to make bread using spoiled flour (الهور, 2024). The war has forced residents to break natural norms by consuming expired food and using spoiled flour to survive amidst the famine gripping the strip. People have found weevils, worms, and even rodent droppings in their flour, fully aware that it is unsafe for consumption. Yet, they continue to use it and feed it to their children, understanding the health risks but having no other choice in their fight against starvation.

In multiple interviews conducted by news agencies with Gaza residents, citizen Asaad stated:
"We have eaten rotten and moldy dry bread, which has caused us illnesses such as irritable bowel syndrome, bloating, and indigestion due to the fungi and bacteria present in it. Israel has been blocking fresh flour shipments into Gaza for several months." He added: *"The taste of spoiled bread is nauseating and lingers in the throat, affecting our mood and behavior, making us sluggish and heavy in movement."* He explained that flour prices fluctuate based on quality and availability, and even when available, it remains far from markets. Attempting to retrieve flour from areas like eastern Rafah can be life-threatening, as Israeli forces have repeatedly bombed civilians searching for flour.

Similarly, citizen Suleiman shared: *"The war, the lack of healthy flour, and the scarcity of fresh and clean bread in the markets have forced us to use spoiled flour. We know its harmful effects on our health and lives, but we have no choice—it's the only way to escape the famine that*

has left us unable to live normally due to hunger." Meanwhile, citizen Mohammed faced the same crisis but found a way to mask the bad taste of the spoiled flour by adding vanilla sugar and vinegar. However, he admitted: *"Despite this, the awful taste still lingers, though it becomes slightly more bearable."* He added that all residents of Gaza have been forced to consume spoiled flour despite knowing its risks:
"We have no choice but to eat it in order to survive." (2024 ,السنوار)

Similarly, displaced citizen Ibtisam Madi stated that she and her neighbors in the displacement camp have resorted to over toasting their bread to lessen the unpleasant taste caused by the widespread weevils in the flour. She added: *"My family can no longer tolerate the taste of bread, but hunger forces us to eat it. We didn't suffer as much when aid distributions were regular, but now I am worried about what we will do once our remaining supply runs out."* She explained that her family shared some of their flour with her husband's brother's family, who had completely run out (2024 ,الهور)

Nutrition expert Dr. Hazem Barghouth explained that consuming spoiled flour has severe health consequences, especially when eaten for prolonged periods. He stated: *"Spoiled flour contains harmful microbes and fungi, such as mold and mycotoxins, which can lead to food poisoning, causing symptoms like nausea, vomiting, diarrhea, and abdominal pain".* He added that spoiled flour contains aflatoxins, toxic substances produced by certain fungi, which can cause cancer over the long term. These toxins also harm the liver and lead to chronic poisoning. Furthermore, consuming spoiled flour disrupts digestion, causing bloating, constipation, and diarrhea. It also leads to vitamin and mineral deficiencies, resulting in long-term malnutrition.

Gaza residents have been forced to consume spoiled flour and expired food due to severe shortages in the markets and Israel's deliberate starvation tactics alongside its military aggression (,السنوار 2024)

By January 2025, a ceasefire agreement was reached, allowing the entry of humanitarian aid and sufficient food supplies. Consequently, citizens rushed to purchase and stockpile flour, as they still vividly remembered the devastating flour crisis in early 2024, which caused a deadly famine that claimed the lives of hundreds.

At that time, flour was the only relatively affordable commodity compared to other essential food items, whose prices had skyrocketed beyond the reach of most residents. However, a new flour crisis now looms as the genocide against Gaza resumes on March 18, 2025 (عیسی سعد الله, 2025) .

3 RESEARCH APPROACH

3.1 Introduction

Humans tend to take precautionary measures during crises, in anticipation of what might happen next. In the Gaza Strip, as a result of the ongoing war, the closure of crossings, and the worsening famine, clear purchasing and storage patterns emerged, as residents resorted to stockpiling flour as one of the most important basic food commodities. This study aims to explain and analyze this behavior by exploring the factors influencing it. In light of the previous literature review, the research problem is to understand the motivations and behavior of consumers in stockpiling flour during the war in Gaza, and to analyze the factors that contribute to shaping this behavior within an environment characterized by instability and recurring wars.

3.2 Research model

In order to understand the research requirements and context, in light of the study problem and its hypotheses, and in order to achieve the purpose of the study and reach its objectives, the conceptual framework of the study was developed in the form of variables, as Figure No. (5) shows that the study variables are represented in the social, economic, psychological and situational factors:

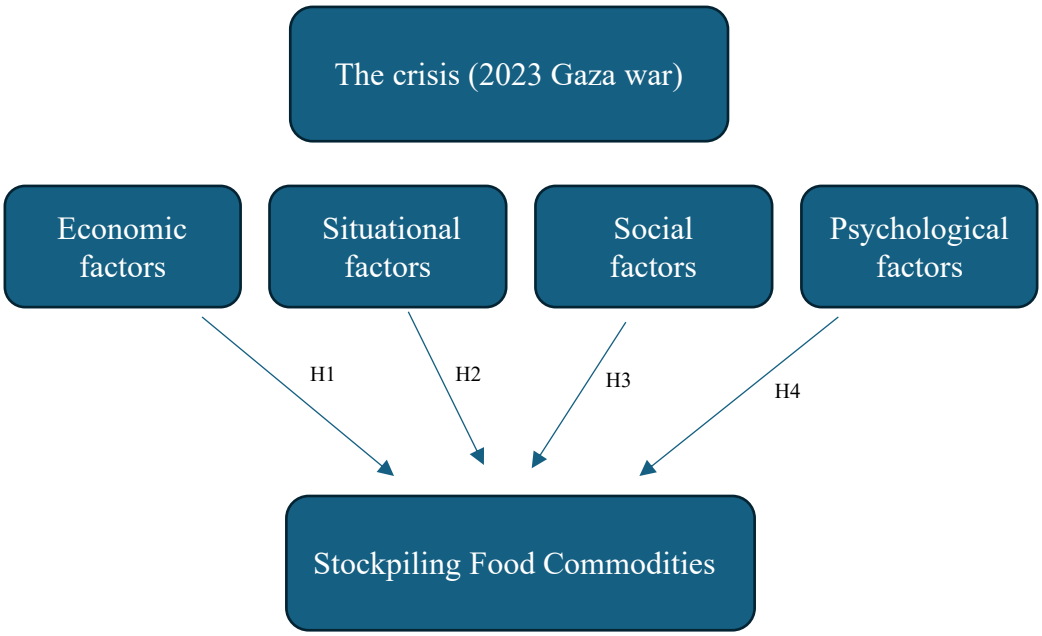

Figure 5 Conceptual Framework of the Proposed Hypotheses

3.3 Research design

3.3.1 Research methodology

This research is based on a descriptive analytical design, which seeks to describe and analyze consumer behavior regarding flour stockpiling during the humanitarian crisis resulting from the war in Gaza. This design allows understanding the factors that influence consumer decisions based on quantitative data that collected and analyzed using statistical methods (SPSS program).

3.3.2 Population & sample

The target population of this study consists of households residing in the Gaza Strip during the ongoing war in 2023. But since it is not possible to survey all people of the target population, a sample was used, where participants selected based on their availability and willingness to participate in the study.

3.3.3 Data collection tools

A questionnaire was used as the main tool to collect primary data from the target sample because of its possibility of collecting direct and quantitative data that can be analyzed statistically, Ease of distribution and collecting information from many participants in a short time, and it was a web-based survey.

The questionnaire was used in this study consists of four main parts, designed to measure the different factors that influence consumer behavior in stockpiling flour during the war in Gaza. The questions were prepared using a five-point Likert scale, where (1) represents “totally disagree” and (5) represents “totally agree”.

- The Questionnaire sections are:

1. Section One: Demographic data to collect background information.
2. Section Two: Economic factors and their impact on flour stockpiling behavior.

3. Section Three: Situational factors and their impact on the flour stockpiling behavior.
4. Section Four: Social factors and their impact on flour stockpiling behavior.
5. Section Five: Psychological factors and the impact of the surrounding environment on flour stockpiling behavior.

- All questions were designed according to a five-point Likert scale to assess the degree of agreement or disagreement, as follows:
  1. 1 represents Totally disagree.
  2. 2 represents Disagree.
  3. 3 represents Neutral.
  4. 4 represents Agree.
  5. 5 represents Totally agree.

The questionnaire was developed based on a review of previous literature on consumer behavior during crises. It was based on research methodologies that used questionnaires to measure the factors influencing consumer behavior in the context of crises.

Among these studies I mention the following:

1- Motives for panic buying during the Corona crisis (2021 ,د/ أحمد محمود محمد النقيرة) : an applied study which aimed to identify the impact of purchasing motives during the Corona crisis on panic buying behavior, by applying it to a sample of 350 individuals from Egyptian consumers, where the research results revealed a relationship between the four purchasing motives, perception, fear of the unknown, coping behavior, psychological and social factors, and panic buying behavior.

2- Factor affecting panic behavior during crisis (Karim ben Othman & Kemal alayeb, 2021):The study sought to identify the factors affecting panic buying among Algerian consumers during the Corona crisis, by applying it to a sample of 381 consumers. The study showed that several factors affect panic buying among consumers, and they were as follows: the most influential elements in panic buying behavior during Corona are social and cultural factors, followed by psychological factors, and finally the situational and marketing factors.

3.3.4 Missing Data and Outliers

The researcher employed an online survey distribution method using Google Forms to administer the questionnaire to the respondents. This approach provided the researcher with control over the survey responses, as Google Forms was set to require the completion of all questions before submission. This ensured that no data would be left incomplete or missing.

3.3.5 Reliability of the Questionnaire

Reliability refers to the consistency of a scale in producing stable and consistent results when measurements are repeated over time. The process of evaluating reliability is known as reliability analysis, which involves assessing the extent of systematic variation within the scale by examining the correlation between scores obtained from multiple administrations of the scale. In reliability analysis, internal consistency is a key metric used to evaluate the reliability of a summated scale, where multiple items are combined to produce a total score. This aspect of reliability analysis focuses on the coherence and interrelatedness of the items that make up the scale (Hair et al., 2010). Cronbach's Alpha was used to assess the internal consistency and reliability of the scale items designed to measure the targeted construct. As shown in following table, the Cronbach's alpha values for all scales exceeded 0.7, indicating that the instrument demonstrates good reliability and meets the established threshold for consistency and dependability.

Table 2 Reliability Test Results for the Questionnaire Constructs Using Cronbach's Alpha

Factors	Number of Items	Cronbach's Alpha
Economic Factors	6	.757
Situational Factors	5	.819
Social Factors	5	.747
Psychological Factors	7	.834

3.3.6 Data analysis method

To analyze the data collected from the study sample, the Statistical Package for the Social Sciences (SPSS) was used. The analysis involved the following:

- Frequencies and Percentages: These were used to describe the demographic characteristics of the participants.

- Cronbach's Alpha: This was used to measure the internal consistency (reliability) of the questionnaire.
- Standard Deviation: This measure helped understand how spread out the responses were around the average.
- T-test: This test was used to check for significant differences between the means of two independent groups.
- ANOVA (Analysis of Variance): This test was used to examine differences among more than two groups.

4 DATA ANALYSIS AND STUDY RESULTS

4.1 Analysis of Sample Characteristics

We calculated the percentages for the personal variables by extracting and analyzing the data using SPSS, as shown in the following tables:

Table 3 Householder Gender

	Frequency	Percent
Male	205	52.4
Female	186	47.6
Total	391	100.0

Table 4 Householder Age

	Frequency	Percent
Less than 20 years	61	15.6
20 – 40 years	133	34.0
40 – 60 years	118	30.2
More than 60 years	79	20.2
Total	391	100.0

Table 5 Householder Educational level

	Frequency	Percent
Primary or below	56	14.3
Middle	47	12.0
Secondary	83	21.2
University	205	52.4
Total	391	100.0

Table 6 Householder Income

	Frequency	Percent
Less than 1000 NIS	140	35.8
1000 – 3000 NIS	137	35.0
3000 – 5000 NIS	73	18.7
More than 5000 NIS	41	10.5
Total	391	100.0

From the results in the previous table, it can be observed that there is a higher proportion of males in the sample compared to females, with males accounting for 52.4% and females 47.6%. As for the dominant age group, it is between 20 and 40 years, with a percentage of 34%, followed by the group aged 40-60 years at 30.2%. Regarding educational level, the highest proportion belongs to those with a university degree, which represents 52.4% of the sample. This reflects the educated nature of the community sample, showing a significant proportion with higher education.

As for the income level, the majority of respondents fall within the range of 1,000 shekels or less, which constitutes 35.8% of the total sample and 35%within the range of 1000 – 3000 shekels.

4.2 Analysis of the Flour Stockpiling Decision

This section explores the participants' responses regarding whether they stockpiled flour during the crisis. The results show that out of the total sample, 289 individuals (73.9%) reported that they had stockpiled flour, while 102 individuals (26.1%) stated they had not. These figures indicate that a significant majority of the sample took precautionary action by stockpiling flour (a basic and essential commodity) reflecting high levels of concern and preparedness during the crisis. This behavior may be influenced by various situational, psychological, economic, and social factors, which will be examined in the following sections.

Table 7 Did You Stockpile Flour During the War?

	Frequency	Percent
Yes	289	73.9
No	102	26.1
Total	391	100.0

4.3 Analysis of Reasons for Not Stockpiling Flour

Among the 102 participants who did not stockpile flour during the crisis, the reasons varied. The analysis of their responses is as follows:

1 - High Price of Flour (52%, 53 respondents)

More than half of the respondents who did not stockpile flour cited the high cost as the main barrier. During the crisis, flour prices increased significantly due to shortages and disruptions in supply chains. For many families already struggling to meet basic needs, allocating money for bulk purchases was impossible. The unaffordability of flour made stockpiling a luxury that low-income households simply couldn't afford.

2 - Did Not Think About Stockpiling (21.6%, 22 respondents)

A significant portion of the participants admitted that they *had not considered stockpiling flour*. This can be attributed to a state of psychological exhaustion. Many families were focused on surviving day to day under extreme conditions and didn't anticipate a complete breakdown in flour availability.

3 - Environmental Conditions (17.6%, 18 respondents)

Some respondents avoided stockpiling due to concerns that *flour would spoil* under environmental conditions. In the summer, extreme heat and humidity could lead to mold or infestation. In the winter, rain often enter homes, many of which are now just tents or the remains of destroyed buildings, rainwater seeps into the flour. Living in these unsafe, unsealed structures makes it almost impossible to keep flour dry and protected, discouraging families from stockpiling it in the first place.

4 - Other Reasons (8.8%, 9 respondents)

A smaller group cited other personal or situational reasons**.** Upon reviewing their open-ended responses, it's clear that these individuals were living in particularly vulnerable conditions:

- Three people's answers were summarized as follows: “My house was bombed and I’m living in a tent. Where could I possibly stockpile flour?”
- “Why should I stockpile? I don’t even know if I’ll live to see the next hour. When I need flour, I’ll buy it regardless of the price.”
- “Because of displacement and the total destruction of our home.”
- “We live in a tent. There’s no space for stockpile.”
- “Allah is the provider.”
- “We couldn’t stockpile anything due to constant displacement from one area to another.”
- “Because of continuous displacement, it is impossible to move any stockpiled items from one location to another.”

These statements reflect the devastating impact of displacement, loss, and uncertainty. Many participants were forced to move multiple times, making the idea of stockpiling unrealistic. Others expressed a sense of hopelessness reflecting the psychological toll of the war.

The reasons provided by participants who did not stockpile flour reflect the multifaceted challenges faced during the Gaza War, including economic hardship, displacement, and psychological distress. These findings support the broader understanding of consumer behavior in crisis contexts and emphasize the need for tailored humanitarian responses that consider both logistical and emotional barriers to preparedness.

Although the main hypotheses of this study focused on the factors influencing consumers who *did* stockpile flour, the analysis of those who *did not* reveals that the same factors played a significant role in their decision-making. Economic constraints such as the high price of flour and lack of financial means were the most cited reason for not stockpiling. Additionally, psychological factors like stress, and hopelessness during crisis, as well as situational challenges such as displacement and poor living conditions, were also significant barriers. These findings reinforce the overall hypothesis that many factors deeply affect consumer behavior during times of crisis whether they lead to stockpiling behavior or prevent it.

4.4 Analysis of Factors Influencing the Stockpiling Decision

For individuals who decided to stockpile flour, a set of questions was posed to assess the impact of various factors on their stockpiling decision. These questions were designed to measure the influence of economic, situational, social, and psychological factors, providing a comprehensive understanding of what drove their decision to stockpile flour during the war. The responses gathered from these questions were analyzed to determine the significance of each factor in shaping consumers' stockpiling behavior. Additionally, the reliability of these measures was assessed using Cronbach's alpha to ensure the consistency and validity of the factors examined.

4.4.1 Economic Factors Analysis

This section discusses the role of economic factors in influencing individuals' decisions to stockpile flour during the war. A set of statements was presented to participants who reported having stockpiled flour, aiming to measure the extent to which factors such as financial capacity, price sensitivity and cash availability influenced their decisions.

The results in the table show that all items scored above the neutral value (3), indicating a general agreement among participants on the impact of economic factors. The highest mean (3.83, SD = 1.211) was for the statement: “My economic capacity and available income affects my decision to stockpile flour during the war” reflecting the significant role income level plays in shaping individual behavior. This supports the idea that limited financial resources may hinder people's ability to secure essential goods in times of crisis.

The statements “The lack of available cash (cash on hand) affects my ability to stockpile flour during the war” (mean = 3.78) and “I feel that buying and stockpiling flour now is necessary to avoid a price increase in the near future” (mean = 3.78) also received relatively high means, showing that concerns about liquidity and inflation drive people to purchase and stockpile flour in advance.

Interestingly, the statement "If my income were higher, I would have bought and stockpiled a larger quantity of flour." received a slightly lower mean (3.64), suggesting agreement but also implying that some participants are already stockpiling what they can, regardless of income level.

The statement with the lowest mean (3.42) was "The rise in the price of regular flour has led me to stockpile flour that is of poor quality, had a bad smell, or was infested" indicating that while price sensitivity exists, not all participants accepted to compromise on quality.

The standard deviations for the economic factors range from 1.10 to 1.24, indicating a moderate level of variability in participants' responses. This suggests that while there is some consensus regarding the economic impact on flour stockpiling decisions, respondents' opinions are not entirely aligned, reflecting a reasonable diversity in economic circumstances and perceptions during the crisis.

In summary, the economic dimension proves to be a strong influencer in the decision to stockpile flour during the war. Purchasing power, price fluctuations, and cash availability directly affect consumer behavior, highlighting the importance of financial stability in ensuring food security during prolonged crisis.

Table 8 Descriptive Statistics for Economic Factors

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
My economic capacity and available income affect my decision to stockpile flour during the war.	289	3.83	.071	1.211
I continue to stockpile flour despite the ongoing increase in its price during the war.	289	3.70	.056	1.101
The lack of available cash (cash on hand) affects my ability to stockpile flour during the war.	289	3.78	.073	1.242
If my income were higher, I would have bought and stockpiled a larger quantity of flour.	289	3.64	.070	1.188

I feel that buying and stockpiling flour now is necessary to avoid a price increase in the near future.	289	3.78	.067	1.145
The rise in the price of regular flour has led me to stockpile flour that is of poor quality, had a bad smell, or was infested.	289	3.42	.069	1.170

4.4.2 Situational Factors Analysis

This section explores the role of situational factors in influencing individuals' decisions to stockpile flour during wartime. Participants who reported having stockpiled flour responded to a set of statements designed to assess the extent to which factors such as scarcity, waiting times, distribution mechanisms, rumors, and product quality impacted their behavior.

The results reveal that all items scored above the neutral value (3), indicating a general agreement on the relevance of situational factors. The highest mean (3.84, SD = 1.083) was recorded for the statement: *"*The scarcity of flour drives me to buy larger quantities for stockpiling*"* highlighting that limited availability is a strong motivator for stockpiling behavior.

Statements related to the limited distribution of flour by aid organizations (mean = 3.82) and rumors about potential shortages or price hikes (mean = 3.75) also received relatively high scores, indicating that individuals respond not only to current realities but also to perceived future risks.

The item with the lowest mean (3.54) was: *"*If I can't find flour of good quality, I resort to buying lower quality or spoiled flour for stockpile*"* suggesting that although individuals are concerned about scarcity, many remain cautious about compromising on quality.

The standard deviations, ranging from 1.01 to 1.13, indicate a moderate level of variability in participants' responses. This reflects some differences in how individuals perceive and react to the same situational challenges, possibly due to varying regional or logistical circumstances during the conflict.

In summary, situational factors such as scarcity, rumors, and distribution methods play a considerable role in influencing flour stockpiling decisions. These findings highlight that beyond personal resources, temporary and contextual pressures significantly shape consumer behavior in crisis settings.

Table 9 Descriptive Statistics for Situational Factors

	N Statistic	Mean		Std. Deviation Statistic
		Statistic	Std. Error	
Long queues for flour affect my decision to buy and stockpile it.	289	3.69	.066	1.121
The scarcity of flour drives me to buy larger quantities for stockpiling.	289	3.84	.064	1.083
The limited distribution of flour by relief organizations during the war motivates me to stockpile larger quantities compared to normal circumstances.	289	3.82	.059	1.010
Rumors about flour shortages or price increases encourage me to stockpile more of it.	289	3.75	.066	1.125
If I can't find flour of good quality, I resort to buying lower quality or spoiled flour for stockpile.	289	3.54	.067	1.133

4.4.3 Social Factors Analysis

This section analyzes the impact of social influences such as family, friends, and community behavior on individual decisions to stockpile flour during the war.

All item means exceeded the neutral midpoint (3), suggesting broad consensus that social factors contribute to flour stockpiling behavior. The highest mean (3.98, SD = 0.895) was found for the statement: *"*I feel that stockpiling flour during the war is a socially accepted behavior in the area I live in*"* emphasizing how group behavior can become normalized during crisis situations.

Other statements such as *"*I observe the stockpile behavior of those around me to guide my decisions on how much flour to stockpile*"* (mean = 3.81) and *"*Social pressures from my family

or friends influence my decision to stockpile flour during the war*"* (mean = 3.80) also scored highly, indicating that individuals tend to monitor and respond to the actions of their social circles.

The item with the lowest mean (3.74) was: *"*My family or community encourages me to stockpile any type of flour, even if it is of low quality, out of fear of its shortage*"* which suggests that while encouragement exists, some participants remain selective about quality even under social influence.

With all standard deviations below 1 (ranging from 0.895 to 0.983), the data indicates a relatively consistent set of responses among participants. This suggests that the social dynamics surrounding flour stockpiling are perceived similarly by many individuals, possibly due to shared experiences during the war.

In conclusion, social factors significantly influence individuals' stockpiling behavior, with peer behavior, and family encouragement shaping decisions. This reinforces the idea that stockpiling behavior is not purely personal, but also deeply embedded in collective social responses to crisis.

Table 10 Descriptive Statistics for Social Factors

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
When I see others stockpiling flour, I feel that I should stockpile it too.	289	3.78	.057	.965
Social pressures from my family or friends influence my decision to stockpile flour during the war.	289	3.80	.055	.928
My family or community encourages me to stockpile any type of flour, even if it is of low quality, out of fear of its shortage.	289	3.74	.058	.983
I observe the stockpile behavior of those around me to guide my decisions on how much flour to stockpile.	289	3.81	.054	.914
I feel that stockpiling flour during the war is a socially accepted behavior in the area I live in.	289	3.98	.053	.895

4.4.4 Psychological Factors Analysis

This section examines how psychological stressors such as fear, anxiety, and emotional responses to war impact the decision to stockpile flour in excessive or precautionary amounts.

The analysis reveals notably high mean values across all items, all above 4.00, which reflects strong agreement among participants about the psychological motivations behind stockpiling behavior. The highest mean (4.17, SD = 0.773) was for the statement: *"*Stockpiling large quantities of flour makes me feel safe and reassured, as it ensures the availability of food I can consume*"* underlining the emotional relief that comes from feeling prepared.

Closely following is the statement: *"*I stockpile flour to alleviate the fear and anxiety I feel during the war regarding the availability of food*"* (mean = 4.13), showing that flour stockpiling is used as a coping mechanism during times of high uncertainty.

All other items including concerns about violence, fear of running out, and distress triggered by others' stockpiling behavior also scored means above 4.00, confirming the significant psychological component behind this behavior.

The standard deviations were relatively low, ranging from 0.741 to 0.871, indicating a high level of agreement among participants. This suggests a shared psychological experience among many respondents, driven by the intense and collective pressures of wartime conditions.

In summary, psychological factors represent a major driving force behind flour stockpiling behavior. Emotional responses and the desire for security play a dominant role, often overriding rational or economic considerations. Flour, in this context, becomes not just a necessity, but a symbol of control and preparedness during crisis.

Table 11 Descriptive Statistics for Psychological Factors

	N Statistic	Mean		Std. Deviation Statistic
		Statistic	Std. Error	
The psychological stress caused by the war affects my decision about stockpile flour.	289	4.12	.044	.755
The escalation of bombing and violence during the war drives me to stockpile large quantities of flour.	289	4.04	.049	.830
When I see others stockpiling large quantities of flour, I feel concerned about it running out.	289	4.04	.048	.817
When I see others stockpiling flour, I feel psychological pressure that pushes me to do the same.	289	4.03	.048	.816
I stockpile flour to alleviate the fear and anxiety I feel during the war regarding the availability of food.	289	4.13	.044	.741
Stockpiling large quantities of flour makes me feel safe and reassured, as it ensures the availability of food I can consume.	289	4.17	.045	.773
The fear of a flour shortage made me accept stockpiling any kind of flour, even if it is of poor quality, rather than having no flour at all.	289	4.04	.051	.871

4.5 Hypothesis Results

To ensure the reliability of the analysis and the validity of the interpretations, it was first necessary to examine whether the data follows a normal distribution.

4.5.1 Normality Test

A normality test was conducted for the economic, situational, social, and psychological factors using values of skewness and kurtosis to determine the extent to which the data follows a normal distribution. Skewness and kurtosis values between -1 and +1 are considered acceptable to demonstrate normal univariate distribution (George, 2010).

The results of the test showed that all values for the four variables fall within this range, as follows:

Table 12 Result of skewness and kurtosis for Factors Affecting Flour Stockpiling Behavior

Factors	Skewness	Kurtosis
Economic	-0.713	0.044
Situational	-0.762	0.078
Social	-0.559	0.296
Psychological	-0.639	0.652

Based on these results, it can be concluded that the data approximately follows a normal distribution, thus allowing for the use of parametric tests to examine the relationships between variables.

4.5.2 Hypothesis Testing

In this section of the study, the hypotheses representing the relationship between various factors (economic, situational, social, and psychological) and consumer behavior in stockpiling flour during crises were tested. A parametric test (One-Sample T-test), was used to analyze each factor individually, comparing the calculated mean of the factors with a predefined reference value (e.g., 3 on a Likert scale). The goal was to determine whether different factors significantly affected consumers' decision to stockpile flour during crises.

The hypotheses were tested as follows:

4.5.2.1 Testing of Hypothesis H1

Hypothesis H1 states that economic factors significantly affect consumer behavior in stockpiling food commodities during crises. This hypothesis addresses the question: *Do economic factors affect consumers' behavior in stockpiling food commodities during the war?* To test this hypothesis, the mean values of the responses from the sample were analyzed. The results are presented in the table below:

Table 13 Results of One-Sample T-Test for the Effect of Economic Factors on Flour Stockpiling Behavior

Variable	N	Mean	Mean Difference	T-value	Sig	Cohen's d
Economic Factors	289	3.6909	0.69089	14.847	< 0.001	0.873

The results showed that the calculated mean for economic factors is 3.6909, with a mean difference of 0.69089, indicating a significant difference between the calculated mean and the reference value (3 on the Likert scale).

The T-test results also revealed a T-value of 14.847 and a p-value of less than 0.001, suggesting a strong statistical significance, indicating that economic factors have a significant impact on consumers' flour stockpiling behavior.

Moreover, the effect size was measured using Cohen's d, which was 0.873. According to conventional benchmarks (0.2 = small, 0.5 = medium, 0.8 = large), this represents a large effect size, suggesting that economic factors had a strong practical impact on consumer behavior.

Based on these results, we can confirm that economic factors significantly influence consumers' flour stockpiling behavior during the crisis, thereby supporting Hypothesis H1.

4.5.2.2 Testing of Hypothesis H2

Hypothesis H2 states that situational factors significantly affect consumer behavior in stockpiling food commodities during crises. This hypothesis addresses the question: *Do situational factors affect consumers' behavior in stockpiling food commodities during the war?* To test this hypothesis, the mean values of the responses from the sample were analyzed. The results are presented in the table below:

Table 14 Results of One-Sample T-Test for the Effect of Situational Factors on Flour Stockpiling Behavior

Variable	N	Mean	Mean Difference	T-value	Sig	Cohen's d
Situational Factors	289	3.7287	0.72872	14.854	< 0.001	0.874

The results showed that the calculated mean for situational factors is 3.7287, with a mean difference of 0.72872, indicating a significant difference between the calculated mean and the reference value (3 on the Likert scale).

The T-test results also revealed a T-value of 14.854 and a p-value of less than 0.001, suggesting a strong statistical significance, indicating that situational factors have a significant impact on consumers' flour stockpiling behavior.

Moreover, the effect size was measured using Cohen's d, which was 0.874. According to conventional benchmarks (0.2 = small, 0.5 = medium, 0.8 = large), this represents a large effect size, suggesting that situational factors had a strong practical impact on consumer behavior.

Based on these results, we can confirm that situational factors significantly influence consumers' flour stockpiling behavior during the crisis, thereby supporting Hypothesis H2.

4.5.2.3 Testing of Hypothesis H3

Hypothesis H3 states that social factors significantly affect consumer behavior in stockpiling food commodities during crises. This hypothesis addresses the question: *Do social factors affect consumers' behavior in stockpiling food commodities during the war?* To test this hypothesis, the mean values of the responses from the sample were analyzed. The results are presented in the table below:

Table 15 Results of One-Sample T-Test for the Effect of Social Factors on Flour Stockpiling Behavior

Variable	N	Mean	Mean Difference	T-value	Sig	Cohen's d
Social Factors	289	3.8201	0.82007	21.090	< 0.001	1.241

The results showed that the calculated mean for social factors is 3.8201, with a mean difference of 0.82007, indicating a significant difference between the calculated mean and the reference value (3 on the Likert scale).

The T-test results also revealed a T-value of 21.090 and a p-value of less than 0.001, suggesting a strong statistical significance, indicating that situational factors have a significant impact on consumers' flour stockpiling behavior.

Moreover, the effect size was measured using Cohen's d, which was 1.241. According to conventional benchmarks (0.2 = small, 0.5 = medium, 0.8 = large), this represents a large effect size, suggesting that social factors had a strong practical impact on consumer behavior.

Based on these results, we can confirm that social factors significantly influence consumers' flour stockpiling behavior during the crisis, thereby supporting Hypothesis H3.

4.5.2.4 Testing of Hypothesis H4

Hypothesis H4 states that psychological factors significantly affect consumer behavior in stockpiling food commodities during crises. This hypothesis addresses the question: *Do psychological factors affect consumers' behavior in stockpiling food commodities during the war?* To test this hypothesis, the mean values of the responses from the sample were analyzed. The results are presented in the table below:

Table 16 Results of One-Sample T-Test for the Effect of Psychological Factors on Flour Stockpiling Behavior

Variable	N	Mean	Mean Difference	T-value	Sig	Cohen's d
psychological Factors	289	4.0811	1.08107	32.377	< 0.001	1.905

The results showed that the calculated mean for psychological factors is 4.0811, with a mean difference of 1.08107, indicating a significant difference between the calculated mean and the reference value (3 on the Likert scale).

The T-test results also revealed a T-value of 32.377 and a p-value of less than 0.001, suggesting a strong statistical significance, indicating that psychological factors have a significant impact on consumers' flour stockpiling behavior.

Moreover, the effect size was measured using Cohen's d, which was 1.905. According to conventional benchmarks (0.2 = small, 0.5 = medium, 0.8 = large), this represents a large effect size, suggesting that psychological factors had a strong practical impact on consumer behavior . This clearly reflects the profound impact of emotions, fear, and psychological anxiety on consumers' decision-making in such critical circumstances.

Based on these results, we can confirm that psychological factors significantly influence consumers' flour stockpiling behavior during the crisis, thereby supporting Hypothesis H4.

4.5.2.5 Testing of Hypothesis H 5

The fifth hypothesis states that There are differences in consumer responses attributed to personal characteristics towards the factors affecting the stockpiling food commodities. To test this hypothesis, several sub-hypotheses related to personal characteristics (such as gender, age, income, educational level) were examined using parametric statistical tests (T-tests and ANOVA), depending on the nature of each variable.

4.5.2.5.1 Sub-Hypothesis 5.1

4.5.2.5.1.1 Testing of H5.1.a

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on gender (Male/Female) regarding economic factors.

To test this sub-hypothesis, an independent samples t-test was performed to examine whether gender (male/female) influences consumers' evaluation of economic factors in the decision to stockpile flour as shown in the following table:

Table 17 Results of Independent Samples T-Test for Gender Differences in Economic Factors Affecting Flour Stockpiling

Gender	N	Mean	Mean difference	T - value	sig
Male	159	3.6572	-0.07482	-0.799	0.212
Female	130	3.7321			

The table indicates that there are no statistically significant differences in consumers' responses regarding economic factors based on gender, as the t-value was (−0.799) with a significance level of (0.212), which exceeds the standard significance threshold of 0.05. Accordingly, the sub-hypothesis (H5.1.a), which posits that there are differences in consumers' responses toward stockpiling food commodities based on gender regarding economic factors, is rejected.

4.5.2.5.1.2 Testing of H5.1. b

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on age regarding economic factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the age variable in the study sample (less than 20 years, 20-40 years , 40-60 years , more than 60 years). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 18 Results of ANOVA Test for Age Differences in Economic Factors Affecting Flour Stockpiling

Variable	F	Sig
Age	0.813	0.709

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward economic factors based on age. The F-value was (0.813) with a significance level (Sig.) of (0.709), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different age groups are not statistically significant. Therefore, the sub-hypothesis (H5.1.b), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding economic factors, is rejected.

4.5.2.5.1.3 Testing of H5.1. c

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on income regarding economic factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the income variable in the study sample (less than 1000 NIS, 1000-3000 NIS, 3000 – 5000 NIS, more than 5000 NIS). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 19 Results of ANOVA Test for Income Differences in Economic Factors Affecting Flour Stockpiling

Variable	F	Sig
income	0.784	0.745

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward economic factors based on income. The F-value was (0.784) with a significance level (Sig.) of (0.745), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different income groups are not statistically significant. Therefore, the sub-hypothesis (H5.1.c), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding economic factors, is rejected.

4.5.2.5.1.4 Testing of H5.1. d

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on educational level regarding economic factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the educational level variable in the study sample (primary or below, middle, secondary, university). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 20 Results of ANOVA Test for Educational Level Differences in Economic Factors Affecting Flour Stockpiling

Variable	F	Sig
Educational level	1.679	0.029

As shown in the table above, the results indicate statistically significant differences in consumer responses related to economic factors based on educational level. The F-value was (1.697) with a significance level of (0.029), which is less than the standard threshold of 0.05. This indicates that educational level plays a role in shaping perceptions of economic factors on stockpiling behavior. Therefore, the sub-hypothesis (H5.1.d) is accepted.

4.5.2.5.1.5 Testing of H5.2.a

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on gender (Male/Female) regarding situational factors.

To test this sub-hypothesis, an independent samples t-test was performed to examine whether gender (male/female) influences consumers' evaluation of situational factors in the decision to stockpile flour as shown in the following table:

Table 21 Results of Independent Samples T-Test for Gender Differences in Situational Factors Affecting Flour Stockpiling

Gender	N	Mean	Mean difference	T - value	sig
Male	159	3.7208	-0.01771	-0.179	0.429
Female	130	3.7385			

The table indicates that there are no statistically significant differences in consumers' responses regarding economic factors based on gender, as the t-value was (-0.179) with a significance level of (0.429), which exceeds the standard significance threshold of 0.05. Accordingly, the sub-hypothesis (H5.2.a), which posits that there are differences in consumers' responses toward stockpiling food commodities based on gender regarding situational factors, is rejected.

4.5.2.5.1.6 Testing of H5.2.b

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on age regarding situational factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the age variable in the study sample (less than 20 years, 20-40 years, 40-60 years, more than 60 years). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 22 Results of ANOVA Test for Age Differences in Situational Factors Affecting Flour Stockpiling

Variable	F	Sig
Age	2.097	0.006

Based on the results of the ANOVA test, it is evident that there are statistically significant differences between age groups in consumer responses to situational factors (F = 2.097, Sig =

0.006). Since the Sig value is less than 0.05, this indicates that age groups have a significant impact on how individuals respond to situational factors. Therefore, it can be concluded that situational factors are influenced by different age groups, and these differences should be taken into account when analyzing consumer responses. So, the sub-hypothesis (H5.2.b), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding economic factors, is accepted.

4.5.2.5.1.7 Testing of H5.2. c

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on income regarding situational factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the income variable in the study sample (less than 1000 NIS, 1000-3000 NIS, 3000 – 5000 NIS, more than 5000 NIS). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 23 Results of ANOVA Test for Income Differences in Situational Factors Affecting Flour Stockpiling

Variable	F	Sig
income	1.182	0.276

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward situational factors based on income. The F-value was (1.182) with a significance level (Sig.) of (0.276), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different income groups are not statistically significant. Therefore, the sub-hypothesis (H5.2.c), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding economic factors, is rejected.

4.5.2.5.1.8 Testing of H5.2. d

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on educational level regarding situational factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the educational level variable in the study sample (primary or below, middle, secondary, university). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 24 Results of ANOVA Test for Educational Level Differences in Situational Factors Affecting Flour Stockpiling

Variable	F	Sig
Educational level	2.346	0.002

As shown in the table above, the results indicate statistically significant differences in consumer responses related to situational factors based on educational level. The F-value was (2.346) with a significance level of (0.002), which is less than the standard threshold of 0.05. This indicates that educational level plays a role in shaping perceptions of situational factors on stockpiling behavior. Therefore, the sub-hypothesis (H5.2.d) is accepted.

4.5.2.5.1.9 Testing of H5.3.a

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on gender (Male/Female) regarding social factors.

To test this sub-hypothesis, an independent samples t-test was performed to examine whether gender (male/female) influences consumers' evaluation of social factors in the decision to stockpile flour as shown in the following table:

Table 25 Results of Independent Samples T-Test for Gender Differences in Social Factors Affecting Flour Stockpiling

Gender	N	Mean	Mean difference	T - value	sig
Male	159	3.8126	-0.01665	-0.213	0.416
Female	130	3.8292			

The table indicates that there are no statistically significant differences in consumers' responses regarding economic factors based on gender, as the t-value was (−0.213) with a significance level of (0.416), which exceeds the standard significance threshold of 0.05. Accordingly, the sub-hypothesis (H5.2.a), which posits that there are differences in consumers' responses toward stockpiling food commodities based on gender, regarding social factors is rejected.

4.5.2.5.1.10 Testing of H5.3. b

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on age regarding social factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the age variable in the study sample (less than 20 years, 20-40 years, 40-60 years, more than 60 years). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 26 Results of ANOVA Test for Age Differences in Social Factors Affecting Flour Stockpiling

Variable	F	Sig
Age	0.908	0.560

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward social factors based on age. The F-value was (0.908) with a significance level (Sig.) of (0.560), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different age groups are not statistically significant. Therefore, the sub-hypothesis (H5.3.b), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding social factors, is rejected.

4.5.2.5.1.11Testing of H5.3. c

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on income regarding social factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the income variable in the study sample (less than 1000 NIS, 1000-3000 NIS, 3000 – 5000 NIS, more than 5000 NIS). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 27 Results of ANOVA Test for Income Differences in Social Factors Affecting Flour Stockpiling

Variable	F	Sig
income	.577	0.900

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward social factors based on income. The F-value was (.577) with a significance level (Sig.) of (0.900), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different income groups are not statistically significant. Therefore, the sub-hypothesis (H5.2.c), which posits that there are

differences in consumer responses toward stockpiling food commodities based on age regarding social factors, is rejected.

4.5.2.5.1.12Testing of H5.3. d

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on educational level regarding social factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the educational level variable in the study sample (primary or below, middle, secondary, university). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 28 Results of ANOVA Test for Educational Level Differences in Social Factors Affecting Flour Stockpiling

Variable	F	Sig
Educational level	1.331	0.177

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward social factors based on educational level. The F-value was (1.331) with a significance level (Sig.) of (0.177), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different income groups are not statistically significant. Therefore, the sub-hypothesis (H5.3.d), which posits that there are differences in consumer responses toward stockpiling food commodities based on educational level regarding social factors, is rejected.

4.5.2.5.1.13Testing of H5.4.a

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on gender (Male/Female) regarding psychological factors.

To test this sub-hypothesis, an independent samples t-test was performed to examine whether gender (male/female) influences consumers' evaluation of psychological factors in the decision to stockpile flour as shown in the following table:

Table 29 Results of Independent Samples T-Test for Gender Differences in Psychological Factors Affecting Flour Stockpiling

Gender	N	Mean	Mean difference	T - value	sig
Male	159	4.0575	-0.05239	-0.780	0.218
Female	130	4.1099			

The table indicates that there are no statistically significant differences in consumers' responses regarding psychological factors based on gender, as the t-value was (−0. 980) with a significance level of (0.218), which exceeds the standard significance threshold of 0.05. Accordingly, the sub-hypothesis (H5.4.a), which posits that there are differences in consumers' responses toward stockpiling food commodities based on gender, regarding psychological factors is rejected.

4.5.2.5.1.14 Testing of H5.4. b

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on age regarding psychological factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than

two independent categories within the age variable in the study sample (less than 20 years, 20-40 years, 40-60 years, more than 60 years). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 30 Results of ANOVA Test for Age Differences in Psychological Factors Affecting Flour Stockpiling

Variable	F	Sig
Age	0.980	0.486

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward psychological factors based on age. The F-value was (0.980) with a significance level (Sig.) of (0.486), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different age groups are not statistically significant. Therefore, the sub-hypothesis (H5.3.b), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding psychological factors, is rejected.

4.5.2.5.1.15Testing of H5.4. c

This hypothesis states that there are differences in consumer toward stockpiling food commodities responses based on income regarding psychological factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the income variable in the study sample (less than 1000 NIS, 1000-3000 NIS, 3000 – 5000 NIS, more than 5000 NIS). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 31Results of ANOVA Test for Income Differences in Psychological Factors Affecting Flour Stockpiling

Variable	F	Sig
income	. 775	0.743

The results of the ANOVA test indicate that there are no statistically significant differences in consumer responses toward psychological factors based on income. The F-value was (.775) with a significance level (Sig.) of (0.743), which is greater than the commonly accepted threshold of 0.05. This implies that the variations observed in the means of the different income groups are not statistically significant. Therefore, the sub-hypothesis (H5.4.c), which posits that there are differences in consumer responses toward stockpiling food commodities based on age regarding psychological factors, is rejected.

4.5.2.5.1.16Testing of H5. 4. d

This hypothesis states that there are differences in consumer responses toward stockpiling food commodities based on educational level regarding psychological factors.

To test this sub-hypothesis, an Analysis of Variance (ANOVA) was used, as there are more than two independent categories within the educational level variable in the study sample (primary or below, middle, secondary, university). The ANOVA test allows for comparing the means of multiple groups to determine whether there are any statistically significant differences between them. The results are shown in the table below:

Table 32 Results of ANOVA Test for Educational Level Differences in Psychological Factors Affecting Flour Stockpiling

Variable	F	Sig
Educational level	2.042	0.006

As shown in the table above, the results indicate statistically significant differences in consumer responses related to psychological factors based on educational level. The F-value was (2.042) with a significance level of (0.006), which is less than the standard threshold of 0.05. This indicates that educational level plays a role in shaping perceptions of psychological factors on stockpiling behavior. Therefore, the sub-hypothesis (H5.4.d) is accepted.

4.6 Conclusion of the analysis chapter

Based on the preceding analysis, it becomes evident that the decision to stockpile flour during the crisis was not a random or purely individual act, but rather the outcome of a complex interplay of economic, psychological, social, and situational factors. The numbers presented throughout this chapter are not merely statistical value, they carry stories and meanings that reflect a lived reality marked by hardship, uncertainty, and survival. The findings demonstrate how fear, financial constraints, social pressures, and contextual challenges converged at a moment of crisis, shaping a collective behavioral response centered around securing a basic necessity like flour. Importantly, these results go beyond simply supporting the study's hypotheses; they offer a window into the human dimension of consumer behavior in times of crisis. With this foundation, the next chapter will present the study's results in greater depth, aiming to interpret them through both theoretical frameworks and the lived experiences that influenced participants' decisions.

5 RESULT AND RECOMMENDATION

5.1 Results of the study

This study followed the methodological steps of scientific research and sought to address a topic that is rarely explored, despite its significant relevance particularly in times of crises and wars. Given the urgent need to understand how consumer behavior shifts under such conditions, this research aimed to identify the factors influencing the stockpiling of food commodities.

The study was conducted on a sample of 391 participants, and the data were analyzed using the statistical methods outlined in the previous chapter. Through this analysis, the following results emerged:

1. Widespread Flour Stockpiling Behavior**:** Approximately 74% of the participants reported that they stockpiled flour during the war. This high percentage reflects how widespread this behavior was among the study sample. The findings suggest that the decision to stockpile was not only driven by actual flour shortages, but also by other contributing factors most notably, the fear of running out in the future and the uncertainty surrounding the crisis.

2. Significant Impact of the Four Studied Factors**:** Statistical analyses revealed that all four factors examined in the study (economic, situational, social, and psychological) had a significant influence on individuals' decisions to stockpile flour.

    - Economic factors showed a strong effect (Cohen's d = 0.873).
    - Situational factors had a similarly strong impact (Cohen's d = 0.874).
    - Social factors exhibited an even stronger influence (Cohen's d = 1.241), highlighting the role of collective behavior.
    - Psychological factors had the most substantial impact (Cohen's d = 1.905), indicating the deep emotional toll the war has had on individuals in Gaza.

3. Psychological Factors as a Primary Driver: Psychological factors recorded the highest mean scores, reflecting how fear, anxiety, and the desire for safety were powerful motivators for

stockpiling behavior. In such a volatile and distressing environment, stockpiling was not merely a practical act, it also served as a coping mechanism, offering individuals a sense of control and emotional relief.

4. Differences Associated with Educational Level: The results indicated statistically significant differences in how participants assessed the influencing factors based on their level of education. This suggests that educational attainment may be linked to differences in awareness and behavioral response to crises.

5. Absence of Differences by Gender or Age: Contrary to some expectations, the results did not reveal statistically significant differences in stockpiling behavior based on gender or age groups. This may indicate that the overwhelming pressure of the war affected people across all demographic categories in a similar way, leading to a unified behavioral response.

5.2 Implications of the Results

The results of this study reflect a more complex human reality rather than just numerical data. The decision to stockpile flour, although seemingly an individual choice, stems from a complex interaction between economic need, daily pressures, societal influence, and psychological factors. This means that consumer behavior during crises cannot be explained solely by the logic of supply and demand; it must be viewed through a broader lens that includes social and emotional dimensions, especially during times of war when the shock is collective. Under these circumstances, flour transforms from a mere food commodity into a symbol of safety and survival.

Consumers during crises do not make decisions solely based on immediate needs or pure economic values. They are also influenced by feelings of fear and uncertainty that accompany emergency situations.

5.3 Recommendations

In light of the findings of this study, which demonstrated that various factors influence consumer behavior in stockpiling food commodities during crises, a set of recommendations can be formulated:

1. Increase the strategic stockpile of essential food items in anticipation of any emergency. This stockpile should be geographically distributed in a fair manner and stored in ways that comply with safety standards, ensuring it can be used promptly when needed without delay.
2. Adopt the use of moisture-resistant and water-proof packaging for flour storage to prevent moisture penetration, protect it from spoilage, and maintain its quality during stockpiling.
3. The increase in demand for essential food items during crises requires intensifying efforts by the relevant authorities to respond to this situation.
4. Expand the role of humanitarian organizations by supporting them to increase their capacity to distribute food supplies in emergency situations.
5. The study recommends the need to pressure the international community to assume responsibility in protecting food and relief distribution centers from intentional targeting, as these are civilian facilities that are protected under international humanitarian law.

5.4 Future Research

This study focused on analyzing the factors influencing consumer behavior in storing food products during crises. Based on the results obtained and considering the nature of this subject, there are still several related topics that warrant further detailed studies, such as:

1. A comparative analysis of stockpiling behavior across different crises could help reveal how motivations and responses vary depending on the nature and context of each crisis, shedding light on patterns that are either unique or consistent across different emergency

situations.

2. Investigating the long-term effects of crises on consumer behavior would be valuable in understanding how stockpiling tendencies evolve over time. whether they persist beyond the crisis or fade once the situation stabilizes.

3. Exploring the role of media and social media in shaping stockpiling behavior during crises is also important, as these platforms may either fuel public fear and panic or help calm anxieties, significantly affecting consumers' actions.

4. Expanding the scope of research to include other essential commodities beyond flour could offer a more comprehensive picture of stockpiling behavior. Examining items such as rice, canned food, or baby formula may reveal different behavioral patterns linked to specific types of goods.

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APPENDIX A

Study Questionnaire

Section One: Demographic Information

1. **Householder Gender:**

   - ☐ Male
   - ☐ Female

2. **Householder Age:**

   - ☐ Under 20 years old
   - ☐ 20 – 40 years old
   - ☐ 40-60 years
   - ☐ Over 60 years old

3. **Householder Educational Level:**

   - ☐ Primary or below
   - ☐ Intermediate
   - ☐ Secondary
   - ☐ University

4. **Household Monthly Income (in Shekels):**

   - ☐ Less than 1,000 NIS
   - ☐ 1,000 – 3,000 NIS

- ☐ 3,000 – 5,000 NIS
- ☐ 5,000 – 7,000 NIS
- ☐ More than 7,000 NIS

5. **Did you stockpile flour during the war?**

   - ☐ Yes
   - ☐ No

6. **Why don't you stockpile flour? (**This question appears just for the people who didn't stockpile flour**)**

   - ☐ Unavailability of Flours' Price
   - ☐ I hadn't thought about stockpiling flour.
   - ☐ Flour spoils due to heat and humidity in the summer or rain seepage in the winter.
   - ☐ Other (please explain the reason)

Items	**Totally agree**	**Agree**	**Neutral**	**Disagree**	**Totally disagree**
Economic factors					

My economic capacity and available income affect my decision to stockpile flour during the war.					
I continue to stockpile flour despite the ongoing increase in its price during the war.					
The lack of available cash (cash on hand) affects my ability to stockpile flour during the war.					
If my income were higher, I would have bought and stockpiled a larger quantity of flour.					
I feel that buying and stockpiling flour now is necessary to avoid a price increase in the near future.					
The rise in the price of regular flour has led me to stockpile flour that is of poor quality, had a bad smell, or was infested.					
Situational factors					
Long queues for flour affect my decision to buy and stockpile it.					
The scarcity of flour drives me to buy larger quantities for stockpiling.					
The limited distribution of flour by relief organizations during the war motivates me to stockpile larger quantities compared to normal circumstances.					

Rumors about flour shortages or price increases encourage me to stockpile more of it.					
If I can't find flour of good quality, I resort to buying lower quality or spoiled flour for stockpile.					
Social factors					
When I see others stockpiling flour, I feel that I should stockpile it too.					
Social pressures from my family or friends influence my decision to stockpile flour during the war.					
My family or community encourages me to stockpile any type of flour, even if it is of low quality, out of fear of its shortage.					
I observe the stockpile behavior of those around me to guide my decisions on how much flour to stockpile.					
I feel that stockpiling flour during the war is a socially accepted behavior in the area I live in.					
Psychological factors					
The psychological stress caused by the war affects my decision about stockpile flour.					
The escalation of bombing and violence during the war drives me to stockpile large quantities of flour.					

When I see others stockpiling large quantities of flour, I feel concerned about it running out.					
When I see others stockpiling flour, I feel psychological pressure that pushes me to do the same.					
I stockpile flour to alleviate the fear and anxiety I feel during the war regarding the availability of food.					
Stockpiling large quantities of flour makes me feel safe and reassured, as it ensures the availability of food I can consume.					
The fear of a flour shortage made me accept stockpiling any kind of flour, even if it is of poor quality, rather than having no flour at all.					