

YEDITEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES

**NAVIGATING SUSTAINABLE CONSUMER BEHAVIOR:
A COMPREHENSIVE STUDY ON MOTIVATORS AND MESSAGE
STRATEGIES FOR SUBOPTIMAL FOOD CONSUMPTION**

Yudum Tuğçe Erkli

Istanbul - 2024

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STRATEGIES FOR SUBOPTIMAL FOOD CONSUMPTION

By

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DECLARATION OF ORIGINALITY

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ABSTRACT

NAVIGATING SUSTAINABLE CONSUMER BEHAVIOR: A COMPREHENSIVE STUDY ON MOTIVATORS AND MESSAGE STRATEGIES FOR SUBOPTIMAL FOOD CONSUMPTION

The global challenge of food waste spurs innovative approaches, particularly in the post-production phase, with businesses focusing on food waste reduction through the sale of suboptimal but edible food products. This dissertation explores into the motivations driving consumers to adapt such alternatives and explores the effectiveness of message content and sources in creating affective and behavioral responses by using exploratory sequential mixed method approach. This approach begins with qualitative interviews to understand motivations related to the consumption of suboptimal foods, then develops based on the findings from this phase and two quantitative studies (two experiments) are implemented to test this model by aiming to understand sustainability communication in terms of suboptimal foods. The main objectives are twofold: (1) to clarify consumer motivations for reducing food waste and choosing for suboptimal foods through a qualitative study, and (2) to assess the impact of message appeal (sensual, guilty, informational) and source (brand or Social Media Influencers) on Instagram, employing a quantitative study with a focus on brand attitude, purchase intention, and word-of-mouth (WOM) communication through quantitative studies. Qualitative findings highlight the prominence of food waste avoidance and economic saving as primary motivators. In the quantitative studies, guilty message appeals prove more effective in shaping brand attitude, while informational appeals result in higher purchase intention and positive WOM due to a target audience with low familiarity. While existing literature suggests that influencer marketing has a significant impact as a message source, it is surprising that no significant differences are observed in the influence of message source on brand attitude, purchase intention, and word-of-mouth (WOM) in this study, highlighting the importance of tailoring message strategies to brand familiarity. Additionally, the study explores the intersection of sustainability communication and the Elaboration Likelihood Model (ELM) theory, revealing that a central route, emphasizing detailed information, aligns with effective communication strategies for promoting sustainable behavior. In

conclusion, this dissertation not only sheds light on consumer motivations in reducing food waste and suboptimal food consumptions but also provides valuable insights into tailoring message strategies for maximum impact based on brand familiarity. Since the study is conducted within a real-world market, these findings contribute to the evolving field of sustainability communication and offer practical implications for businesses aiming to promote the consumption of suboptimal foods as a sustainable waste management solution.

Keywords: Suboptimal food, message appeal, message source, consumer behavior, consumer attitude, food waste reduction, sustainability, sustainability communication, sustainable food company, sustainable food consumption, Elaboration Likelihood Model

ÖZET

SÜRDÜRÜLEBİLİR TÜKETİCİ DAVRANIŞINI YÖNLENDİRME: STANDART ALTI GIDA TÜKETİMİNE YÖNELİK MOTİVATÖRLER VE MESAJ STRATEJİLERİ ÜZERİNE KAPSAMLI BİR ÇALIŞMA

Gıda atıklarıyla ilgili küresel sorun, işletmelerin optimal olmayan ancak yenilebilir gıda ürünlerinin satışı yoluyla gıda atıklarının azaltılmasına odaklanarak; özellikle üretim sonrası aşamada yenilikçi yaklaşımları teşvik etmektedir. Bu doktora tezi, tüketicileri bu tür alternatiflere uyum sağlamaya iten motivasyonları; ve keşfedici sıralı karma yöntem yaklaşımını kullanarak mesaj içeriğinin ve mesaj kaynağının duygusal ve davranışsal tepkiler yaratmadaki etkinliğini araştırmaktadır. Bu yaklaşım, optimal olmayan gıdaların tüketimiyle ilgili motivasyonları anlamak için nitel görüşmelerle başlamakta; ve daha sonra bu aşamadan elde edilen bulgulara dayanarak ve sürdürülebilirlik iletişimini optimal olmayan gıda açısından anlamayı amaçlayarak, bu modeli test etmek için iki niceliksel çalışma (iki deney) ile gelişmektedir. Bu çalışmada ana hedefler iki yönlüdür: (1) nitel bir çalışma yoluyla gıda israfını azaltmak ve optimal olmayan yiyecekleri seçmek için tüketici motivasyonlarını açıklığa kavuşturmak; ve (2) Instagram aracılığıyla mesaj çekiciliğinin (duyusal, suçlu, bilgilendirici) ve kaynağının (marka veya sosyal medya etkileyicileri), niceliksel çalışmalar aracılığıyla marka tutumu, satın alma niyeti, ağızdan ağıza iletişiminin etkisini değerlendirmek. Niteliksel bulgular, gıda israfından kaçınmanın ve ekonomik tasarrufun temel motivasyon unsurları olarak öne çıktığını vurgulamaktadır. Nicel çalışmalarda ise, suçluluk mesajının marka tutumunu şekillendirmede daha etkili olduğu kanıtlanırken, bilgilendirici mesajlar, düşük aşinalığa sahip bir hedef kitle nedeniyle daha yüksek satın alma niyeti ve olumlu ağızdan ağıza iletişim ile sonuçlanmaktadır. Mevcut literatür, etkileyici pazarlamanın bir mesaj kaynağı olarak önemli bir etkiye sahip olduğunu öne sürerken, mesaj stratejilerini marka bilinirliğine göre uyarlamanın önemini vurgulayarak, mesaj kaynağının marka tutumu, satın alma niyeti ve ağızdan ağıza iletişimi üzerindeki etkisinde önemli bir farklılık gözlenmemesi şaşırtıcıdır. Ayrıca bu çalışma, sürdürülebilirlik iletişimi ile Ayrıntılandırma Olasılığı Modeli teorisinin kesişimini araştırmakta ve ayrıntılı bilgileri

vurgulayan merkezi bir rotanın, sürdürülebilir davranışı teşvik etmek için etkili iletişim stratejileriyle uyumlu olduğunu ortaya koymaktadır. Sonuç olarak, bu tez yalnızca gıda israfını ve optimal olmayan gıda tüketimini azaltmada tüketici motivasyonlarına ışık tutmakla kalmamakta; aynı zamanda marka bilinirliğine dayalı olarak maksimum etki için mesaj stratejilerinin uyarlanması konusunda da değerli bilgiler sağlamaktadır. Çalışma gerçek dünya pazarında yürütüldüğünden, bu bulgular gelişen sürdürülebilirlik iletişimi alanına katkıda bulunmakta ve sürdürülebilir bir atık yönetimi çözümü olarak optimal olmayan gıdaların tüketimini teşvik etmeyi amaçlayan işletmeler için pratik çıkarımlar sunmaktadır.

Anahtar Kelimeler: optimal olmayan gıda, standart altı gıda, mesaj çekiciliği, mesaj kaynağı, tüketici davranışı, tüketici tutumu, gıda israfı azaltma, sürdürülebilirlik, sürdürülebilirlik iletişimi, sürdürülebilir gıda şirketi, sürdürülebilir gıda tüketimi, Ayrıntılandırma Olasılığı Modeli

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LIST OF ABBREVIATIONS

ELM	Elaboration Likelihood Model
BA	Brand Attitude
BF	Brand Familiarity
CA	Content Attitude (attitude toward image)
ELM	Elaboration Likelihood Model
ES	Economic Saving
FAO	Food and Agriculture Organization
FWA	Food Waste Avoidance
IAM	Information Adoption Model
INT	Intention (purchase intention)
MA	Message Appeal
MS	Message Source
SDG	Sustainability Development Goal
SMI	Social Media Influencer
WOM	Word-of-Mouth

1. INTRODUCTION

In recent years, the global food industry has grown significantly, increasing sustainability-related issues in environmental, economic and social terms (van der Haar & Zeinstra, 2019, p. 7). An ecologically sustainable food system; while addressing various factors such as biodiversity, water, soil, animal and plant health, carbon and water footprints (FAO, 2018, p. 4); aims to strengthen the economy and increase welfare in issues such as creating value among stakeholders, fair wages, state taxes, commercial profits and improvements in food supply to consumers (FAO, 2018, p. 4), without harming the environment by integrating with the economic dimension (Ekşioğlu et al., 2021). This concept also extends its impact to social development, with an emphasis on health, quality of life, education, socio-cultural benefits and animal welfare (FAO, 2018, p. 4).

To promote a sustainable and environmentally friendly food system, upstream (agriculture) and downstream (retail and consumption) stages of the supply chain are taken into account (Fan, 2020). This process, which is emphasized to have a holistic approach (Bilici and Parlak, 2022; Talukdar, 2018), starts with environmentally friendly agricultural practices, responsible resource use and efficient resource management (Melissen and Sauer, 2019; Fan, 2020). Specifically, the downstream stage at the retail and consumer consumption level includes promoting responsible consumption patterns among sustainable practices, reducing food waste at the consumer level and providing clear information about sustainable product choices (Fan, 2020). Therefore, addressing food waste for sustainability has a significant importance (Zhong et al., 2016).

In the food industry, when the relationship between sustainability and food waste is taken into account, economic, environmental and social consequences come to the fore again (FAO, 2021). According to the Food and Agriculture Organization of the United Nations (FAO), about one-third of food is wasted each year (Zhong et al., 2016). When food waste reaches the landfill, it decomposes without access to oxygen, producing methane gas, which is 20 times more deadly than carbon dioxide (Payne-Palacio and Thesis, 2016, p. 340). Additionally, the large amounts of resources invested and wasted

in food production increase ecological damage by causing water, energy and soil depletion (Payne-Palacio and Thesis, 2016, p. 340). While food waste leads to loss of revenue for businesses and increased costs for consumers, it maintains an unsustainable cycle that strains economies around the world (Tekiner et al., 2021). Moreover, the unequal distribution of food waste leads problems around the world (Liegeard and Manning, 2020). This situation causes food demand to increase and prices to rise with the effect of the increasing population (FAO, 2019), making access to food difficult for people at the poverty line (Liegeard and Manning, 2020).

In this context, since the need to reduce waste is highlighted by the potential to create a more resilient and sustainable global food system (Bolayır and Ergülen, 2017, 2103), various advanced initiatives to reduce food waste have emerged around the world (Bolayır and Ergülen, 2017). These efforts exemplify collaborative efforts focused on solving the problem of food waste and adopting more sustainable practices in food production and consumption (Çoban and Dündar, 2020) such as improving communication between retailers, the use of digital solutions and campaigns to raise public awareness (van der Haar and Zeinstra, 2019).

As an example of initiatives to reduce food waste, the United Nations' Sustainable Development Goals (SDGs) include the target (12.3) of halving per capita global food waste by 2030 (UN, 2015). While FAO and Messe Düsseldorf's "Save Food" campaign (FAO, n.d.; TİSVA, 2022, p. 51) and the United Kingdom's food waste prevention campaign are steps taken in this direction, the "Love Food Hate Waste" campaign is also an example of coordinated efforts to decrease food waste and raise awareness (Mattar et al., 2018; Schanes et al., 2018).

Moreover, at the retail and consumer consumption level, campaigns are associated with promoting responsible consumption patterns among sustainable practices, reducing food waste at the consumer level and sustainable product choices have also come to the fore (van der Haar and Zeinstra, 2019). In this context, organizations such as hotels, restaurants, cafeterias, market chains, food manufacturers and distributors sell uneaten, suboptimal food products to consumers at more affordable prices and prevent food waste

through practices such as "Too Good To Go" in Europe and "Fazla iyi" in Turkey which emphasize "minimizing post-production food waste" (Fazla, n.d.; Too Good To Go, n.d.).

Suboptimal food refers to products that do not deviate from normal or optimal standards but are identified based on factors such as appearance, date labeling or packaging (Aschemann-Witzel et al., 2015). In particular, consuming suboptimal foods emerges as a pragmatic approach that offers the dual benefits of reducing post-production food waste, minimizing environmental impact (Puteri et al., 2022) and providing consumers with access to discounted prices (van der Haar and Zeinstra, 2019). Consumer perceptions differ on suboptimal food consumption; some consumers choose to save costs by accepting defects, while others prioritize appearance and quality (de Hooze et al., 2017; Melbye et al., 2017).

A significant percentage of food waste results from suboptimal food which is perceived by consumers to be of lower value, often linked to approaching expiration dates, changes in appearance or packaging damage (Aschemann-Witzel et al., 2019). Therefore, it is important to motivate consumers who have concerns about its standard and safety to encourage the acceptance of suboptimal products by marketing strategies (Louis and Lombart, 2018; van Giesen and de Hooze, 2019). In this context, focusing on sustainability communication to increase consumers' awareness of sustainable products and services and to positively influence consumer attitudes and behaviors (Kapoor et al., 2020).

In the field of marketing, the symbiotic relationship between sustainability communication and social media has become important as businesses use these platforms not only to share information but also to promote and develop awareness of sustainable products and services in terms of food waste reduction (Jenkins et al., 2022). While the social media platform showing the most significant growth in Turkey in the first half of 2023 is Instagram (Inbusiness, 2023), it has also a potential for spreading sustainability messages (Nusair, 2020).

In addition the influence of social media (Erkli, 2022), the type of message appeal and the selection of the appropriate message source, are key factors affecting consumer attitudes and behaviors (Kapoor et al., 2020). While emotional or rational appeals can be used to convey sustainability messages (Moro and Rita, 2018; Tanford et al., 2020), it also matters whether the message is delivered directly from the company or through a Social Media Influencer (SMI) (Kapoor et al., 2020). Understanding these dynamics is critical to determining the impact of sustainability communications with consumers. Therefore, striking the right balance between the appeal of the message and its provenance is crucial to creating a genuine connection and gaining consumer commitment to sustainable practices (Kronrod et al., 2012; Lyon and Montgomery, 2013, Kim and Kim, 2014; Cozzio et al., 2020).

Moreover, the effectiveness of message appeal and source in altering consumer attitudes varies depending on the level of involvement and motivation consumers have when processing information (Murkherjee, 2002; Petty et al., 1983). Therefore, the Elaboration Likelihood Model (ELM) plays a crucial role which provides an understanding about the varying degrees of cognitive elaboration that individuals undertake when processing persuasive messages (Petty and Cacioppo, 1984) by focusing the impact on message appeal (Andreu et al., 2015; Rhee and Jung, 2019; Jung and Villegas 2011; Dens and De Pelsmacker, 2010), message source on consumer responses (Teng et al., 2014; Nadezhda and Zeina, 2017; Farivar et al., 2023).

While existing studies in the literature shed light on obtaining information on matters mentioned above, they also bring up gaps in certain areas. The current literature provides information about suboptimal food products in terms of barriers affecting suboptimal food consumption, retailers' marketing efforts regarding sustainable products, communication styles, technological interventions and strategies to reduce food waste (de Hooge et al., 2022; Puteri et al., 2022; Aschemann-Witzel, 2018; Hartmann et al., 2021; Mumtaz et al., 2022; Ganguly and Robb, 2022). However, the concept of suboptimal food is unclear and in the new consumer context (de Hooge et al., 2022), there is insufficient research on this topic, indicating that understanding of the marketing of suboptimal foods and consumer-driven actions is evolving (Sutinen, 2022; Aschemann-Witzel et al., 2019; Tufail et al., 2020). Therefore, the existing literature lacks inclusion of findings regarding

the utilization of a diverse sample (van Herpen and Jaegers, 2022; Rhee and Jung, 2019), real-life scenarios (van Herpen and Jaegers, 2022), qualitative studies aimed at comprehending consumers' motivations and emotions regarding sustainability communication (Aschemann-Witzel et al., 2018) and the creation of communication ideas, particularly concerning suboptimal food products. Moreover, there is a few of research in the existing literature addressing the effectiveness of persuasive communication about sustainability and the level of involvement and motivation consumers have when processing information (Andreu et al., 2015), despite the increasing importance of sustainable approaches in the food industry, especially in regions such as Turkey (Tekiner et al., 2021).

In the light of these information, four primary gaps emerge in the field of suboptimal food consumption. These gaps encompass: (1) expanding research findings to more practical scenarios such as actual purchases (van Herpen and Jaegers, 2022) with different sample of participants (van Herpen and Jaegers, 2022; Rhee and Jung, 2019); (2) exploring more comprehensively how sustainability communication strategies affect consumers' motivation (Teng et al., 2021), extending beyond environmental considerations to include economic perspectives as well (Öztürk and Tekeli, 2021); (3) studying consumers perception and decision within real-world market environments through qualitative studies (Aschemann-Witzel et al., 2018); and (4) exploring consumers' emotional responses and connections in a food waste campaign, with a focus on understanding the campaign's entire way from idea generation to outcomes, including the evolution of ideas and assumptions through negotiations among stakeholders (Närvänen et al., 2018). The gaps which became the subjects targeted to be applied in this study by following four research questions:

RQ1: What are the underlying motivations that guide consumers towards initiatives focused on reducing food waste and purchasing suboptimal foods items?

RQ2: Which type of message appeal (emotional vs. rational) distributed through social media presents greater effectiveness in fostering favorable consumer attitudes and behaviors by taking different motivations into consideration?

RQ3: Does the source of the message (company vs. SMI) influence consumers' attitudes and behavioral tendencies through social media?

RQ4: Does the effectiveness of message appeal and source in altering consumer attitudes and behaviors vary depending on motivation consumers have when processing information?

More specifically, the main aim of this dissertation is to understand (1) the motivations of consumers to reduce wasted food and to purchase suboptimal foods in different groups of consumers; (2) the effectiveness of message appeals (emotional vs. rational) on social media (Instagram) by associating motivational factors; (3) the influence of message source (company vs. SMI) to create affective and behavioral reactions; (4) the role of message appeal and source in modifying consumer responses is affected by the level of involvement and motivation during information processing.

Moreover, this study aims to undertake a realistic investigation to comprehend consumers' responses and their interactions with food waste campaigns and messages. In this regard, rather than focusing on a hypothetical brand, a lesser-known sustainable food brand is aimed to be taken into consideration by eliminating any prejudices that consumers may have about well-known brands (Khan and Fatma, 2023; Macdonald and Sharp, 2000). Additionally, the purpose is to enhance the generalizability and diversity of the study by selecting Istanbul as a representative sample of the study; since Turkey's most populous and diverse city, which also experiences significant internal migration; and reflecting the average age and equal gender distribution of Turkey (TÜİK 2022a, b). Finally, the objective of this study is to compare theoretical knowledge with practical applications regarding consumers' involvement and motivation levels during information processing of messages.

Based on the purposes of the study, the research methodology was designed as an exploratory sequential mixed method (Creswell, 2014) which begins with qualitative interviews to understand motivations related to the consumption of suboptimal foods and addresses the first research question of the study. A conceptual model was then developed based on the findings from this phase and two quantitative studies (two experiments) were implemented to test the model by aiming to understand sustainability communication in terms of suboptimal foods which focuses on the remaining research questions. This

exploratory sequential mixed methods design serves a developmental purpose aimed at assessing whether it can be generalized to a large population sample (Creswell, 2014).

Thus, initially, the literature review addresses two main parts: (1) sustainability issues in the food industry, food waste and reduction targets as well as suboptimal food consumption; (2) sustainability communication, which focuses on message appeal, message source and their impact on consumer attitudes and behaviors in social media; including the impact of the ELM on message appeal, motivation and message source. Following this, the analytical approach is explained in detail to illustrate the exploratory sequential mixed methods design. Drawing from the insights within the first part of the literature, the study provides detailed information regarding the sample design, survey content of the qualitative study and followed by the findings and discussion. Moving on, the conceptual framework and hypotheses development are outlined along with the presentation of the conceptual model, leveraging the information provided in the second part of the literature. Next, the methodology of the quantitative study covers the sampling procedure, measurement scales, stimulus development and testing, pretesting of message appeals and scales and finally, results were detailed along with the discussions, limitations and future research directions.

2. LITERATURE REVIEW

This literature review section presents as a comprehensive review of the focus areas of the dissertation, organized into two separate parts. The first part primarily addresses the concepts of sustainability, food waste and suboptimal food. It starts with a focus on sustainability in the food industry and then addresses the complexities of food waste in terms of definition, impacts, global and Turkish dimensions and the need for reduction along with existing initiatives. The discussion then shifts towards suboptimal food consumption and related marketing strategies designed to motivate consumers, follows by an in-depth analysis of existing studies in this specific area.

In the second part, the literature turns towards the marketing aspect of the dissertation, focusing on sustainability communication and the theoretical frameworks that influence its structure by focusing on social media. This part has emerged through an attentive review of message appeals, distinguishing between emotional (positive and negative) and rational appeals and message sources, highlighting the roles played by companies and Social Media Influencers (SMIs). Furthermore, consumer attitudes and behaviors regarding suboptimal food are taken into consideration, focusing on brand attitude, intention to purchase, and word-of-mouth (WOM) marketing factors using the theoretical lens of the Elaboration Likelihood Model (ELM).

2.1. Part-I

2.1.1. Sustainability in the Food Industry

The concept of sustainability holds diverse definitions across different fields. In economics, it emphasizes the maintenance of living standards, while environmental science focuses on the preservation of ecological life (Yeni, 2014). Sustainability, in this context, is understood as the effective management of ecosystems for an indefinite cycle (Chapin et al., 1996) and the preservation of Earth's ability to support humanity (Salomone, 2014).

Within the broader framework of sustainability, a sustainable food system (SFS) is identified by the simultaneous achievement of food security and nutrition while safeguarding the crucial economic, social, and environmental foundations for the well-being of present and future generations (FAO, 2018, p. 1). Therefore, this comprehensive approach recognizes three interconnected dimensions: ecological, economic and social (Vermeir and Verbeke, 2006).

In line with this holistic approach, an ecologically sustainable food system addresses various factors, including biodiversity, water, soil, animal and plant health, carbon and water footprints (FAO, 2018, p. 4). Importantly, this ecological perspective seamlessly integrates with the economic dimension, aiming to strengthen the economy while ensuring enhanced welfare without environmental harm (Ekşioğlu et al., 2021). Economic strategies within a sustainable food system involve creating value for stakeholders, encompassing fair wages, government taxes, business profits, and improvements in food supplies to consumers (FAO, 2018, p. 4). The concept further extends its influence to social development, emphasizing health, quality of life, education, socio-cultural benefits and animal welfare (Ekşioğlu et al., 2021; FAO, 2018, p. 4).

In the global context, the pivotal moment of over 190 countries endorsing the Sustainable Development Goals (SDGs) in 2015 highlights a collective call to action for poverty eradication, environmental protection and ensuring global peace and prosperity by 2030 (Fan, 2020). The urgency of sustainable practices gains momentum with a UN report in 2018 warning about the accelerated impacts of global warming and the need for swift, comprehensive changes across society. Notably, the food industry emerges as a critical sector requiring improvement, contributing significantly to global greenhouse gas emissions through agricultural activities (UN, 2018). Therefore, the imperative for a sustainable food system is underscored, emphasizing the need for profitability, societal benefits and positive environmental impact (FAO, 2018, p. 3).

By integrating sustainability from agriculture to retail and waste management, the food industry aims to minimize its environmental impact, increase resource efficiency and address social concerns related to food production and consumption (Fan, 2020).

Sustainability in the food industry covers a comprehensive approach that starts with environmentally friendly agricultural practices, responsible raw material supply and efficient energy management during production (Melissen and Sauer, 2019; Fan, 2020). As the supply chain moves downstream, sustainable efforts extend to processing, production and distribution, emphasizing waste reduction, energy efficiency and environmentally friendly logistics (Melissen and Sauer, 2019; Fan, 2020). The focus then shifts to retail and consumer consumption, promoting responsible choices and reducing food waste (Zhong et al., 2016).

In the dynamic environment of the food industry, the imperative to strike a careful balance between input and output has become crucial, forcing businesses to adopt sustainable practices throughout their production, storage and delivery processes. Businesses, especially those generating substantial organic waste like restaurants and caterers, can adopt effective approaches (Lan and Zhong, 2016; Camilleri, 2021) such as composting the waste to avoid causing extra carbon dioxide emission or energy consumption (Özilgen, 2017, p.308). Additionally, utilizing digital platforms to deliver products near their expiration date to those in need is highlighted as a way to prevent unnecessary food waste, benefitting both businesses and people in need (Taş and Olum, 2020).

Therefore, the reduction of food waste plays a pivotal role in promoting sustainability and various viewpoints emerge regarding how imperfect, unattractive and suboptimal food (food that may not meet certain cosmetic specifications, such as shape, or may have date labeling indicating it is near expiration, or it could have damaged packaging) items contribute to food waste (de Hooze et al., 2022). In this context, suboptimal foods offer additional avenues for enhancing the sustainability in terms of reducing food waste (Varese et al., 2022).

2.1.2. Food Waste

2.1.2.1. Food Loss vs. Food Waste

While the meanings of the terms "food loss" and "food waste" are commonly used interchangeably, academic literature provides clear distinctions between these two concepts. The consequences and challenges associated with food loss and food waste each have their own unique meaning and not only differ, but also require different solutions. Fundamentally, understanding the nuances between these terms is crucial to addressing the unique problems associated with each and implementing effective solutions (FAO, 2019).

Food loss refers to the reduction in the amount of edible food suitable for human consumption at various stages of the supply chain such as during agricultural production, harvesting or processing. This reduction can include measurable decreases in quantity as well as a decrease in quality, leading to negative impacts on both economic and nutritional value. Food loss is mostly caused by inefficiencies in production, poor infrastructure and lack of suitable storage facilities (FAO, 2019).

In contrast, food waste primarily involves the decision to dispose of safe and edible food that still holds value within the food system. This value could be social, economic, or nutritional and this disposal happens across different levels such as production, distribution, service and households (FAO, 2019). Therefore, it results from consumer behaviors, retail practices and the disposal of edible foods that can be consumed (HLPE, 2014).

2.1.2.2. The Effects of Food Waste

Food waste goes beyond the waste of actual food. It covers a broader impact on basic resources such as land, water, energy and the labor involved in its production (Buzby and Hyman, 2012). In this context, from this perspective, the widespread problem

of food waste resonates globally and continues to have negative effects on environment, economy and society (FAO, 2021).

At the environmental level, the decomposition of food waste in landfills contributes significantly to greenhouse gas emissions and causes climate change (Payne-Palacio and Thesis, 2016). The large amount of resources invested and ultimately wasted in food production leads to depletion of water, energy and soil, further increasing ecological damage (Payne-Palacio and Thesis, 2016, p. 340).

Furthermore, from an economic perspective, wasting food leads to loss of income for businesses and increases costs for consumers. This situation causes the continuation of an unsustainable cycle that strains economies around the world. Moreover, the unequal distribution of food waste further causes inequalities. While wealthy societies can throw away excess food, millions of people in less privileged areas face food insecurity (Tekiner et al., 2021).

Food waste, in addition to its environmental and economic effects, also causes great harm to the moral structure of societies. Food waste has the social impact which makes it more difficult for poor people to access food. The reason for this is the waste of food causes prices to increase. This makes food inaccessible for people living on the poverty line which increases social inequalities. While food waste occurs at various stages of the supply chain from production to consumption, a significant part of the world's population faces hunger and malnutrition (Liegeard and Manning, 2020).

2.1.2.3.Global and Turkish Dimensions of Food Waste

The magnitude of food waste and its impact on the world is staggering. In particular, the effect of increasing population on food waste is quite large. The rapidly increasing population in the world necessitates an rise in the food produced (FAO, 2019). According to the United Nations World Population Forecast (2019), the world population is expected to reach approximately ten billion people by 2050 (UN, n.d.). In addition to more people to feed, increased economic development will allow people to consume more, resulting

in food demand increasing by 60%. While the need for food increases, the deteriorating climate structure also causes various disruptions in the food production process (FAO, 2019).

The United Nations Food and Agriculture Organization (FAO) indicates that about one-third of all the food produced worldwide, which is roughly 1.3 billion tons, is wasted. This waste is worth an astounding \$990 billion (FAO, 2019). If the necessary measures are not taken, it is estimated that the amount of food waste will reach 2.1 billion tons in 2030 and this amount will equal 1.5 trillion dollars (WEF, 2018).

Recognizing the distinct definitions of food loss and food waste, it has come to light that food loss is more prevalent in developing nations, while food waste is higher in developed countries (Özçiçek Dölekoğlu, 2017). Annually, high-income nations discard a quantity of food that nearly matches the entire net food production of sub-Saharan Africa (FAO, 2019). In Europe and North America, each person wastes between 95 to 115 kilograms of food each year. In regions like Africa, South Asia, and Southeast Asia, the amount of wasted food per person is estimated to be around 6 to 11 kilograms. In poorer countries, 40% of food goes to waste before it even reaches the harvest stage due to problems during harvesting and processing. In wealthier countries, most of the wastage happens in stores and when people are consuming the food (Tekiner et al., 2021).

When the numerical data in Turkey is evaluated, according to the Turkey Waste Report, Turkey throws away a massive 26 million tons of food every year, which is valued at 555 billion Turkish Lira (TL) (Tekiner et al., 2021). It's important to note that a significant amount of food also goes to waste when people are using it. In Turkey, as mentioned in the UNEP 2021 report, each person wastes a staggering 93 kilograms of food every year. This adds up to a total of 7.7 million tons each year from households, restaurants and food sellers (UN, 2021).

In this context, the magnitude of food loss and waste both worldwide and in Turkey draws attention. Therefore, due to the negative impacts of food waste on the environment, economy and social issues, responsible consumption practices must be taken into account

to ensure a sustainable and equitable future (Çalca and Ateş, 2022) and the urgent need to reduce food waste is extremely important (Erik and Pekerşen, 2019).

2.1.2.4.Importance of Food Waste Reduction

Reducing food waste is very important in terms of environmental, economic and social issues (Göbel et al., 2015). Recognizing the impact of discarded food on the ecological well-being of the planet, the economic efficiency of supply chains and broader societal impacts, the call to minimize food waste becomes an imperative (Fan, 2020). This multifaceted approach not only addresses the environmental pressure caused by wasted resources; it also underlines the economic losses incurred in food production and distribution processes. In addition, the issue of reducing food waste overlaps with global food security principles and emphasizes equal resource distribution and social responsibility to find solutions to the persistent problem of hunger (FAO, 2021)

First of all, considering the impact of food waste on the environment, food waste is known to contribute significantly to environmental degradation. When food is wasted, resources such as water, energy and agricultural inputs required to produce, transport and process the food are also wasted. In addition, the decay of food in landfills produces methane, a powerful greenhouse gas that seriously contributes to climate change (Liegeard and Manning, 2020). Since this is the main cause of global warming, the life of living creatures in nature is also under threat (Graham-Rowe et al., 2014; Liegeard and Manning, 2020). Thus, by minimizing food waste, the pressure on natural resources is reduced and the damage to the environment is reduced (FAO, 2020).

Secondly, when this issue is considered in terms of economic efficiency, food waste represents a significant economic loss at various stages of the supply chain, from production to consumption (Lipinski et al., 2017). While farmers are exposed to costs in growing crops they cannot deliver, on the other hand, businesses lose revenue when food products are thrown away due to spoilage or aesthetic defects (FAO, 2020). Thus, preventing food waste increases economic efficiency, promotes sustainable business

practices and improves the overall economic sustainability of the food industry (FAO, 2020).

Thirdly, when the issue of reducing food waste is considered from a global food security perspective, the rapidly increasing global population and increasing food demand come to the fore by focusing on global food security. By minimizing waste, it provides the opportunity to direct more food to meet the nutritional needs of the population, especially in regions where food shortages and hunger are common (Graham-Rowe et al., 2014; Liegeard and Manning, 2020). Thus, addressing food waste creates a more equal and sustainable global food system (FAO, 2021).

Fourthly, when this issue is examined from the social responsibility dimension, it comes to the fore that food waste has social consequences that affect communities and individuals. While millions of people around the world go hungry, throwing away edible food highlights a moral and ethical concern. Thus, by reducing food waste, contributing to a more equal distribution of resources and reducing world hunger comes to the fore (Marra, 2013).

Finally, when considering the issue of reducing food waste in terms of protecting resources, it highlights that food production requires a significant amount of land, water and energy. While food is wasted, these resources are also wasted (Buzby and Hyman, 2012). In this way, it is possible to minimize food waste and contribute to the protection of natural resources and sustainable agricultural practices. This ensures that future generations can access natural resources for food production (Bond et al., 2013).

In summary, reducing food waste has become a multifaceted necessity compatible with environmental sustainability, economic efficiency, global food security, social responsibility and resource conservation (Fan, 2020). Addressing this issue spans a range of sectors, from agriculture and manufacturing (upstream) to consumption environments such as supermarkets and homes, to create a more sustainable and responsible approach to food production and consumption (Bilici and Parlak, 2022; Talukdar, 2018).

2.1.2.5. Initiatives for Food Waste Reduction

A number of advanced initiatives aimed at reducing food waste have emerged around the world. These initiatives are examples of collaborative efforts spanning multiple sectors dedicated to solving this problem and creating more sustainable practices in food production and consumption. The food system provides a number of potential strategies, including improved communication between retailers and the implementation of innovative, digital solutions, as well as the dissemination of public awareness campaigns (Horton et al., 2017). To elucidate the details of this challenge, examples from both global and Turkish contexts provide information on the various approaches and measures implemented to reduce food waste.

In 2015, at the United Nations (UN) General Assembly Session, the presidents of member nations, world leaders and non-governmental organizations came together and adopted the Sustainable Development Goals (SDGs). The main objectives have been determined to end extreme poverty, to combat inequality and injustice and to correct climate change. In order to achieve these goals, agreement was reached on 17 global targets (UN, 2015). Among these global goals, the Target 12.3. includes halving per capita global food waste at the retail and consumer sales level by 2030 and reducing food losses in the process of production and supply chain activities, including post-harvest losses (UN, 2015).

Furthermore, a critical response to the intricate challenges posed by food waste necessitates a collaborative and concerted effort between governmental and non-governmental entities, exemplified by initiatives such as the "Save Food" campaign launched by FAO and Messe Düsseldorf, aiming to reduce global food losses and waste by fostering awareness, cooperation, policy development, and investment initiatives in both public and private sectors (FAO, n.d.; TİSVA, 2022, 51). This proactive approach aligns with the global commitment set by the United Nations to halve food loss and waste by the year 2030, underscoring the significance of collective action in addressing the multifaceted issues associated with food waste (TİSVA, 2022, 51).

The UK's 'Love Food Hate Waste' campaign, created in 2007, is seen as the best awareness campaign against food waste in Europe (Mattar et al., 2018; Schanes et al., 2018). The campaign was created by the Waste and Resources Action Program (WRAP), a charity founded in the UK in 2000 (WRAP, n.d.). The Love Food Hate Waste campaign, which is still implemented today, is a very effective organization against food waste. It provides comprehensive information about food preservation, portion planning, correct storage conditions, and shares many recipes for the evaluation of food (WRAP, n.d.).

Moreover, the awareness of the economic implications of food waste with recent recycling efforts, has emerged as a significant factor contributing to the economic prosperity of nations (Bolayır and Ergülen, 2017, p. 2103). This phenomenon is particularly relevant to the tourism sector, attracting the attention of food and beverage establishments. This emphasis is driven by the desire of eateries and similar businesses to operate as financially resilient and environmentally sustainable entities (Çam, 2009, p. 502). To illustrate, in cities like Copenhagen and Lisbon, hotels are using a special system to keep an eye on how much food they're throwing away in their restaurants. This system helps them see exactly what kinds of food are being wasted. With this information, the hotels can change the way they buy food and what they put on their menus so that they don't waste as much. For instance, Hilton hotels started offering a more environmentally friendly menu in 2019 to reduce how much extra food they make (Camilleri, 2021).

Apart from these, in response to the increasing interest and awareness among consumers, businesses have initiated strategies and escalated competitive dynamics (Payne-Palacio and Thesis, 2016). As a result, a variety of initiatives have surfaced across different European countries, such as "Too good to go" "No Food Waste" and "Food Cloud". These initiatives aim to combat or reduce post-production food waste (Weymes and Davies, 2017). The "No Food Waste" application, for instance, ensures that products nearing their expiry date are redirected to individuals in need, with volunteers playing a role in distributing surplus items to these recipients. In doing so, they align with the objectives outlined in the United Nations Sustainable Development Goals, specifically targeting the "World Hunger Free" and "Zero Food Waste" goals (No Food Waste, n.d.).

Specifically, through applications like "Too good To Go" and "Fazla iyi," entities like hotels, restaurants, cafeterias, market chains, food manufacturers and distributors can efficiently manage uneaten, suboptimal food products. These applications facilitate the delivery of suboptimal food products to consumers, who can purchase the surplus food left daily in various establishments at a more affordable price. This approach prevents the wastage of still-edible food products on a large scale (Fazla, n.d.; Too Good To Go, n.d.). Therefore, various stakeholders within the food and beverage sector, including restaurants, hotels, cafeterias, market chains, food manufacturers, and distributors, offer numerous strategies and solutions to mitigate food wastage (Winnnow, n.d.).

From the aforementioned examples, it is evident that "*minimizing post production food waste*" plays a pivotal role in effective food waste reduction. The emphasis on this aspect makes it particularly evident, underlining the need for innovative solutions. In particular, consuming suboptimal food emerges as a pragmatic approach to reducing post-production food waste, offering the dual benefit of minimizing environmental impact and providing consumers with access to discounted prices (van der Haar and Zeinstra, 2019). This approach is aligned with the broader goal of promoting a more sustainable and conscious food system, where the use of suboptimal foods not only reduces waste but also contributes to creating a more economically accessible and environmentally responsible food consumption pattern (de Hooze et al., 2017).

2.1.3. Suboptimal Foods

2.1.3.1. Optimal vs. Suboptimal Foods

Food products can be evaluated in terms of their utilitarian and hedonic properties. When the utilitarian properties are focused on, in the market, food products are categorized as either "optimal" or "suboptimal," with suboptimal food being a major driver of food waste (Melbye et al., 2017).

Optimum foods meet high quality standards in terms of appearance, taste and nutritional value. They generally comply with industry and consumer expectations for

freshness, color, texture and overall visual appeal and are generally marketed at regular prices (Premaratna et al., 2020).

Suboptimal food is defined as “... products that deviate from normal or optimal products, on the basis of (1) appearance standards (in terms of e.g. weight, shape, or size), (2) their date labeling (e.g., close to or beyond the best-before date), or (3) their packaging (e.g., a torn wrapper, a dented can), without deviation on the intrinsic quality or safety” (Aschemann-Witzel et al., 2015 p. 81).

Consumers' perception of suboptimal foods may vary. Some consumers may be willing to accept minor imperfections to save cost, while others may prefer the appearance and quality of optimal foods regardless of price considerations (Aschemann-Witzel et al., 2019). However, consumption of suboptimal foods has an effect on reducing food waste. Thus, consumers actively participate in food waste reduction initiatives (de Hooze et al., 2017).

2.1.3.2.Suboptimal Food Consumption

Suboptimal food consumption includes the practice of reservedly using and consuming food qualities that fail to meet traditional quality standards or have aesthetic defects or are close to expiration (van der Haar and Zeinstra, 2019). Consumers' preference for suboptimal food products can be related to product characteristics, individual traits or situational context (Aschemann-Witzel, 2018). They encompass the degree of suboptimality (de Hooze et al., 2017) and perceived quality (Aschemann-Witzel, 2018), the location of food selection (in-store or at home) (de Hooze et al., 2017), socio-demographics such as age and country (de Hooze et al., 2017), gender (Aschemann-Witzel, 2018) and psychographic variables like value orientation (de Hooze et al., 2017) or pro-environmental traits (Loebnitz et al., 2015).

The reasons for consumers who prefer and consume suboptimal foods are to save costs, reduce waste and promote sustainability (Puteri et al., 2022). While consumers prefer suboptimal food consumption and contribute to efforts aimed at promoting

consumption in a more sustainable and responsible manner (Puteri et al., 2022), on the other hand, a significant percentage of food waste results from suboptimal food which is perceived by consumers to be of lower value, often linked to approaching expiration dates, changes in appearance or packaging damage (Aschemann-Witzel et al., 2019). Therefore, there are certain challenges that avoid wide acceptance and adoption of suboptimal food consumption (de Hooze et al., 2017), since the quality of these items is considered to be diminishing and is associated with increased health and safety concerns (de Hooze et al., 2017; Melbye et al., 2017).

Therefore, consumers' concerns about food safety, limited grasp of the distinction between "use by date" and "best before date", eating habits and lack of motivation to reduce food waste, excessive or impulsive purchases of food products, misuse of food, forgetting to store or consuming, and acting more carelessly about wasting food when they buy affordable food products (van der Haar and Zeinstra, 2019). Therefore, these make it hard for sustainable suboptimal food companies to extend their business (de Hooze et al., 2017). Among these, one of the major factor contributing to food waste is consumers' hesitancy to purchase and consume food that is nearing its expiration date (Zhang et al., 2023). As a result, these negative perceptions lead to adverse effects on consumer attitudes and purchasing behavior, ultimately contributing to more food being wasted (Melbye et al., 2017). Therefore, it is essential to motivate consumers to purchase the suboptimal foods (van Giesen and de Hooze, 2019).

2.1.3.3. Marketing Strategies for Suboptimal Food Consumption

Motivating consumers to purchase and use products that slightly deviate from ideal standards in terms of cosmetic attributes is essential. Research into marketing techniques for suboptimal items has underscored the potency of practical approaches, including emphasizing health benefits, flavor and cost-effectiveness (Louis and Lombart, 2018). Therefore, it is very important to ensure that consumers are aware that food maintains its standard and safety despite these differences, since these marketing strategies offer a sustainable solution to promote the acceptance of suboptimal products (van Giesen and de Hooze, 2019).

Considering these marketing strategies in detail, as van Giesen and de Hooge (2019) suggest, furnishing details about the sustainability dimensions associated with food waste concerning suboptimal items might motivate consumers to adopt sustainable behavior and opt for suboptimal products. Responsible marketing encompassing "ethical" or "green" food, or "cause-related" marketing, frequently accentuates motivations that cater to individual and collective interests, appealing to diverse incentives according to the consumer (van Giesen and de Hooge, 2019). Thus, marketing tactics in pursuit of more environmentally friendly choices may increase consumers' sensitivity to suboptimal products (Aschemann-Witzel et al., 2019).

Furthermore, research conducted in several European countries state that placing suboptimal products in a sustainability framework, particularly emphasizing authenticity, result in increased intention to purchase such products among consumers. Therefore, sustainability positioning requires highlighting the ecological viability of suboptimal products (van Giesen and de Hooge, 2019). Thus, in marketing communications, the relevant incentive is emphasized more clearly at the consumers' decision making stage (Aschemann-Witzel et al., 2019).

Moreover, marketing strategies for such food products have gained prominence in addressing price issues. Offering a price reduction on suboptimal products can serve as an incentive for consumers to buy suboptimal foods (van Giesen and de Hooge, 2019). Aschemann-Witzel et al. (2017) observed that a substantial portion of the reduced-price suboptimal food items offered by retailers were successfully purchased by consumers (Aschemann-Witzel et al., 2017).

2.1.3.4.Motivations of Suboptimal Food Consumption

The term "motivation" finds its origins in the Latin word '*movere*', which means action. Motivation or motives, serves as the driving forces that propel individuals into action, empowering them to accomplish tasks. The foundation of all human behavior rests upon needs. To comprehend consumer behavior comprehensively, it is imperative to grasp both their needs and the underlying reasons (motives) that drive them. In

marketing, strategists develop marketing components to sustain product/service promotion, increase sales, or ensure the sale of additional products. However, it is crucial to consider the motivating factors behind people's purchasing decisions when crafting these strategies (Koç, 2019).

Understanding consumers' motivations for choosing sustainable products is essential in navigating the competitive landscape of the food service sector, where businesses that align with sustainability principles are better equipped to adapt to evolving social, physical and economic conditions (Freeman et al., 2022). Because, rather than simply being the result of a single action, consumer food waste results from a multifaceted set of behaviors shaped by a variety of factors, both conscious and subconscious (Quested et al., 2013).

Motivations behind suboptimal food consumption can be diverse and are often driven by a variety of factors (Aschemann-Witzel, 2018). These motivations include economic savings, food waste avoidance (Aschemann-Witzel, 2018), conscious consumerism (de Hooge et al., 2017), a commitment to addressing sustainability issue (Aschemann-Witzel, 2018), supporting sustainable food companies (van Giesen and de Hooge, 2019), ultimately, relating to emotional factors (Quested et al., 2013).

Suboptimal products are generally sold at a lower price compared to optimal alternatives (Aschemann-Witzel, 2018). Therefore, the presentation of suboptimal food, through colored price tags (Helmert, et al., 2017) and considerations regarding its immediate use in the household on the day of the purchase, in alignment with current meal plans play significant roles to motivate consumers to buy them (Aschemann-Witzel, 2018).

Suboptimal food consumption is consistent with the goal of minimizing food waste. By choosing products that have minor defects or are approaching their expiration date, consumers actively contribute to reducing overall food waste in the supply chain and at the consumer level (Aschemann-Witzel, 2018). In addition, some consumers view suboptimal food consumption as a conscious choice, rejecting the social emphasis on

perfect appearance. Thus, they choose products based on their intrinsic value and nutritional content rather than cosmetic standards (de Hooze et al., 2017).

Moreover, while choosing suboptimal foods fulfills the motive to support sustainability, it is also a way for consumers to support ethical practices in the food industry. This is a source of motivation to support businesses that prioritize sustainability, waste reduction and responsible sourcing (van Giesen and de Hooze, 2019). Furthermore, emotional factors also come into play in terms of suboptimal food consumption. In this sense, feeling guilty is an important source of motivation in reducing food waste (Quested et al., 2013) This stems from the fact that the utilization of guilt appeal in sustainability messages appears more sincere and higher in terms of public morality (Font et al., 2017).

On the other hand, since food waste at home is a behavior that typically occurs behind closed doors with social norms governing this conduct, there may be limited available data on actual food waste behavior (Bellemare et al., 2017). Consequently, the influence of moral norms in explaining the intention not to waste food remains unexplained (Stancu et al., 2016). However, choosing between optimal and suboptimal food items at the time of purchase is a more observable behavioral choice since it occurs in the store and in the presence of others. Thus, this behavior is more likely to serve a distinct role in defining one's identity and expressing personal priorities (Aschemann-Witzel, 2018).

2.1.3.5.Existing Studies on Suboptimal Food Consumption

Previous studies were analyzed to methodically pinpoint and impartially assess existing literature on food waste reduction (i.e. Puteri et al., 2022; Mumtaz et al., 2022) and, more specifically, on suboptimal food consumption (i.e. Aschemann-Witzel, 2018) and marketing (i.e. de Hooze et al., 2022) to offer a structured path for this dissertation and guidance for practitioners to convince consumers to buy more suboptimal food and hence aid sustainability goals (i.e. Hartmann et al., 2021). Since, although there is growing awareness of sustainability around the world, initiatives to reduce food waste,

and increasing interest from consumers, the research on suboptimal foods remains relatively underwhelming, given the ambiguous, unfamiliar and novel scope of the concept of suboptimal food for the consumer (de Hooze et al., 2022).

In this context, PRISMA methodology (Moher et al., 2009) was employed to comprehensively examine existing studies and identify gaps in the literature. By applying the PRISMA methodology, a systematic analysis is performed by allowing for a nuanced understanding of the existing literature (Moher et al., 2009). The focus of this careful review was directed towards key fields of the research as food waste reduction, suboptimality and consumer responses during post-production and/or sales. The existing study was conducted within Scopus database between 2015 – 2022 due to the increase in the number of research on the topic from 2015 onwards. In social science research, “Scopus” with its high standards in including the most extensive multidisciplinary repository of peer-reviewed quality research (Veloutsou and Ruiz-Mafe, 2020) providing more marketing related results than other databases such as the “Web of Knowledge” (Samiee and Chabowski, 2012), is widely accepted. In addition, it is used for reaching sources over a long period (Norris and Oppenheim, 2007).

A three-stage search was used within in all search fields in order to gather information on various elements, including subject area, titles, abstracts, keywords, as well as including each document type, language, country/territory, source type and title, publication stage, affiliation and reference, as well as, comprising the various source types such as journal, book, conference proceeding, book series and trade journal that were written in English.

Initially, the search was made with the keyword “*food waste reduction*” to have a general overview on the topic with all relevant studies covering different aspects of food waste reduction (i.e. before, during and after production). This resulted in 2,323 documents. In the second stage, inclusion criteria were added. The research area was limited by including suboptimality and consumer responses. Since the keyword of suboptimal food and consumer responses could also be written with different terms, alternative terms such as “*sub-optimal food*” OR “*sub-optimality*” OR “*suboptimal*

product” OR “*sub-optimal product*” AND “*consumer*”, “*consumer behavior*”, “*consumption*” and “*marketing*” were added to the search criteria which resulted in 204 documents. In the third stage, exclusion criteria were added. The research area was limited by excluding the keywords of “*food engineering*”, “*agriculture*” and “*food science*”, since it was aimed to focus on post-production and/or sales. This resulted in 44 documents starting from 2017, although it was searched from 2015 (Table 1 provides an overview of the whole process).

Table 1 *Study review selection criteria and sources survived (identification, inclusion, exclusion, screening)*

	<i>Titles</i>	<i>Searching keywords</i>	<i># of studies (n)</i>	<i>Year Range</i>
Identification	Records identified through database searching (Scopus - in all fields, English)	"food waste reduction"	n: 2,323	2015 - 2022
Inclusion	Records included	"food waste reduction" AND "suboptimal food" OR "sub-optimal food" OR "sub-optimality" OR "suboptimal product" OR "sub-optimal product" AND "consumer" OR "consumption" OR "marketing" OR "consumer behavior"	n: 204	2015 - 2022
Exclusion	Records excluded	"food waste reduction" AND "suboptimal food" OR "sub-optimal food" OR "sub-optimality" OR "suboptimal product" OR "sub-optimal product" AND "consumer" OR "consumption" OR "marketing" OR "consumer behavior" AND NOT "agriculture" AND NOT "food engineering" AND NOT "food science"	n: 44	2017*- 2022

* Although it was searched as between the dates of 2015 - 2022, there were no documents before 2017

The decision to conduct a comprehensive search across all fields rather than limiting it to just titles, abstracts, and keywords, has proven to be beneficial. When solely evaluating titles, abstracts, and keywords with the specified criteria, merely four results came up as follows: (1) consumers' purchase intention of suboptimal food using the Behavioral Reasoning Theory (Tufail et al., 2022); (2) consumer behavior towards

suboptimal food products, contributing insights for food waste reduction strategies and marketing actions (Stangherlin et al., 2019); (3) consumers' attitudes towards discounted suboptimal products based on date-based pricing (Cicatiello et al., 2019) and (4) consumer behavior in a sustainable food supply chain, specifically targeting increased acceptance of suboptimal foods (Rohm et al., 2017).

Therefore, in this instance, even though the literature didn't explicitly reference suboptimal food, alternative phrases conveying the same idea might emerge. This approach enabled the discovery of relevant studies that might not have explicitly included the keyword suboptimal food in their title, abstract, or keywords but still pertained to the subject matter. This underscored the importance of a thorough and inclusive research strategy to capture all relevant information and insights.

In existing literature, which takes reducing food waste as the main focus and aims to understand consumer behavior regarding suboptimal foods during post-production and/or during sales, examining the diverse landscape of food waste reduction come to the fore. For example, the literature focuses on retail and marketing strategies, particularly focusing on the marketing of suboptimal and expired foods, encompassing pricing strategies and promotional efforts (i.e. Chang and Su, 2022). Moreover, it sheds light on the influence of environmental claims on food waste prevention from the consumer standpoint (i.e. Chang, 2022), as well as, explores the interplay between consumer attitudes, quality concerns and communication strategies (i.e. Hingston and Noseworthy, 2020). In addressing challenges at the retail level, considerable attention is given to the barriers hindering consumer purchasing of suboptimal food (i.e. Hartmann et al., 2021), emerging as a prominent theme in the existing literature.

Additionally, existing literature converges on the themes of sustainable retail practices, consumer behavior insights, digital technology interventions, socio-cultural perspectives, corporate strategies and the complex interaction between various stakeholders. For instance, it covers a range of topics concerning food waste, such as the influence of expiration date labels on dairy products (i.e. Thompson et al., 2020), the role of green marketing in utilizing digital technologies to reduce food waste (i.e. Gustavo et al., 2021) and the examination of household food waste in emerging nations, taking into

account socioeconomic and sociodemographic factors (i.e. Aschemann-Witzel et al., 2019; von Massow et al., 2019). Furthermore, it highlights reactions from consumers and other stakeholders towards digital platforms (i.e. Mullick et al., 2021) and startups (i.e. Närvänen et al., 2021) aimed at reducing food waste through facilitating food sharing (i.e. Mazzucchelli et al., 2021).

As a result, ranging from grocery retail management and consumer-focused factors affecting food waste, to the integration of suboptimal products into sustainable marketing and leveraging digital platforms to reduce waste, the collective research underscores the need for holistic, context-sensitive approaches to addressing the global food waste problem. Thus, the documents resulting from the search criteria are summarized in Table 2 according to their main themes and the goals of these themes and some documents are included in more than one theme.

Table 2 *Key themes and their aims for the existing literature*

Key Themes	Aim of the Key Themes	References
Food waste in grocery retails	understanding and managing food waste in grocery retail, examining various aspects such as management practices, market-based tools, perspectives of store owners and the emergence of food waste as an issue	Filimonau and Gherbin, 2017; Filimonau and Gherbin, 2020; Horoš and Ruppenthal, 2021; Eičaitė et al., 2022; Rosenlund et al., 2020
Consumer behavior and food waste	studying consumer perspectives, exploring the reasons behind household food waste, consumer attitudes towards suboptimal food, and the effectiveness of marketing strategies and technological interventions	Aschemann-Witzel et al., 2019; Coşkun and Yetkin Özbük, 2020; Thompson et al., 2020; Gustavo et al., 2021; Puteri et al., 2022; Jang and Lee, 2022; Aschemann-Witzel, 2018; Hingston and Noseworthy, 2020; Hartmann et al., 2021; Chang, 2022; Chang and Su, 2022; Bech-Larsen et al., 2019; Aschemann-Witzel et al., 2020; Ang et al., 2021; Mazzucchelli et al., 2021; Hsieh et al., 2021; Mumtaz et al., 2022; LaBarge et al., 2020; Rosenlund et al., 2020; Ganguly and Robb, 2022
Suboptimal food and sustainability	investigating how sustainability and authenticity marketing strategies, as well as consumer habits, influence the acceptance and purchase of suboptimal products	de Hooge et al., 2022; Puteri et al., 2022; Aschemann-Witzel, 2018; Hartmann et al., 2021; Mumtaz et al., 2022; Ganguly and Robb, 2022
Digital technologies and food waste reduction	examining the role of digital technologies in mitigating food waste, exploring topics such as circular economy strategies, mobile applications, and digital platforms for food sharing	de Souza et al., 2021; Wong et al., 2021; Närvänen et al., 2021; Mullick et al., 2021; Saginova et al., 2021; Hsieh et al., 2021; Østergaard and Hanssen, 2018
Social and cultural perspectives	bringing a socio-cultural lens, discussing the role of urbanism, social marketing, and start-ups in addressing food waste challenges	Cid, 2019; Sutinen, 2022; Närvänen et al., 2022; Hsieh et al., 2021
Institutional approaches	exploring institutional perspectives, analyzing the role of start-ups and retail chains in reducing food waste	Närvänen et al., 2021; Rosenlund et al., 2020; Boskova and Kormanakova, 2022
Cross-cultural and cross-border studies	a cross-cultural or cross-border focus, examining food waste behavior in different cultural contexts and assessing the applicability of behavioral theories across geographical boundaries	Oehman et al., 2022; Närvänen et al., 2022; Morren et al., 2021; Raghu et al., 2022
Environmental impact and awareness	the environmental impact of food waste, exploring how awareness, habits and personal norms influence waste reduction behavior	Bhattacharya et al., 2022; Lorenz et al., 2017; von Massow et al., 2019; Raghu et al., 2022
Food sharing and community initiatives	investigating various aspects of food sharing platforms, community initiatives, and the role of consumers in reducing food waste	Saginova et al., 2021; Hsieh et al., 2021; Mumtaz et al., 2022; Boskova and Kormanakova, 2022
Retail strategies	examining the various aspects of food sharing platforms, community initiatives, and the role of consumers in reducing food waste	Gustavo et al., 2021; Bech-Larsen et al., 2019; Rosenlund et al., 2020; Boskova and Kormanakova, 2022

Although the documents' search criteria focus on suboptimal food, the number of documents that directly address this criterion is quite low (see Table 2). As mentioned previously, the document search criteria encompassed all fields, with the aim of uncovering related terms in the searched articles concerning suboptimal food when the definitions of the term are taken into consideration.

In this context, terms such as "expiring products" (Chang and Su, 2022), "nearing expiration" (Hartmann et al., 2021), "ugly food" (Jang and Lee, 2022), "leftovers" (Ang et al., 2021; Hsieh et al., 2021; Lorenz et al., 2017), "short shelf life products" (Gustavo et al., 2021), "appearance of food" (Hartmann et al., 2021; Närvänen et al., 2021), "availability and quantity of food" (Närvänen et al., 2021), "surplus and discounted food items" (Wong et al., 2021), "organic food" and "natural and sustainable image" (Puteri et al. 2022), as well as "misshapen and aesthetic beauty" (Hingston and Noseworthy, 2020) are the terms which may be alternative phrases conveying the same idea with suboptimality.

Furthermore, shaping the direction of future research in the field of consumer behavior and communication strategies for suboptimal food products requires a multifaceted approach. As Aschemann-Witzel et al. (2018) suggest, an important avenue for discovery is in-depth analysis of consumer perception and decision-making in authentic market environments, using qualitative research or observational methods. Simultaneously, there is a call for customizing communication approaches tailored to the quality and originality dimensions of suboptimal products, with the aim of increasing sales and minimizing waste (Aschemann-Witzel et al., 2018).

Aschemann-Witzel et al. (2017) suggest the use of indirect or implicit measures to link consumers' actual food waste with relevant data on sales or waste in households, taking into account the potential impact of social desirability bias or self-perception. Additionally, another future research aims to compare consumers who adopt suboptimal foods with consumers who reject them and to uncover the complex factors that shape consumer preferences (Tufail et al., 2020).

Moreover, Sutinen (2022) suggests expanding future research to go beyond the consumer perspective to consider differences in the structuring of topics across various platforms and delve more deeply into power structures in discussions and discourses. The recommendation includes a call for a more in-depth examination of specific groups of actors and the discourses they create, offering a promising avenue for further research. Additionally, the potential insights gained when approaching the subject from a corporate communications perspective is highlighted (Sutinen, 2022).

In conclusion, the importance of future research investigating suboptimal food selection and communication in the store environment, aiming to identify implications applicable to real-life contexts of consumers' everyday purchasing situations come to fore (Aschemann-Witzel et al., 2019). Also it is suggested that identifying consumer clusters with different profiles, taking into account choice behavior, product perception and psychographic characteristics, to account for the heterogeneous nature of consumer characteristics. Together, these various recommendations provide a comprehensive framework for advancing understanding of suboptimal food dynamics from multiple perspectives, encompassing consumer behavior, communication strategies and broader societal discourse (Aschemann-Witzel et al., 2019).

As a result, while existing studies provide a roadmap through the current body of literature, future studies offer valuable perspectives to identify and address gaps in current knowledge. Therefore, the current literature not only determine the course of the literature but also shape the way future research efforts are designed, creating a dynamic interplay between current understanding and the search for deeper insight about the path of this dissertation.

2.2. Part-II

2.2.1. Sustainability Communication

Sustainability is an approach that supports development by ensuring the long-term use of resources for others (Mohieldin, 2017). According to Evers (2018), the concept of

sustainability means providing the resources and ecosystem services needed by natural systems, economy and society in a sustainable manner and human development. In this context, sustainability aims at social progress, preservation of environmental balance and economic growth; and is important for the existence and well-being of humanity due to the effects of human activities on the environment, economy and society. Participation in sustainability activities is significant for this process to be successful and sustainable (Guo, 2017). Therefore, it is necessary to effectively convey economic, environmental and social issues, which are the basic dimensions of sustainable development, to large audiences; therefore, communicative action is important.

Thus, sustainability communication takes a holistic approach that combines corporate goals with long-term sustainable development goals. It is necessary to accurately explain the complexity and importance of sustainable development to people, to increase social and environmental awareness, and to use appropriate communication strategies to solve problems between different segments of society (Özgen, 2022). In this context, a distinction must be made between sustainability communication and sustainability of communication. Collaborative sustainability communication is important because sustainability involves participatory approaches and future plans (Franz-Balsen and Heinrichs, 2007). As a result, sustainability communication is a communication approach used to raise awareness about environmental, social and economic sustainability and to manage relations between stakeholders (Sustenuto, n.d.).

The ultimate goal of sustainability communication is to raise consumers' awareness about sustainable products and services, influence their choices based how others perceive them and encourage the adoption of these sustainable options (Kapoor et al., 2020). Spreading sustainable messages to a wider audience is crucial, and new communication technologies play a key role in achieving this goal. Social media, in particular, has a significant impact in reaching broader demographics and engaging with diverse stakeholders. Its widespread usage allows businesses to strengthen their sustainability efforts and connect with a larger community, ultimately contributing to greater awareness and action towards sustainability (Kotan Türkden and Kuşay, 2022).

2.2.1.1.Sustainability Communication and Social Media

In the field of marketing, the symbiotic relationship between sustainability communication and social media has become increasingly important as businesses use these platforms not only to disseminate information but also to promote and develop awareness of sustainable products and services (Jenkins et al., 2022). Since, social media has become a powerful marketing tool for businesses for accessing information and sharing experiences among consumers and considering its widespread use, companies find it imperative to leverage social media to reach large audiences with their marketing content (Erkli, 2022).

Businesses have active accounts not only on corporate websites but also on social media platforms such as Facebook, Twitter, LinkedIn, Instagram and YouTube. As Ulaş (2020, p. 47) states, businesses use these social media accounts to communicate effectively and interactively with stakeholders while announcing their sustainability efforts. Additionally, businesses aim to create a positive impact on stakeholders and show that their discourses turn into action, especially with the content that reflects the social responsibility practices they share on social media (Luca et al., 2022). Therefore, presenting the sustainability messages via social media plays an important role in influencing consumers perception and choices, as a research has shown that the use of social media can positively impact awareness among consumers and contribute to reducing food waste (Jenkins et al., 2022).

Furthermore, in the context of sustainability, the intersection of digital trends and social media dynamics plays a crucial role, as evidenced by the "Digital World Report for July 2023" published by We Are Social and Meltwater. With 67.5 percent of Turkey's total population actively engaged in social media platforms such as YouTube and Instagram. YouTube stands out as the preferred choice for the Turkish population, boasting a user base of 57.9 million, while Instagram is closely behind of it, with 55.7 million users. Remarkably, the social media platform that experienced the most substantial growth in the first half of 2023 in Turkey is Instagram. Instagram experiences significant growth in Turkey in the first half of 2023 (Inbusiness, 2023) and has huge

potential as channels for spreading sustainability messages (Nusair, 2020) This is not only highlights the widespread influence of social media, but also its effectiveness in promoting sustainable practices, as demonstrated by its impact on raising awareness and reducing food waste (Jenkins et al., 2022).

In the field of sustainability communication, although the influence of social media is indisputable, the choice of message appeal (Kapoor et al., 2020; Wang and Lehto, 2019) and the selection of the appropriate message source are key factors that can significantly influence consumer responses (Kapoor et al., 2020). A variety of message appeals, such as emotional or rational, can be used to convey sustainability messages (Matthes et al., 2014, Moon et al., 2016; Wang et al., 2018; Tanford et al., 2020). Equally critical is to note whether the source of the message comes directly from the company or is relayed through a Social Media Influencer (SMI). Understanding the dynamics of these resources is essential to determining the resonance of sustainability communications with consumers (Kapoor et al., 2020). Therefore, striking the right balance between the appeal of the message and its provenance is crucial to creating a genuine connection and gaining consumer commitment to sustainable practices (Kronrod et al., 2012; Lyon and Montgomery, 2013, Kim and Kim, 2014; Cozzio et al., 2020).

2.2.1.2.Message Appeal

Effective sustainability communication depends on the strategic presentation of messages and the characteristics of different message appeals (Wang and Lehto, 2019). Message appeal is the use of rational or emotional cues used in promotional messages that aim not only to attract consumers' interest and attention, but also to further direct their feelings towards the advertised service or product (Kinnear et al., 1995). Message appeals greatly influence consumer responses in terms of framing and presentations (Kronrod et al., 2012; Kim and Kim, 2014; Jacobson et al., 2019). For example, using less assertive language and positive framing has been found to increase persuasiveness and support for sustainability initiatives (Kronrod et al., 2012; Kim and Kim, 2014; Jacobson et al., 2019).

However, the effectiveness of these attractions varies in factors such as sustainability, product type, sector and brand awareness (Mahajan and Wind, 2002; Yu and Kim, 2005; Rhee and Jung, 2019). Therefore, researchers are exploring the different dynamics of message (emotional and rational) appeals and framing the content of messages in line with these appeals significantly affects consumers' responses (Cozzio et al., 2020) in terms of psychologically and behaviorally (Rhee and Jung, 2019). As a summary, message appeals come to fore in two-way content which can be emphasized as “emotional appeal” and “rational appeal” in the message content (Moro and Rita, 2018; Tanford et al., 2020).

Emotional appeals focus on connecting with consumers' feelings rather than their logical thinking (Smith and Ellsworth 1985) and attract the attention fast (Ip et al., 2011). This approach can use positive or negative emotions to persuade individuals (Smith and Ellsworth 1985). “Positive emotional appeals”, leveraging sentiments like joy, inspiration, or love, aim to create a favorable connection with the audience. On the other hand, “negative emotional appeals”, invoking emotions such as fear, guilt, or shame (Kapoor et al., 2020).

When it comes to the power of emotions in sustainability communication, research offers varied results. Studies suggest that positive emotions in sustainability messaging can enhance brand image and contribute to a more positive attitude (Tanford et al., 2020). For instance, Matthes et al. (2014) found that visually pleasing, emotionally engaging green advertisements featuring natural landscapes had a more positive impact on brand attitude compared to functional print ads. However, on the contrary, the impact of negative emotional appeals is complex. While some studies indicate that negative appeals can be effective for promoting sustainable products like biofuels (Moon et al., 2016), others suggest that they may lead to self-protection and inaction, especially in social marketing contexts (Brennan and Binney, 2010). Therefore, the effectiveness of a positive or negative emotional appeal depends on factors such as the nature of the product, the specific sustainability message and the target audience (Tanford et al., 2020).

Rational appeals, on the other hand, focus on utilitarian benefits that give informational messages such as ease of use, reliability, comfort, and quality (Turley and Kelley, 1997). Therefore, rational appeals simply provide straightforward information about a product's features and functions. The main goal of using an informational appeal is to offer reasons or arguments about a product's qualities that will make consumers change their opinions about a brand being advertised (Albers-Miller and Stafford 1999). Research has shown that rational factors influence consumer decisions and choices (Hornik, 2007). Based on this, it's believed that sustainable practices are considered rational because they involve preserving and ensuring the future of a place. Therefore, using rational sustainability messages is expected to have a more positive impact on consumer intentions (Melo and de Farias, 2018).

Moreover, considering the product types, different message appeal types come to fore. For service products, it is argued that the emotional message appeal is more impressive than a rational message appeal in creating a positive consumer attitude and response (Mahajan and Wind, 2002). In this context, while rational appeal is more appropriate when consumers are based on logical thinking (Yu and Kim, 2005), emotional appeal is effective in more experiential and hedonic activities such as restaurant, hotel, and vacation choices (Shostack, 1977) when it is viewed from a sector-focused perspective.

Finally, brand familiarity plays a role in determining the type of message appeal that works. In cases where consumers are already well-acquainted with a product, emotional appeals are more effective in creating a positive impression. However, when individuals have limited knowledge about a product or service, information-based ads are more persuasive because people are eager to learn and process the information (Rhee and Jung, 2019).

2.2.1.3.Message Source

In the communication environment, the selection of the message source carries significant weight when reaching consumers whether it comes directly from a company

or opinion leaders in order to shape perceptions and influence consumers (Kapoor et al., 2020). The message from a company carries the weight and credibility of the brand, fostering trust and positive audience relationships. Consumers associate it with the company's values and view it as an official representation of its stance (Lim et al., 2017). On the other hand, the messages given by opinion leaders who are trusted and respected in their fields bring a different level of originality (Eagly and Chaiken, 1993; Ling and Liu, 2008).

Opinion leaders, defined by Rogers (1983) as highly influential individuals, play a crucial role in shaping consumer decisions, especially when potential consumers are unaware of a particular product or service and these leaders who specialize in specific areas share their reliable expertise, making them valuable sources of information. The actions of opinion leaders can influence everything from industry events to market trends. Opinion leadership, a two-stage communication flow founded in 1955 by Paul Lazarsfeld and Elihu Katz, has evolved significantly over the years (Nguyen, 2022). Opinion leadership, which used to be attributed to individuals determined by the media, has become easier for everyone to share their thoughts with the spread of social media (Influency, n.d.).

In fact, although the terms are different, nowadays opinion leaders are also defined as “influencers”. However, influencers are people (or animals or fictional characters) who have a large following and influence their purchasing decisions by interacting with them. They actively share on social media (Nguyen, 2022). Influencers can be classified into three main categories: celebrity endorsers, macro and micro. Celebrity endorsers consist of celebrities such as models, actors, singers, athletes who are known through traditional media (radio, magazine, television, cinema, etc.), while macro influencers are considered those with more than 100.000 followers. On the other hand, micro influencers are defined as those who have a niche follower base of less than 100.000 (Mahmutoğlu et al., 2018).

As Köletavitoğlu (2017) explains, companies strategically allocate their marketing budgets to collaborate with these opinion leaders or influencers in the field of “Influencer Marketing”, usually on social media. Influencer Marketing in the ever-evolving digital

landscape by leveraging the trust and influence of these individuals is also known as “Social Media Influencers” (SMIs), on consumer perceptions and purchasing decisions (Erkli, 2022; Brown and Hayes, 2008). The distinctions exist between the terms opinion leader, celebrity endorser, and influencer marketing when compared to the role of social media influencers (see Table 3).

Table 3 *Explanation of relevant terminology*

Terminology	Explanation
An opinion leader ...	... plays a critical role in shaping consumer decisions by sharing reliable information in their areas of expertise, especially when potential consumers are unfamiliar with a particular product or service (Rogers, 1983).
A celebrity endorser ...	... likes to be recognized by society and uses this recognition by appearing in the promotion of a consumer good (McCracken, 1989).
Influencer marketing ...	... is the use of influencers to deliver a brand's message to a target segment (Lim et al., 2017).
A social media Influencer ...	... establishes an online presence by leveraging social media platforms, utilizing this presence to captivate and interact with their followers (Dhanesh and Duthler, 2019).

Determining the effectiveness of sustainability communication is crucial aspect for companies, commonly achieved through their official social media channels (Lyon and Montgomery, 2013). Emphasizing the cost-effectiveness of social media, Lin et al. (2020) underline its importance as a valuable tool for the dissemination of knowledge. In the field of sustainability communication, especially in the hospitality industry, many international companies prefer social media platforms such as Facebook and Instagram (Nusair, 2020). On the other hand, opinion leaders on social media (also known as SMIs),

like Instagram, share product or service information through their accounts, making it an effective platform due to its photo-sharing and user-friendly features (Ting et al., 2015). When considering SMIs, it is important to understand Instagram; since Instagram has more than 1 billion monthly active users and is the fastest growing social media platform in 2019 (Geyser, 2024a). Thus, many companies turn to this platform when evaluating their strategic marketing efforts and influencer campaigns (Schomer, 2019).

Therefore, with the significant increase of the social media usage, a notable shift is observed as companies increasingly collaborate with SMIs in influencer marketing for sustainability promotion which are termed as "sponsored messages" (Kapoor et al., 2020). This approach gains traction due to its perceived effectiveness compared to traditional advertising; because SMIs are considered more reliable and trustworthy and offer a personal touch that resonates with their target audience. SMIs are even seen as more accessible and credible than celebrity endorsers or companies, since they excel in making products or services relevant in the context of their personal lives (Erkli, 2022).

Moreover, the alignment between the company and the Social Media Influencer (SMI) holds great significance in the field of sustainability communication. It has the potential to positively influence the consumer's attitude and foster their intent to make a purchase (Lim et al., 2017). Conversely, a lack of harmony may lead to consumer confusion (Thaichon et al., 2019). An SMI can connect with consumers by delivering content that aligns with what the target audience values through social media. Therefore, the resources possessed by the SMI, such as attractiveness (presentation of the content), prestige (perceived content quality), expertise (conveying the information effectively), information (content informativeness) and service (interactivity) become crucial in this process (Dwyer et al., 1987; Ki and Kim, 2019). Establishing these fundamental elements enhances the likelihood of a positive message perception, satisfaction and increased trust in the SMI as an opinion leader (McQuarrie et al., 2012).

Finally, when SMIs are evaluated in terms of brand awareness, a different perspective emerges. According to cue utilization theory (Olson and Jacoby 1972), consumers use both intrinsic (like the physical aspects of a product) and extrinsic cues

(such as the price or where the product is from) to judge product quality. In the context of social media advertising, individuals focus on both of these aspects. For well-known brands primarily draw attention to the product itself when determining credibility and purchase intent (Rao and Monroe 1988). In such cases, the characteristics of the product, its uniqueness and originality become important factors in assessing the quality of advertising (Carsana and Jolibert 2018). SMIs play a persuasive role due to their perceived expertise in their field, promoting trust and independence from large commercial systems (Chapple and Cownie 2017; Jin et al., 2019; Ki and Kim 2019).

However, on the other hand, for brands consumers do not know on social media, they focus on different criteria such as the attractiveness and popularity of the message source. Celebrities are more effective at generating interest in unknown brands, especially on platforms like Twitter; underlines that when brand awareness is limited, SMIs perceived as smart and original may not be as effective as celebrities who appear good-looking and popular (Wood and Burkhalter, 2014; Zhu et al., 2021).

2.2.1.4.Consumer Responses

This part of the dissertation focuses on attitudinal and behavioral approaches of consumers, exploring factors of brand attitude, purchase or usage intention and word-of-mouth. Furthermore, there is a particular emphasis on investigating the impact of suboptimal foods on consumers' behavior.

Brand Attitude

Attitude is how people feel and think about something and it affects their actions while brand attitude is about how much people like or dislike a brand. Therefore, brand attitude is described as the general way people evaluate the product and service offered by a brand (Shin et al., 2014) and is a crucial factor influencing what consumers choose to buy (Kaya and Marangoz, 2014).

Brand attitude reveals usage intention through general brand evaluations (Hwang and Jeong, 2018). In addition, brand attitude deepens in the consumer's mind and emotions, creating brand loyalty (Tosun, 2017). A strong brand attitude also allows individuals to share and recommend the brand to their circle (Venter de Villiers et al., 2018). In this context, it is thought that the effects of attitudes, which are assumed to have an important role on individuals' behavior and preferences, on behavior can be predicted, even if they are not visible (Hogg and Vaughan, 2006).

Brand attitude can be classified into three sub-dimensions: emotional, behavioral and cognitive (Tutar, 2012). In this framework, while the cognitive component is used when consumers evaluate brand-specific information (Voss et al., 2005), feelings towards the brand constitute the emotional component and actions such as purchasing or boycott are evaluated within the behavioral component. The important thing is that it is not necessary for all three components to be active for an attitude towards the brand to form. A brand may be known about and liked, but may not be purchased for some reasons. Even in this case, it can be said that there is an attitude towards the brand (Kağıtçıbaşı, 2003).

Furthermore, to understand brand attitude, there are four important things to consider (Percy and Rossiter, 1992). First, brand attitude depends on a person's motivation. Therefore, if a person's motivation about a brand changes, their attitude toward that brand can also change. Second, brand attitude includes both thinking and feeling components. What people logically believe and how they emotionally respond affect their actions. Third, brand attitude is comparative. In any product category, people look for the brand that best satisfies their needs. As long as people have needs related to a product, they will choose the brand that meets those needs best. Fourth, it also involves the specific benefits people believe a brand offers. These beliefs are not described as the attitude itself, but they are the reasons behind the attitude (Percy and Rossiter, 1992, p. 266).

Last but not least, research on brand attitude shows that the way brands are perceived has a significant impact on consumers' attitudes. Mitchell (1986) states that brand attitude can be influenced by both visual and verbal information, while Gidaković

et al. (2022) suggests that perceiving a brand as sustainable triggers emotional reactions that shape consumers' attitudes toward the brand. As a result, there is a substantial increase in the likelihood of these consumers buying the products or services offered by the brand in the future (Gidaković et al., 2022)

Purchase Intention

The concept of intention revolves around individuals thinking and desiring to achieve a specific goal or outcome, shaping subsequent behavior. Individuals' intentions towards a particular activity serve as the driving force behind their actions (Abdillahi, 2021). From the consumer and customer perspective, the concept of intention is a link between the evaluation of purchasing alternatives and the purchasing processes. Purchase intention represents a customer's level of perceptual conviction to purchase a product or service (Bergeron, 2004). In other words, it is a person's tendency to buy a product or service. Thus, purchase intention, as defined by Karadirek (2017), is the consumer's desire and possibility of buying a specific product in the future. It involves planning to buy a specific product from a particular brand, at a certain time and in a specific amount (Karadirek, 2017). Furthermore, According to Hung et al. (2011), it reflects the consumer's actual future purchase probability based on desire and product perception.

Purchase intention is one of the most critical stages of the purchasing decision process that reveals the consumer's decisive reaction (Tek, 1999). Consumers' purchase intention is based on their choice of product, service or brand, and information regarding the time and quantity to be purchased. For marketers, knowing purchase intent is a way to predict what a consumer will buy. For this reason, marketers often conduct research to measure consumer intentions. Moreover, in the context of relationship marketing, purchase intention is an issue that businesses attach importance to, as the cost of retaining an existing customer is lower than acquiring a new customer (Spreng et al., 1995).

While the purchase decision is complex and influenced by various factors for consumers such as product quality, brand perception, ease of purchase and satisfaction with the purchase process (Abdillahi, 2021), Gogoi (2013) states that the level of purchase

desire is a reliable predictor of actual purchasing behavior. Factors such as price, perceived product value, internal and external influences further shape consumers' tendency to buy more or less (Gogoi, 2013). Despite the similarities between choosing to buy and wanting to buy, Abdillahi (2021) emphasized the dynamic nature of customer decisions, underlining the possibility of change of heart in the final purchase choice.

Word-of-Mouth

The concept of Word-of-Mouth (WOM) is first mentioned in the article written by Katz in 1957, referring to the concept of opinion leader (Lazarsfeld et. al, 1994). Later, with the use of this concept as a marketing activity by companies, the term WOM marketing emerged in the literature (Katz, 1957). WOM is defined as “verbal communications between consumers and various parties, such as channels, product or service producers, experts, friends, and relatives” (Chaniotakis and Lymperopoulos, 2009) which has been a longstanding traditional method (Dellarocas, 2003). It plays a pivotal role in establishing commitment and trust toward a brand or business, displaying a positive attitude and purchasing intention through marketing strategies (Lee, et al., 2011).

In this context, WOM, which can be evaluated as positive or negative, refers to consumers sharing their experiences with each other about the products, services, brands they use or the organizations they attend (Çepni, 2011). Positive WOM is associated with consumers viewing a product or service as quality and valuable. Each customer who makes a positive comment can turn into a reliable and independent brand ambassador for consumers and increase the brand's image (Kutluk and Avcıkurt, 2014). On the other hand, negative WOM refers to the consumer who is dissatisfied with a product or service sharing their negative feelings and thoughts with other people (East et al., 2008). Research shows that dissatisfied customers communicate their negative experiences to more people than their positive experiences (Rosen, 2000).

Rooted in Katz and Lazarsfeld's (1966) concept of people exchanging marketing information, WOM is perceived as influential in shaping behavior and attitudes about

products and services. An important feature that distinguishes this marketing method from others is that it is carried out without any financial interest. The reason for the spread of WOM is that one of the two communicating people engages in this communication activity without any financial interest (Westbrook, 1987). Therefore, another definition of WOM is the communication between individuals for non-commercial purposes regarding a brand, product or service (Stern, 1994). This marketing method involves the exchange of messages and ideas between people who communicate directly in real life. Consumers do not engage in pre-planned or revised dialogues about products and services (Stern, 1994).

Furthermore, Arndt (1967) emphasizes that WOM is distinct from commercial communication, occurring when consumers share information without apparent advertising influence (Litvin et al., 2008). Recognized as a potent factor influencing consumer behavior (Daugherty and Hoffman, 2014), WOM is particularly significant for hospitality businesses due to its cost-effectiveness, especially in sectors like tourism where products are challenging to judge before trying (Litvin et al., 2008).

Research indicate that people trust WOM more than traditional advertising mediums, such as TV, radio, and print ads, making it a powerful means for learning about products and services (Cheung and Thadani, 2012; Lee and Youn, 2009). This preference stems from the general trust people place in other consumers rather than companies promoting the products (Nieto et al., 2014). In this context, WOM serves as a powerful form of marketing, where independent individuals share information about a brand, making it more believable and trustworthy (Brown et al., 2007; Lee and Youn, 2009). Such independence contributes to WOM being a reliable means of learning about products and influences positively brand attitude and purchase intentions (Cheng et al., 2021).

Consumer Responses Toward Suboptimal Foods

Creating a positive attitude, purchase intention and positive WOM for suboptimal food products is challenging. Despite the existing gap between WOM marketing and

suboptimal food relationship, brand attitude and purchase intention can be significantly influenced by suboptimal foods because of consumers' perceptions toward such food products. Consumers refuse to buy suboptimal foods because of their unattractive appearance or close expiration date, interpreting these factors as indicators of poor quality (Xu et al., 2021; Giménez et al., 2021). As a result, perceived poor quality and unappealing appearance affect consumers' attitude, making them less inclined to plan to purchase suboptimal foods. However, on the other hand, there are external factors such as environmental concerns, price reduction which can change the consumers' purchase intention.

Extensive research has examined the link between individuals' attitudes and intentions concerning suboptimal food choices. This investigation identifies a predictive relationship between people's opinions, environmentally friendly purchasing habits and organic food choices specifically related to suboptimal foods. Notably, consumers' attitudes exhibit a strong correlation with their intentions to purchase suboptimal foods, with a positive attitude being a significant factor that enhances the likelihood of planning to buy these products (Westaby, 2005).

In this context, people's attitudes and intentions to buy suboptimal foods can be improved in two ways: through price consciousness and environmental concern (Xu et al., 2021). Price consciousness is about how much people focus on getting low prices when shopping (Xu et al., 2021; Lichtenstein, 1993). A previous study indicates that using smart pricing strategies like discounts and lower prices can make people more likely to buy suboptimal foods (Tsalis, 2020). People who care about getting good prices tend to have positive thoughts about these foods (Stöckli and Dorn, 2021). A research also suggests that price-conscious consumers generally have a positive attitude when it comes to planning to buy suboptimal foods (Tsalis, 2020).

Furthermore, environmental concern is all about how much people care about environmental issues, support finding solutions and actively work to solve these problems. Consumers who are highly concerned about the environment are more likely to want to buy suboptimal foods. This is because they believe that buying these foods can

help solve environmental issues (Wong et al., 2018). In the literature, how environmental concern has a positive impact on both consumer attitudes and the intention to buy suboptimal foods was also discussed. The reason of this question is summarized as follows: people who are environmentally conscious are aware of these issues and are willing to help solve them (Ahmed et al., 2021).

2.2.2. Theoretical Lens – Elaboration Likelihood Model (ELM)

The Elaboration Likelihood Model (ELM), developed by Petty and Cacioppo in 1984 and rooted in the Information Adoption Model (IAM), emphasizes that variations in the effectiveness of persuasion depend on the likelihood of recipients engaging in thoughtful consideration of information related to the persuasive topic (Mun et al., 2013, p. 285). The ELM stands as a leading theoretical framework within the realm of information processing research (Petty and Cacioppo, 1984) and defines two primary processes: central (comprehensive thinking) and peripheral (limited mental effort). It suggests that an individual's level of involvement and motivation play a crucial role in determining whether they choose the central or peripheral route for information processing. When individuals are highly engaged, they are more likely to opt for the central route, whereas lower involvement leads to the choice of the peripheral route (Petty and Cacioppo, 1984).

In detail, when individuals process a message using the central route, it signifies they possess high motivation and cognitive capacity to discern essential information and evaluate it (Petty and Cacioppo, 1984). This implies that the central route entails a more systematic assessment. Conversely, individuals opt for the peripheral route when relying on heuristic evaluation (Chaiken and Maheswaran, 1994). When presented with comprehensive content and access to others' online reviews, people tend to examine information in depth and choose the central route (Tam and Ho, 2005), whereas, when cognitive effort is limited in processing a message, the likelihood of preferring the peripheral route increases (Tang et al., 2012). In addition, according to ELM, consumers may be influenced by peripheral cues like attractiveness, consensus or credibility, rather than actual content of the message (Zhang et al., 2020).

Moreover, considering the holistic approach of the ELM, as Eagly and Chaiken emphasized in 1993, the persuasiveness of a message depends on the strength and effectiveness of the information. In this context, when the central route is employed, the message has persuasive attributes such as quality, reliability and attractiveness (Teng et al., 2014). Conversely, when the peripheral route is followed, there's no need for extensive elaboration of the message's argument. Instead, combining clues is sufficient (Sussman and Siegal, 2003).

As a result, it is extremely important to determine whether the content of a prepared message is compatible with the preferences of the target audience (Leong et al., 2019), since according to Nunes et al.'s research in 2017, by assessing the impact of the shared message, information can be processed through two distinct ELM pathways, shedding light on the electronic word-of-mouth (e-WOM) effect (traditional WOM is being replaced by its online version, known as electronic WOM, due to the rise of social media usage) and enabling an understanding of consumers' attitudes and purchase intentions (Nunes et al., 2017).

2.2.2.1. The Relationships Between ELM and Message Appeal

Research on advertising appeals within the framework of Petty and Cacioppo's model has shown that the processing route individuals choose to take can impact their preferences for different types of appeals. Individuals who engage in peripheral processing in situations of low involvement and motivation tend to prefer ads with emotional appeals (Teng et al., 2014), whereas individuals who use central processing are more interested in ads with informational appeal when they generally have high levels of involvement and motivation (Batra and Stayman; 1988; Millar and Millar, 1990; Voss et al., 2005; and Matthes et al., 2014).

Moreover, a critical finding is that the effectiveness of a message appeal is influenced by an individual's prior knowledge about the product or service (Dens and De Pelsmacker, 2010). If individuals are already well-informed about a product or service, ads with emotional appeals may leave a positive impression, as they may not be highly

interested in processing information. In contrast, for those who don't know about a product or service, ads with informational appeals are more convincing, as individuals actively seek out information from the ads, process and store them in their long-term memory (Rhee and Jung, 2019; Jung and Villegas 2011).

Finally, the significance of a company's environmental behavior in consumer preferences is underscored. A study conducted by Singh et al. (2008) in the UK and Spain reveals that consumers place more emphasis on a company's environmental behavior than its ethical conduct. Based on this, Andreu et al. (2015) refers to this issue in their study by emphasizing that rational arguments carry greater influence on environmental concerns, particularly in scenarios involving high involvement processing.

2.2.2.2. The Relationships Between ELM and Message Source

Due to the integrative nature of the ELM, the effectiveness of a message depends on the strength and credibility of the argument within it (Eagly and Chaiken, 1993). When an individual prefers the central route, several attributes of the message come to fore as a crucial for the persuasion of individuals. These attributes encompass the argument's quality, its credibility, its appeal and the way the individual perceives the message (Teng et al., 2014), whereas when the message takes the peripheral route, the individual assesses the message based on peripheral cues without engaging in detailed argument elaboration (Sussman and Siegal, 2003).

Although individuals' behavior is shaped by the characteristics of the message, the way the message is conveyed is also important; since the source of the message affects the perspective and decision of individuals or consumers (Kapoor et al., 2020). In this context, businesses often employ influencer marketing strategies to build their social media following, engage consumers, boost brand awareness, and foster brand loyalty (IAB TR, 2019). Since Influencer marketing involves individuals who have the power to influence consumers' opinions and purchasing decisions (Brown and Hayes, 2008), the effectiveness of influencer marketing is influenced by factors such as the credibility, appeal, alignment with the brand, and persuasive strength of the SMIs (Ohanian, 1990).

Additionally, another study reveals that the qualities of SMIs, including their originality, reliability, expertise, and honesty, play a role in shaping consumers' intent to make a purchase (Nadezhda and Zeina, 2017).

Moreover, the importance of both content attributes and influencer characteristics in influencer marketing's impact on consumer behavior and purchase intent (Farivar et al., 2023). In this regard, Farivar et al. conducted a study in 2023 using the ELM and its two ways as central and peripheral factors to investigate the impact of influencer marketing on followers' engagement and purchase intent. Central factors include the perceived originality, uniqueness and informativeness of the content in influencer posts while peripheral factors include the perceived physical attractiveness, trustworthiness, and self-presentation of the influencers themselves. The study states that the central factors, particularly post uniqueness, have a significant and direct influence on followers' purchase intention. On the other hand, among the peripheral factors, the perceived physical attractiveness of influencers have a direct impact on purchase intention (Farivar et al., 2023).

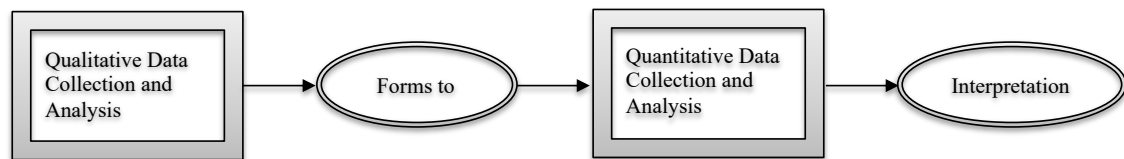
3. ANALYTICAL APPROACH

Adopting an analytical approach, this section presents in detail the general plan and methodological approaches followed to collect and analyze the empirical evidence necessary to answer the formulated research questions. Considering Bryman and Bell's (2015) decisions regarding methodology, attention is paid to each methodology aspect and their consistency with each other and with the research questions in the study is ensured. The overall plan of the study follows a research design is suggested by Bryman and Bell (2015), with specific procedures and approaches providing a broad framework to answer the study's research questions.

In this dissertation, an exploratory sequential mixed methods design was carried out (Creswell, 2014). This method involves an exploratory phase that begins with qualitative interviews to understand motivations related to the consumption of suboptimal foods, given the limited research in the literature. A conceptual model was then developed based on the findings from this phase and two quantitative studies (two experiments) were implemented to test this model to understand sustainability communication in terms of suboptimal foods. This sequential mixed methods design serves as a developmental purpose aimed at assessing whether it can be generalized to a large population sample (Creswell, 2014).

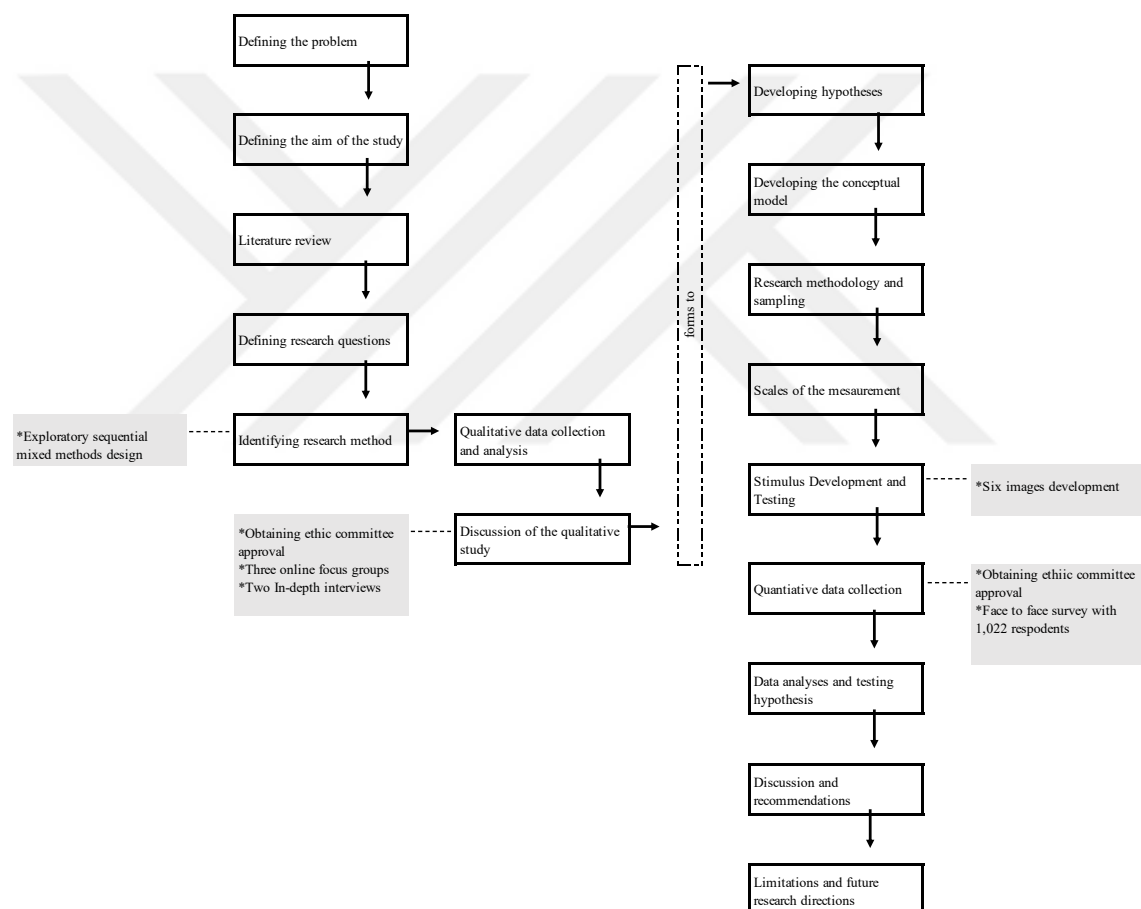
A developmental purpose of the exploratory sequential mixed methods design followed in this dissertation is as follows; "a qualitative study was used to develop constructs and hypotheses, and a quantitative study was conducted to test the hypotheses" (Venkatesh et al., 2013, p. 26) which is shown in Figure 1. With this approach, "back and forth interaction with the social world and literature as an empirical source for theoretical ideas" is accomplished (Bryman and Bell, 2015, p. 27) and the research was designed as Figure 2.

Figure 1 *Exploratory sequential mixed methods design*



Source: Creswell, 2014

Figure 2 *Research design and development*



3.1. Qualitative Study

The research begins with a qualitative study which aims to obtain insights on consumers' motivations in food waste reduction by consuming suboptimal foods and to investigate the influence of personal motivations, emotional responses (Närvänen et al.,

2018). The qualitative study focuses on the following research question which serves as an important basis for subsequent quantitative study:

What are the underlying motivations that guide consumers towards initiatives focused on reducing food waste and purchasing suboptimal foods items?

3.2. Quantitative Study

The quantitative study which comprises two experimental studies aims to investigate the influence of personal motivations and the effectiveness of sustainability communication in social media on attitudinal and behavioral responses within the context of a corporate operating in suboptimal food waste management. Therefore, the quantitative study focuses to understand what type of content in terms of message appeal and message source on Instagram would be more effective to create affective and behavioral reactions in different groups of consumers with different motivations as social media has become a vital part of food waste communication (Erkli, 2022). The results of this study will guide brands in creating more effective and result-oriented communications towards a more sustainable food waste reduction.

Considering the quantitative study, two experiments were carried out to test the hypotheses of this study. The aim of the **Experiment I** is to identify the effect of various message appeals and motivations on consumer responses, since different appeals might create different responses within individuals because of various assumptions (Närvänen et al., 2018, Sutinen, 2019). Furthermore, the main aim of this part is therefore to examine the effectiveness of different types of Instagram content and motivations on consumer responses in terms of attitude, purchase intention and WOM by focusing on the following research question:

Which type of message appeal (emotional vs. rational) distributed through social media (Instagram) presents greater effectiveness in fostering favorable consumer attitudes and behaviors by taking different motivations into consideration?

The aim of the Experiment II is to identify the effect of message source on consumer responses. Therefore, this part of the study aims to understand which message source is

more suitable for the company by generalizing the research findings to real-life situations and providing a representative sample of consumers (van Herpen and Jaegers, 2022). This requires a deep understanding about the message source (SMI vs the company) and engagement on the consumers in terms of brand attitude, purchase intention and WOM by focusing on the following research question:

Does the source of the message (company vs. SMI) influence consumers' attitudes and behavioral tendencies through social media (Instagram)?

Furthermore, the effectiveness of message appeal and source in altering consumer attitudes varies depending on motivation consumers have when processing information (Murkherjee, 2002; Petty et al., 1983). Therefore, the Elaboration Likelihood Model (ELM) plays a crucial role while examining the experiments by considering the following research question.

Does the effectiveness of message appeal and source in altering consumer attitudes and behaviors vary depending on motivation consumers have when processing information?

4. QUALITATIVE STUDY

4.1. Research Methodology

In the qualitative study, two data collection methods, namely focus groups and in-depth interviews, were employed, considering advantages such as observing participants' facial expressions, changes in tone of voice and fostering the development of new ideas (Gegez, 2019). While focus group studies aim to create group interaction, allowing participants to develop new ideas and create a discussion environment, in-depth interviews aim to hold detailed interviews with participants without being exposed to group pressure or influence (Gegez, 2019). This approach aims to gather information that would help consumer surveys and generate hypotheses for subsequent quantitative testing (Gegez, 2019; Venkatesh et al., 2013).

As there wasn't a prescribed number of sessions for focus groups and in-depth interviews (Gegez, 2019) and theoretical saturation was achieved after two focus groups were conducted with prospect users for suboptimal foods, as well as, an online focus group and two online in-depth interviews were conducted with people who previously purchase and consume suboptimal foods. The objective was not to mix participant categories but to gain insights into the general knowledge of suboptimal food consumers and to understand the perceptions of prospect consumers of suboptimal foods regarding the concepts of a new product or service (Gegez, 2019). Each focus group interview consisted of five participants and lasted about two hours. In-depth interviews lasted about 45 minutes. All interviews were recorded and transcriptions were created. They were conducted in Turkish and later translated into English. The qualitative part of the study was carried between the dates of 14.12.2022 - 01.04.2023.

4.1.1. The Sampling Procedure

For the sample, it was decided to first choose a real brand with low awareness, rather than creating a new brand first. This was due to the idea that prior knowledge of a brand could alter consumer decisions (Khan and Fatma, 2023; Macdonald and Sharp,

2000). To this end, the focus was on Fazla, a sustainable food brand in Turkey, in order to fit the purpose of the study. Awareness of the brand was measured by conducting a small survey among Yeditepe University students who knew what the brand was and its purpose. In this small survey, this brand was preferred because only 2% of the 100 students knew this brand. Therefore, this brand was selected for this study.

Fazla aims to reduce food waste in restaurants and markets by selling suboptimal food products with affordable prices and restaurants or supermarkets can sell their suboptimal foods via “Fazla iyi” app which is Turkey’s leading food recovery app (Fazla, n.d.). It delivers suboptimal foods in the form of ‘surprise boxes’ to consumers to save food and beverages. The reason why these boxes are described as ‘surprise’ is that we do not know in advance what the boxes contain. In this context, this dissertation was carried out with the application of Fazla iyi. Therefore, it was ensured that participants who use this brand’s application comprise consumers who have already purchased and consumed suboptimal foods.

Thus, the sample was purposively selected. The data were collected from two groups (1) prospect users for suboptimal foods; and (2) suboptimal food consumers. The prospect users for suboptimal foods consisted of people living in the province of Istanbul, aged between 18 – 55 and having knowledge about sustainability. Announcements were made on social media platforms and recruitments were made after it was ensured via email that the participants met the relevant criteria. Five participants for the focus group and two people for the in-depth interviews, as individuals who have already used the app and purchased suboptimal foods at least once in the previous month, were provided by the marketing team of the brand.

4.1.2. Questionnaire Content

The group discussions were structured, meaning the topics and questions were determined beforehand in a topic guide (see Appendix A for the questions of the prospect users for suboptimal foods and Appendix B for the questions of the suboptimal food consumers, both EN and TR versions of the questionnaires are available). The questions

were prepared by taking the literature and previous studies on this topic, as well as, the research questions of this study into consideration. In summary, the outline of the discussions is as follows:

For the prospect groups of suboptimal foods, interviews started with a discussion covering general information on demographics, awareness on eating habits, sustainable foods, food waste and the brand. First, demographic information was obtained from the participants and then information were obtained on people's eating habits, takeaway preferences and general nutritional preferences. The definition, associations and reasons for preference for sustainable foods were discussed, as well as the level of recognition and trust of food labels. The role of food waste and suggestions for reducing it were also shared. While food waste measures in restaurants and public perception were examined, the impact of brand awareness and social media activities on individuals' attitudes and behaviors were discussed in detail.

For the participants who have already purchased and consumed suboptimal foods, at the beginning of the interviews, demographic information was obtained. Then, the participants were asked to express the first thoughts and associations that came to their minds regarding the brand's application or service, this issue was discussed in depth and the justifications for the associations were presented. Afterwards, the participants discussed their suboptimal food purchasing experiences. Reasons for purchasing and consuming suboptimal foods, frequency of use and usage situations were discussed. Surprise box experiences were examined, and participant opinions on content satisfaction, amount of food, disposal methods, and reasons for disposal were shared. While the effects of the brand and social media activities on attitudes and behaviors were detailed, a discussion was also held on the frequency of talking about the brand and the sense of community. Finally, improvement suggestions were discussed and concrete ideas and suggestions were presented to motivate people for suboptimal food consumption, while various topics such as personalized surprise boxes, tips and recipes to reduce food waste at home were discussed.

4.1.3. Characteristics of the Respondents

Demographic information of the focus group with participants who have previously consumed suboptimal foods is presented in Table 4, while the in-depth interview participants are presented in Table 5.

Table 4 *Characteristics of participants in ‘suboptimal food consumers’ focus group*

Gender	Age	Education	District of Residence	Living Situation	Profession
M1	47	High school degree	Kadıköy	N/A	Software developer
F1	29	High school degree	Ataşehir	With partner and child(ren)	House wife
M1	25	Bachelor’s degree	Şişli	Alone	Chemist/ works in sustainability
M1	28	Bachelor’s degree	Cihangir	Alone	Medical doctor
M1	48	Master’s degree	Kadıköy	N/A	Marketing

Table 5 *Characteristics of participants in ‘suboptimal food consumers’ in-depth interviews*

Gender	Age	Education	District of Residence	Living Situation	Profession
F1	32	Doctoral degree	Kağıthane	N/A	Research assistant
F1	22	Bachelor’s degree	Küçükçekmece	With parents	BioMedical engineer/newly graduate

Participants’ demographic information in two focus group studies with the prospect users for suboptimal foods (between the age of 18-55 and living in İstanbul) is presented in Table 6.

Table 6 *Characteristics of participants in ‘prospect users for suboptimal foods’ focus groups*

Gender	Age	Education	District of Residence	Living Situation	Profession
M1	33	Bachelor’s degree	Sarıyer	Alone	Marketing

M2	25	Bachelor's degree	Ataşehir	Alone	Sales and Marketing
F1	44	Bachelor's degree	Kartal	With partner and child(ren)	Banker
M1	23	Bachelor's degree	Maltepe	Alone	Geomatics engineer/newly graduate
F2	32	Master's degree	Beşiktaş	Alone	Assistant Specialist/ works in sustainability
F1	35	Master's degree	Beşiktaş	Alone	Coaching/ educator
M1	36	High school degree	Multiple places: Kadıköy, Ümraniye, Maltepe	With close friends and family	Entrepreneur
F2	22	High school degree	Levent	With roommates	Business administration/ university student
M2	23	Bachelor's degree	Ataşehir	With parents	Gastronomy and culinary arts/ newly graduate
F3	32	Bachelor's degree	Sarıyer	With parents	Advertiser

4.2. Findings of the Qualitative Study

The responses of the respondents were evaluated under three main headings. In line with the research question, these topics were determined as (1) how respondents regard food waste, consuming suboptimal foods (i.e. near the expiry date) and food sustainability, (2) motivations to purchase suboptimal food, and (3) influence of brand communication on respondents' consumption.

4.2.1. Respondents' Relationship with Food Waste, Expiry Dates and Food Sustainability

Participants in both groups are knowledgeable and concerned about what they eat. They try to manage their food waste and regardless of how they live (alone or with family/partner), they try to organize their food consumption activities to minimize food waste. For example, they do not order food when they already have something to eat at home, they prepare food with small portions or share it with others/animals. They

consider food as waste when it rots, molds, spoils or smells bad. The reason for this is not just their concern for sustainability, though; they also avoid it for financial purposes.

F1, 35 (gender, age as represented in sample characteristics tables): ...when it rots, becomes unusable, when I think it will harm health.

F2, 22: I throw it when I think it will not be eaten, will harm me. ...I feel bad when I throw it.

F3, 32: When products such as milk smell and cheese become moldy, I cannot feel sorry and throw them away. I can't continue. I'm upset ...

M2, 23: ...in case of mold, deterioration.

M1, 33: I'm not throwing food due to economic reasons rather than sustainability. I'm making compost. I compost fruit vegetables, filter coffee grounds. At least I don't throw it away, but I know there is nutritious fertilizer.

M2, 25: I am not very sensitive. When it rots, I throw it away.

F2, 32: When I can't consume it, I throw away the meals for 3 days when there is an unplanned situation. I make smoothies when fruits, such as bananas, turn black.

M1, 23: If the food or drink becomes unusable, I throw it away, like M2, 25. Economic reasons are of course important. If it expires, I throw it away.

Culture is mainly influential on this issue. Food waste awareness of the participants generally starts in the family. There are some, though, where they have acquired an understanding of food waste management in their social circle such as friends or the people they live with or through their experiences/aging etc. In addition, the economic

situation (motivation to save money) and social media have increased participants' awareness over time.

M2, 23: It starts in the family. In our culture, waste is despised. Lucky for us, this is how we learn from our parents.

F3, 32: We see the benefit of our families not being able to find it easily, the lack of variety in the past.

M2, 23: An example is better than precept. After the inflation in food prices, the price of bread almost increased to 10-Turkish Lira. The waste of two years ago and today's waste should not be the same. If so, we have a moral problem.

F2, 32: It is about individuals, but regulations, such as Zero Waste, the proliferation of recycling bins created awareness. If there is such a separation, dissemination and application in food, there will be awareness. Materiality, level of knowledge, place of residence, all effective.

Participants also indicate the influence of culture in terms of food waste and how it is reflected in restaurants.

M1, 36: The photograph that best describes Turkey's restaurant and restaurant waste issue: A plate of kebabs, a piece of bulgur pilaf, a very expensive pepper, a roasted tomato, the kebab you said on lavash. The rest of this plate is: some lavash, absolutely pepper, absolutely tomato, some bulgur pilaf and napkin, toothpick. It's standard to be served, the restaurant thinks it won't come if they don't serve the pepper. The customer does not eat pepper, but wants to see it. Even if it is given to the animal, there are toothpicks left on the plate. Nobody is saying, just bring us kebab products.

M2, 23: ...There are also good examples. I see Big Chefs as a successful Turkish brand in achieving sustainable goals. Not only at the point of waste, there are also

good examples of women entrepreneurs, local producers, and the use of seasonal products.

Moreover, users do not see a difference between throwing away the food bought through the surprise box or restaurants and throwing away the food they have cooked. In both, their aim is to have little or no waste. In general, users are already conscious of removing less waste (there are those who can do this or those who can't, but they are all willing and motivated in this regard).

F1, 22: There is also a culture of habit that comes from the family, and with a perception developed by living alone at the university... We separate waste at home. ...paper, food, glass, plastic, battery, nothing mixes with each other. ...We don't waste food. Meals are prepared according to the number of people in the house. I eat it even if it's stale. I try to evaluate on day 2. I consume the food as long as it doesn't spoil. Even though it was stale in the surprise box, I still ate it. I ate it because it didn't spoil. Although it had a negative effect, I consumed it, I bought it for that purpose.

F3, 32: I pay attention because it affects my budget outside.

F2, 22: I also pay attention in restaurants, but I am more careful at home because it is my own product. At the restaurant, I'm getting away from the topic. When I see people making a lot of waste, I tell myself what I can change.

Most of the participants do not have a clear understanding of what sustainable food is and they mix it mostly with organic food. When the participants are asked about sustainability in food, terms such as the delivery of food to future generations, local production, healthy food, and social, environmental and ethical consideration of every stage in the food chain come to their minds. They mostly do not trust labels for sustainable food products. They also complain that the products are mostly not easily accessible and expensive.

M1,36: I have a trust problem. I do not trust the Turkish market. I don't trust things like production standards, class of the product. I think that there is not enough state structure in production and markets in Turkey. Of course, I would really love the one I can trust. As M1,23 mentioned, product quality, product variety and explanations are carried out in a very healthy way at Ataşehir Migros, everything is clean. Not in other branches. I do not trust any other market, suppliers. I trust the tazedirekt brand owned by Migros, but I can't always shop because the prices are too high.

M1, 23: The organic, green or sustainable product written on the products in the market is the concept of green myopia.

F3, 32: I strongly believe that terms such as organic, sustainable, farm to fork are purely for advertising purposes, sometimes with asterixis, sometimes with poppets, and they are messages that are intended to be given to certain places.

Although individuals pay attention to food waste, they lose their motivation because they think that only them caring will not change anything. They believe that governments, media, big corporations need to come together and pay attention to food waste and sustainability issues. In this context, what businesses share in the media has a negative impact on people.

M1, 28: There is an Instagram account of the brand that makes individuals feel that the responsibility of the states on issues such as protecting the environment and that they do not take responsibility for them. Making composites is nice, but that's not what will save nature. This sounds like Don Quixote to me.

M1, 33: Companies do this kind of thing for confession, I say as someone who works for one of the biggest food companies in the world.

The reasons why they choose sustainable food products are manifold and are in general, protecting the environment and leaving some assets to children, ethical values,

altruism (for the children, for themselves, for the society), being part of a community, and the desire to support the manufacturer. On the other hand, factors such as high price, lack of trust, low accessibility, limited and not appealing products, being associated with a certain group (one that follows trends and only does things to show off) and insufficient level of knowledge are among the reasons why sustainable products are not preferred. Financial aspect comes as the major problem.

M1, 33: For many years to be able to eat what I ate today.

F3, 32: It's financial because if it's expensive, the rich can afford it, it appeals to that audience.

F2, 32: For the good of individuals and the planet.

M2, 25: Making people feel good.

M2, 23: ...the upper segment is a mark indicator...

M1, 36: People who do not prefer because of materiality, I can say, high price. These are luxury issues, the economy is very tough in Turkey, we will say that first we will live off and then we will say our future. Sustainability is not an issue that will be on Turkey's agenda.

M2, 23: Trust issue, green myopia ... hard to reach ... very small chance for a product to be 100% sustainable.

F2, 22: ... The lack of variety discourages even the sensitive person.

F2, 32: ... Lack of knowledge and awareness.

4.2.2. Motivations to Purchase Suboptimal Food

When the motivations of the participants who have already purchased and consumed suboptimal foods were taken into consideration, they can be grouped under 3 main topics: (1) Economic contribution (to buy the known product cheaper), (2) not wasting food, being involved in a purpose and part of a group, (3) win-win (for the businesses and consumers at the same time).

M1, 47: When I first heard about the application, I liked it very much. The idea is beautiful. So it's a great initiative from a business point of view and from my point of view. After a certain hour, the business now tries to sell the goods it has instead of closing its shop and going home, and the goods that cannot be sold are probably wasted. Businesses will not be able to sell that property the next day. I can also buy a product that I can buy in the evening at much more affordable prices. This is a very good thing for me too. This is a beautiful thing, especially in this economic environment where everything is sold for five times as much.

F1, 22: If I wait for an extra luxury, if I act without thinking about waste, I'll go buy the bigger one anyway, eat what I can eat, I don't care if I can't eat it... I use the app of the brand due to food waste conscious... It makes sense for both them (businesses) and us.

M1, 47: Frankly, I think the app is not promoted enough to businesses. Otherwise, when I go to the businesses and explain the application myself, they say something perfect. They even say I'll give them to you now, without the need for the app.

As none of the respondents from the prospect groups do not prefer to consume suboptimal foods before, they gave answers to the hypothetical question of what would motivate them to consume such food products. Similar topics are obtained from the prospect group. In addition, however, the social pressure (on social media and socially in general due to the collectivistic nature of the Turkish consumers (Ekşioğlu et al., 2021)

that leads to higher motivation towards green products (Midilli and Tolunay, 2021)) come to fore and concerns on appearance of the products and availability would be influential in their decision.

M1, 23: Confidence, health and economics.

F1, 44: Everyone's access to food at all times, no shortage of food.

M1, 33: It's in a negative sense. There is social pressure. There are also fascistic posts. Those who do not have knowledge about sustainability and do not share are accused of ignorance. It would be more positive if explained in soft language. "Don't you buy cage-free eggs, then you're stupid". There is treatment as a product of the upper mind. ... It pushes rather than attracts sustainability.

M2, 25: There is social pressure, but in a good way, people become more conscious with this pressure.

F3, 32: When we leave our mother's house and see that everyone else cares, and recognize that everyone around us is paying attention, this consciousness will settle down. Higher authorities need to change. The feeling of not being alone works in Turkey, we are a collectivist country. The more people, the more accurate perception it creates.

F1, 44: ... let them say, let them see. Like children's birthdays. A party of 100 is given to a child of 10. There's just too much waste to show off, especially on social media. We are trying to make you say that F1, 44 has made so many varieties.

Price is important for both groups. Even it is the main motivation for many. In the case of price increases, the benefit of not wasting food loses its importance.

F1, 29: For me, the first thing that came to mind was to prevent waste. It was the one that impressed me the most. And I said smart, very smart people who apply accordingly. So it's really a very useful thing for the business. The price was also affordable. It appealed to me. But when the prices increased as M1, 47 said, I frankly stopped using it. So I haven't used it for a while. Because I looked, even half the price is close to the normal price'

M1, 47: ... When I buy them without the app I already buy the same products for cheaper. I go to the door, I pay more and I buy the same products. In other words, without even choosing a product, I pay more than the price I would pay for random products at the checkout. This is not right for me. However, if business owners own this and understand this practice correctly. I think they confuse it with Getir, Yemeksepeti, Trendyol and similar platforms.

M1, 23: Products that keep their freshness all day long can be bought. It makes sense both from an economic standpoint and from a sustainability standpoint. People think that we will eat the leftover food, but in fact, I want the product that keeps its freshness during the day, I don't prefer it if it stays for the second day, I pay money after all.

4.2.3. Influence of Brand Communication

Both participants who have previously consumed suboptimal foods and the prospect group participants emphasize the importance of building trust through brand communication.

F1, 35: Trust is required in matters such as trust in the brand, storage conditions and supply. Trust is important.

F1, 25: It takes time to build trust. Transparency is needed. It is an issue affecting human health.

M2, 23: Risk is being taken, I need to understand goodwill. ...It is not enough just to be an environmentally friendly page like an activist, as it contributes when waste and food waste affect my budget. It should be balanced. It must be a good network system.

Informational and reliable contents that can be applied in real life are important to the participants and there are more influential on shaping attitudinal and behavioral responses of the respondents. Contents like these may even shape habits.

M1,23: Short and clear content stays in my mind.

F1,35: Sustainability and the motto on the brand's website should be included on Instagram. ...Refika is the wrong choice. Portions, consumption frenzy and appetite don't quite match the app. It is necessary to explain the service, its basis. Dietitians also give the storage conditions of the lettuce, first of all, they should explain the difference and what it does.

M2, 25: It is important to have content that can be applied in my own life.

F3, 32: ... We need awareness about what to store and how to store. We need to learn how to make products longer and healthier. Tips such as how to throw, when to throw, how to store longer should be easy to reach. These sources should be reliable, comfortable and easily accessible, such as TV, because the mass audience is there in Turkey.

Working with micro influencers provides more confidence on the content and the message rather than macro influencers or celebrity endorsers.

M2, 25: They make an agreement with the company on financial concerns. I find the ones that are for the benefit of society sincere. I don't find companies sincere. After the damage they have done, it doesn't seem sincere that they are commenting on us on social media like do this or that.

F2, 32: I don't find it sincere that celebrities influence in these areas. Micro influencers are more effective.

4.3. Discussion of Qualitative Study

The motivations for suboptimal food consumption are driven by various factors (Aschemann-Witzel, 2018). Among these motivations, economic savings, avoiding food waste (Aschemann-Witzel, 2018), conscious consumption (de Hooze et al., 2017), commitment to sustainability (Aschemann-Witzel, 2018), supporting sustainable food companies (van Giesen and de Hooze, 2019) and emotional factors (such as feelings of guilt) (Quested et al., 2013) stand out. Within the field of the most prominent motivations, (1) the fact that suboptimal products are often sold at lower prices is an important source of motivation for cost-oriented consumers; and (2) suboptimal food consumption is consistent with the overall goal of reducing food waste, and consumers contribute to this goal by choosing products that have minor defects or are approaching their expiration date (Aschemann-Witzel, 2018). Furthermore, consumers' attitudes and intentions to purchase suboptimal foods can be improved by price awareness (Xu et al., 2021) and environmental concern (Wong et al., 2018).

In this context, the main aim of the qualitative study is to understand the motivations of participants (people who have already purchased and consumed suboptimal foods and prospect group for suboptimal food consumption) consuming suboptimal food by detailing the following topics: (1) how respondents regard food waste, consuming suboptimal foods (i.e. near the expiry date) and food sustainability, (2) motivations to use the app and purchase suboptimal food, and (3) influence of brand communication on respondents' consumption.

Firstly, participants are conscious and concerned about food consumption and focus on reducing food waste and consuming suboptimal foods. They combine these efforts with sustainability, financial reasons and cultural impacts. According to the participants, awareness of food waste usually begins in the family, and the social environment, experiences and economic situation also affect this awareness. Awareness on this issue

has increased with the influence of social media, but a clear understanding of sustainable food is lacking. Participants often confuse organic food with sustainable food and do not trust the labels. There are complaints that sustainable food products are expensive and difficult to access. Individuals want governments, media, and companies to focus on food waste and sustainability because they feel their own efforts are inadequate. While the reasons for choosing sustainable products are based on various factors such as environmental protection, ethical values and belonging to the community, the reasons for not choosing include high prices, lack of trust and lack of information.

Secondly, participants' motivations for choosing suboptimal food products are divided into three main categories: economic contribution, food waste prevention and win-win situation. In addition, it is stated that the collectivist nature of Turkish consumers (Ekşioğlu et al., 2021) affects consumers to use environmental products through the influence of their friends, relatives and colleagues (Midilli and Tolunay, 2021). Furthermore, social media and general social pressure, as well as concerns about product appearance and availability, also affect preferences. Price is very important and in case of price increases, the motivation to prevent food waste decreased.

Lastly, considering brand communication, issues of trust in brands, businesses and products that claim to be sustainable emerge as an important factor affecting brand communication participants. Especially with the emphasis on elements such as brand awareness, the issue of trust, the compatibility of messages with the brand, emphasizing the brand's purpose frequently comes to the fore. Although participants have lack trust in brands that promise sustainability, they think that trustworthy content has the potential to influence their habits. Therefore, using reliable, informative content in brand communication strategies plays a critical role in ensuring that consumers trust brands and prefer sustainable products.

When these three main headings, which emerged as a result of this qualitative study aimed at understanding the participants' motivations in consuming sustainable food products, are considered, discussion issues arise regarding the consumers' level of awareness, marketing strategies, economic conditions, decreasing purchasing power and

cost sensitivity, and the emergence of alternative preferences. Greater education and awareness among consumers can help them make the right choices and choose sustainable food products. In times of economic difficulties in Turkey (Yöyen, 2023), the perception that sustainable food products are expensive drives consumers to cheaper options. Therefore, marketing strategies can shape consumers' perceptions and preferences. By communicating accurate information, choosing sustainable food products can be encouraged. Additionally, consumers' purchasing power decreases as prices increase, which may lead to purchasing less food or using it more carefully. While the price factor is at the forefront among Turkish consumers, their motivation to prevent food waste is shaped by cultural and social factors.

In this context, the qualitative study reached various findings to understand the motivations for consuming suboptimal food products. The factors that stand out among these findings are: economic savings, avoiding food waste, conscious consumption, cultural influences, trust factor and level of knowledge. The groups who have already purchased and consumed suboptimal foods or potential groups for suboptimal food consumption are generally comprised of consumers who are environmentally concerned, sustainability-oriented and have a high awareness of reducing food waste. While these groups act towards the goal of preventing food waste, they also attach importance to economic savings. Therefore, the study identifies two main motivations: (1) **"food waste avoidance"**, reflecting this group of consumers' commitment to an environmentally friendly and sustainable lifestyle, and (2) **"economic savings"**, which refers to consumers' budget-oriented preferences. These two motivations constitute the main starting points of consumers who prefer suboptimal food products.

As a result, in the qualitative study conducted for the purpose of the exploratory sequential mixed method design, two main motivation sources served as a moderator in the quantitative study and were prepared by taking into account these motivations for the use of social media images in message communication. In addition, the participants' presentation of informative, reliable content and the compatibility of messages with the brand regarding brand communication, as well as their argument that micro-influencers are more reliable than celebrity endorsers, were taken into account in the quantitative study when evaluating message appeals and source.

5. THE HYPOTHESES DEVELOPMENT

In the field of sustainability communication, the interaction between social media and the spread of sustainable messages has great importance for businesses that want to connect with consumers (Jenkins et al., 2022; Erkli, 2022). Social media platforms, particularly Instagram, have seen significant growth in Turkey (Inbusiness, 2023), highlighting their potential as effective channels for promoting sustainable practices (Jenkins et al., 2022). In this context, this study underscores the critical role of message appeal and selection of the appropriate message source in shaping consumer responses to sustainability communications via social media (Instagram). This comprehensive approach ensures a well-rounded and impactful delivery of sustainability messages, resonating with a diverse audience on both emotional and rational message appeals (Matthes et al., 2014, Moon et al., 2016; Wang et al., 2018; Tanford et al., 2020). In addition to the message appeal, the source of the message holds paramount importance; whether it emanates directly from the company or through an SMI profoundly affects consumers' responses (Kapoor et al., 2020).

Implementing the appropriate message appeal and source not only improves consumer perception, but also positively encourages sustainable choices and strengthens the impact of sustainability communications on attitudes, intentions and WOM (Matthes et al., 2014, Moon et al., 2016; Wang et al., 2018; Tanford et al., 2020; Kapoor et al., 2020). Striking the right balance between the attractiveness of the message and the originality of the source and creating a real connection are very crucial in sustainability communication (Kronrod et al., 2012; Lyon and Montgomery, 2013; Kim and Kim, 2014; Cozzio et al., 2020).

Reducing the issue of sustainability communication to a more specific field, specifically when it is associated with suboptimal food consumption and food waste reduction, consumers' attitudes and intentions are formed in two dominant ways: price consciousness and environmental awareness (Xu et al., 2021). According to the results obtained in the qualitative research of this study (economic saving and food waste avoidance), it is clear that was compatible with the theory. In this context, in sustainability

communication, the factors indicating environmental and economic issues provide importance in motivating the messages to the prospect consumers (Xu et al., 2021).

Moreover, the ELM provides theoretical guidance on the dual pathways (central and peripheral) that influence consumers in the persuasion process (Petty and Cacioppo, 1984) by emphasizing message appeal, motivation and message source, while also providing valuable information for creating effective persuasive communication strategies in marketing (Dens and De Pelsmacker, 2010; Rhee and Jung, 2019; Jung and Villegas 2011; Kempf, 1999; Singh et al., 2008; Andreu et al., 2015; Farivar et al., 2023).

Following the parameters of this conceptual framework, this section is structured as follows to express 11 hypotheses: (1) the direct impact of message appeal on consumer responses; and the convergence of theory and practice within the framework of the ELM and its routes (central vs. peripheral), addressing the message appeal, (2) the mediating role of brand attitude in the relationship between message appeals and purchase intention and WOM, (3) the moderating role of motivation in the connection between message appeals and consumer responses; and the ELM and its routes (central vs. peripheral) addressing the motivation, (4) the moderating role of the message source in the relationship between message appeal and consumer responses, as well as, focusing on the ELM effect on message source are assessed.

5.1. Direct Effect of Message Appeal on Consumer Responses

Two-way content can be emphasized as message appeals: “emotional appeal” which comprises “sensual and guilty appeals” and “rational appeal” in the message content (Moro and Rita, 2018; Tanford et al., 2020). Emphasizing emotional appeals involves prioritizing the connections with consumers’ emotions over logical reasoning (Smith and Ellsworth, 1985) and swiftly capturing their attention (Ip et al., 2011); while rational appeals which can be considered as informational appeals simply provide straightforward information about a product’s features and functions (Albers-Miller and Stafford 1999).

In this context, the mixed findings suggest that the effectiveness of emotional appeals (both positive and negative) and rational appeals in sustainability communication depend on various factors such as including industry, consumer preferences, product features and brand familiarity. For instance, while most studies address the issue of message appeal, usually focusing on the product itself, only a few focus on services. Consumers cannot clearly evaluate the features and benefits of services because services are intangible. This suggests that emotional appeal is more effective by connecting with consumers (Abernethy and Butler, 1992; Cutler and Javalgi, 1993). Furthermore, while emotional appeals work better for experience-related services like hospitality and tourism (Wang et al., 2018), negative emotional appeals like fear, guilt, and shame can lead to self-protection and inaction, especially in social marketing (Brennan and Binney, 2010). Beside this, negative appeals can work better than positive ones for sustainable products (Moon et al., 2016).

On the other hand, rational factors influence consumer decisions and choices (Hornik et al., 2016). Based on this, it's believed that sustainable practices are considered rational because they involve preserving and ensuring the future of a place. Therefore, using rational sustainability messages is expected to have a more positive impact on consumer intentions (Melo and de Farias 2018). In another study, message appeal is investigated in retail services and it states that rational appeal had more positive effects on attitudes towards advertising (Stafford and Day, 1995). Therefore, emotional appeal leads to higher purchase intention in the experience service, while rational appeal is better for the trust service (Zhang et al., 2014).

Moreover, product types determine different message appeal types. For service products, the emotional message appeal is more effective than a rational message appeal in creating a positive consumer attitude and response (Mahajan and Wind, 2002). In this context, while rational appeal is more suitable when consumers are based on logical thinking (Yu and Kim, 2005), emotional appeal is effective in more experiential and hedonic activities such as restaurant, hotel, and vacation choices (Shostack, 1977).

Furthermore, brand familiarity also plays a role in the type of message appeals (Rhee and Jung, 2019). When people already know a lot about a particular product or service, they're less interested in getting information from advertisements. In such cases, advertisements using emotions create a positive impression. However, when individuals have limited knowledge about a particular product or service, ads that provide information are more persuasive. Since they do not have prior knowledge, people are willing to learn from advertisements, process information, and remember it in the long term (Rhee and Jung, 2019).

The effectiveness of message appeal in altering consumer attitudes varies relying on how involved and motivated consumers are when processing the information. For instance; rational appeal is more effective, especially when the level of involvement and motivation is high (Murkherjee, 2002). According to ELM theory, the message has a motivating effect on curiosity of the individuals, cognition requirements, dialogue on the communication, comprehensibility of the message and engagement with the products. In this context, consumers prefer central route to achieve an attitude alteration by adopting rational appeal. However, those with low levels of involvement who do not process information in a central way and who do not have the motivation or ability to process the message may also experience changes in their attitudes; because persuasion can occur via cues and all emotional factors (Petty, et al., 1983).

To expand the ELM perspective, preliminary information about the product or service, brand recognition and the features of the product or brand come to the fore (Dens and De Pelsmacker, 2010). Consumers' familiarity with a product or service determines their preferred processing path. For example; consumers who are familiar with a product, emotional appeal is used to drive positive responses, while those who are unfamiliar engage in central route processing by prioritizing informational (rational) content (Dens and De Pelsmacker, 2010). Similarly, when faced with unfamiliar brands, consumers prefer central processing, making information appeal more effective, while for well-known brands the scenario is the opposite (Rhee and Jung, 2019; Jung and Villegas 2011). Finally, while utilitarian products are evaluated cognitively, hedonic products are evaluated emotionally. Thus, rational appeal is emphasized by utilitarian services, while emotional appeal is emphasized by hedonic services (Kempf, 1999).

Consequently, based on the available information the primary hypothesis concerning the message appeal was developed as follows:

***H1:** Type of message appeal (sensual, guilty vs. informational) has a direct effect on (a) attitude toward the brand, (b) purchase intention and (c) positive WOM intention. So that, there will be differences on consumer responses depending on the type of the message appeals.*

5.2. Mediating Role of Attitude toward Brand

Brand attitude refers to the evaluations that consumers generally give to a particular brand (Wilkie, 1986). It is the combination of all the values that form the basis of the brand (Cop and Baş, 2010). Likewise, positive or negative emotions and beliefs about the brand also determine brand attitude (Hosseinpour et al., 2016; Wu et al., 2011). Furthermore, brand attitude forms the basis of consumers' purchasing decisions and brand preferences; and it is a function that focuses on the salient benefits and features offered by the brand. Attitude is a complex system that includes an individual's beliefs, ideas and action tendencies towards an object and it covers cognitive, emotional and behavioral aspects and determines the way of responding to an object (Keller, 1993).

There is an important interaction between attitude and behavior (Lee, 2006; Anic, 2010). Attitude is a predictor of purchase intention and actual purchasing behavior (Morrison, 1979). According to many researchers (Bennett and Harrell, 1975; Dick and Basu, 1994), there is a strong relationship between consumer attitude and intention. The intention to perform a behavior includes the individual's attitude to perform the behavior in a particular situation, as well as the norms that affect the behavior in that situation and the motivation to comply with these norms (Morrison, 1979).

There are many studies on the mediating effect of the brand on purchase intention. For example, Erçiş and Yıldız (2017) states that brand attitude positively affects purchase intention within social media users. Vidyanata and Hadiwidjojo (2018) indicates that brand attitude positively affects purchase intention within Instagram users; while Ramesh

et al. (2019) determines that brand attitude plays a full mediating role in the relationship between corporate social responsibility and purchase intention in the food industry.

From another perspective, WOM offers a specific solution to the problem of uncertainty of services. Since the customer cannot fully understand the service and make a decision about it before experiencing it, an evaluation can only be made after the service experience is experienced (Bansal and Voyer, 2000). By using WOM communication, consumers want to directly hear and obtain information about the thoughts and experiences of people who have experienced the product before (Kitapçı et al., 2012). Depending on whether the product or service quality meets expectations, customers feel satisfaction or dissatisfaction (Oliver, 1997). Positive and negative WOM are reactions exhibited by consumers after encountering a service or using a product (File et al., 1994).

There are significant relationships available between attitude and WOM. Consumers are significantly influenced by reviews when making purchasing decisions and are even willing to pay more for products with positive reviews. Therefore, if consumers with a positive attitude form a purchase intention based on the information they receive and are satisfied after purchasing the product, they share their positive feelings and thoughts about the product with other consumers through WOM (Johnston and Mehra, 2002; Akdoğan and Akyol, 2016).

As a result, the appeal of a message influences brand attitude, the intention to make a purchase (Melo and de Farias, 2018; Kapoor et al., 2020), as well as, WOM communication (Kumar and Mirchandani, 2013; Sun and Ko, 2016; Choi and Choi, 2014). While a favorable brand attitude can positively impact purchase intentions (Ghorban, 2012), brand attitude can also be linked to WOM by playing a mediating role (Casidy and Wymer, 2015). Consequently, the interaction between brands and consumers can facilitate the influence of brand attitude on both WOM and purchase intentions (Lee et al., 2018). In this context, the second hypothesis is viewed as a mediating role of the brand attitude, which was developed as follows:

H2: *Attitude toward the brand mediates the relationship between the message appeal (sensual, guilty vs. informational) and (a) purchase intention and (b) positive WOM intention.*

5.3. Moderating Role of Motivation

Sustainability motivation, which represents an individual's tendency to make sustainable choices when meeting their needs through purchases, is a factor influencing sustainable behavior. When people have a strong motivation to make sustainable purchases, they are more inclined to have a positive attitude towards the brand (Mothersbaugh, 2016). This favorable consumer attitude toward the brand can subsequently impact their intent to make a purchase (Gummerus et al., 2012). Therefore, brand attitude and purchase intention can be influenced by suboptimal foods. However, there is a gap between WOM and suboptimal food motivation relationship in the literature, this study highlights the gap between motivations to consume or purchase suboptimal foods and WOM.

People's attitudes and intentions to purchase suboptimal foods can generally be improved by two main factors: price awareness and environmental concern (Xu et al., 2021). Therefore, price consciousness and environmental concern are considered important factors to improve people's attitudes and intentions to purchase suboptimal foods. Price consciousness relates to how much people care about low prices when shopping. This involves consumers choosing to spend less by looking for affordable products and taking advantage of promotions, depending on their budget and spending habits (Xu et al., 2021; Lichtenstein, 1993).

On the other hand, environmental concern is entirely based on how sensitive they are to environmental problems, how willing they are to solve these problems, and how active a role they want to play in finding solutions (Wong et al., 2018). This may include consumers opting for sustainable products, opting for environmentally friendly packaging and supporting products that are less harmful to nature. Environmental concern can lead

consumers to develop conscious consumption habits and take action to reduce negative impacts on the environment (Ahmed et al., 2021).

Furthermore, consumers who exhibit environmentally friendly behaviors are more inclined to high-involvement and high-motivation transactions (central path) within the framework of ELM (Elaboration Likelihood Model). This indicates that consumers tend to process information more deeply about environmental issues and place greater emphasis on logical arguments when analyzing this information. The study by Singh et al. (2008) reveals that the environmental behavior of a company in the UK and Spain has a significant impact on consumers. This finding shows that companies' environmental policies can be a determining factor on consumers' purchasing decisions. In this context, Andreu et al. (2015) suggests that rational arguments are more effective in terms of environmental concerns. That is, they argued that rational message appeal has a greater impact when consumers exhibit environmentally conscious behavior. This suggests that consumers' sensitivity to environmental issues tends to respond more favorably to arguments supported by knowledge and logic (Andreu et al., 2015).

Hence, the goal of this study is to explore the motivational factors driving the purchase of suboptimal foods through a qualitative study. Subsequently, the identified motivational factors are intended to act as moderating variables between message appeals, and brand attitude, purchase intention and WOM. In light of this objective, the third hypothesis was developed as follows:

H3: *Consumers' motivation (food waste avoidance vs. economic saving) moderates the effect of message appeal (sensual, guilty vs. informational) on the consumer's (a) attitude towards the brand, (b) purchase intention and (c) positive WOM intention. So that, there will be differences in consumer responses depending on the motivation of the consumers.*

5.4. Moderator Effect of Message Source

The alignment between the company and the SMI holds great significance in the field of sustainability communication. It has the potential to positively influence the consumer's attitude and foster their intent to make a purchase (Lim et al., 2017). The proposed conceptual model outlines a direct connection between the message source and the dependent variables in the model, namely brand attitude, WOM, and purchase intention.

When the messages distributed by the company and SMI are evaluated together, it is revealed that the messages sent by the influencer are more effective. This brings the phenomenon of influencer marketing to the fore (Erkli, 2022). Influencer marketing is a marketing strategy that aims to increase purchase intention by using influencers, known as influencers, to change a consumer's perception of a product or service (Brown and Hayes, 2008). Furthermore, influencer marketing, a synthesis of traditional and modern marketing concepts, is based on content-oriented advertising strategies involving an influencer. The difference between this type of marketing and others is that it is based on collaboration between the brand and the influencer (Geyser, 2024b).

Several studies have examined the impact of influencer marketing. For instance, Goldsmith and Clark (2008) claim that WOM, a key aspect of influencer marketing, has a more significant influence on consumer decision-making, as well as, De Veirman et al. (2017) suggest that using influencers as intermediaries can reduce consumer resistance and avoidance toward a product or brand. Additionally, Lim et al. (2017) suggest that consumers with a positive attitude towards SMI generally tend to purchase influencer-endorsed products (Hsu et al., 2013), as well as, Djafarova and Rushworth (2017) support that influencer-generated content and recommendations have a positive impact on brand attitude and purchase intention. Furthermore, traditional celebrities and influencers can influence consumers' purchasing behavior. However, although both groups are used in advertising activities, influencers can communicate more intimately than traditional celebrity endorsers. Influencers who are in more direct contact with their followers and

can gain their trust are considered a more persuasive advertising tool (Sabuncuoğlu and Gülay, 2014). This result also emerged as a result of the qualitative research in this study.

In consumers' attitudes and behavior, the effectiveness of the source of the message also depends on how involved consumers are in processing the information (Petty et al., 1983). In this context, the content of the message and the characteristics of the influencer come to the fore. In the ELM framework, the relationship between the message source and the content is examined as follows (Farivar et al., 2023): (1) central factors such as originality and uniqueness of the post-content, and (2) environmental factors such as the influencer's characteristics (physical attractiveness, credibility and self-presentation). According to Farivar et al., 2023, central factors, especially post-uniqueness, have a significant and direct effect on followers' purchase intention. On the other hand, in an advertisement using influencers, a significant change in attitude is observed when the participants have a low level of participation. However, this depends on the level of interest according to ELM; because the message arguments in the advertisement are more important for individuals with high interest levels and the use of celebrity endorsers does not affect the attitudes of the participants (Petty et al., 1983).

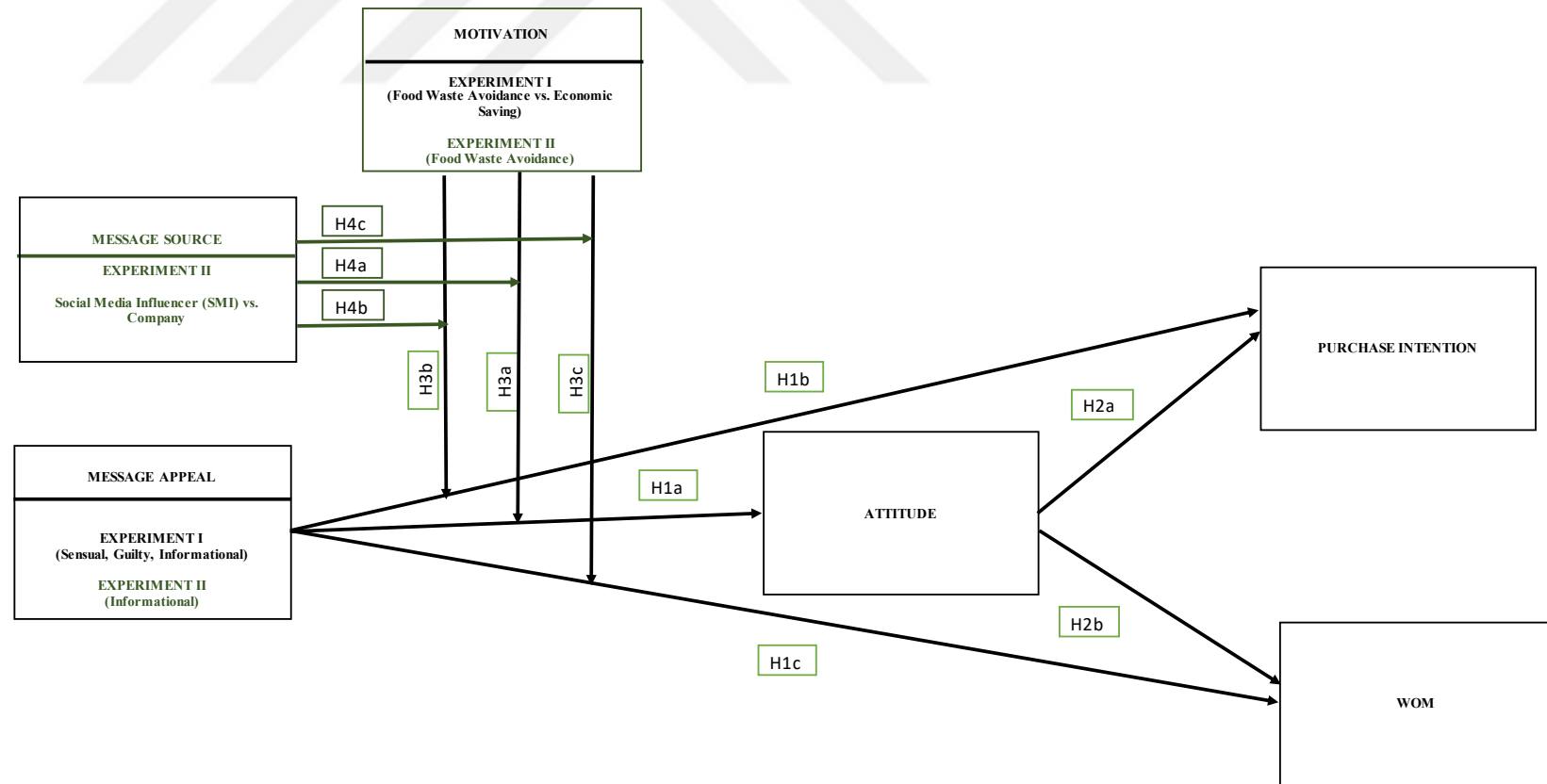
While much of the existing literature emphasizes SMIs as superior message sources for prompting consumer responses, the ELM presents a contrasting viewpoint in terms of interest level of consumers. Therefore, according to ELM, the originality and uniqueness of the message might hold more significance than the source itself. This notion triggers controversy within the field, prompting a deeper examination of whether the message source truly employs a significant influence in sustainability communication. Therefore, the message source is examined as a moderator to determine whether a significant difference exists by developing the following hypothesis:

H4: Message source (company vs. SMI) moderates the effect of message appeal and motivation on the consumer's (a) attitude towards the brand, (b) purchase intention and (c) positive WOM intention. So that, there will be differences in consumer responses depending on the message source.

6. THE CONCEPTUAL MODEL OF THE RESEARCH

The conceptual model is depicted below in Figure 3. The relationships tested in Experiment I and II are shown separately. Experiment I tests the influence of message appeal (sensual, guilty or informational) and motivation (food waste avoidance or economic saving) on consumer responses (attitude toward brand, purchase intention and word-of-mouth), where Experiment II tests the influence of message appeal and motivation (informational and food waste avoidance – as a result of Experiment I) and message source (company or SMI) on consumer responses (attitude toward brand, purchase intention and word-of-mouth).

Figure 3 *Research model of the study*



7. QUANTITATIVE STUDY

7.1. Research Methodology

In the quantitative phase of the study, two between-subject design experiments were conducted to analyze the role of the message appeal (sensual / guilty / informational) and motivation (economic saving / food waste avoidance) (Experiment I) and of the message source (company or SMIs) (Experiment II) on consumer responses (brand attitude, purchase intention and positive WOM). Experiment II was designed on the results obtained from Experiment I.

For both experiments, which were carried out between the dates of 18.04.2023 and 01.08.2023 in Istanbul, a similar procedure was employed. Respondents initially indicated whether they know the brand and then were shown the images created and were directed towards the items measuring the concepts in the study and finally provided their demographic information. More detail on sampling and measures used is provided in the subsequent sections.

7.1.1. The Sampling Procedure

Primary data were used for this research because the data responses the specific aim which was collected from first hand and had current data (Bryman and Bell, 2015). Respondents were selected randomly among people aged between 18-55 and living in Istanbul. Out of 81 provinces in Turkey, 18.65% of Turkey's population resides in Istanbul, with a population nearly 16 million (TÜİK, 2022a). When examining the distribution of interprovincial population movements in Turkey, Istanbul emerges as the most preferred destination for internal migration (TÜİK, 2022b). Furthermore, 68.1% of Turkey's population falls within the 15-64 age group (TÜİK, 2022a). Given these statistics, conducting the study in Istanbul provides representative data for the broader population.

In this study, the stratified sampling method was utilized. This is the method dealing with extensive populations defined by identifiable subgroups (Gegez, 2019, p.197). In this

case, the aim is to categorize Istanbul, which comprises 39 districts (TUIK, 2023), into subgroups, ensuring a representation of at least 30 districts. Consequently, the population is stratified based on the districts, and random samples are drawn from each subgroup (Gegez, 2019, p.197).

After developing sample Instagram images, the images and quantitative questions were conducted with a face to face survey for a pre-test and two experiments by an agent (Frekans Research). Although the cost of this method is high and the time period is longer, this method is effective in terms of accuracy, acceptability and generalizability of results (Davis, 2000).

Furthermore, determining the optimal size depends on various factors (Chritensen et al., 2020). Different methods exist to ascertain this size. For instance, while in social sciences, a sample size to be between 30 and 500 is typically considered sufficient (Kothari, 2004), in experimental research, it is recommended to collect data from at least 30 respondents (Özen and Gül, 2007). In this context, a total 1,022 data were collected that each experiment surpassed the recommended sample size.

Initially, a pre-test was conducted with data from 113 respondents to prove the reliability and understandability of the scales. Next, for the main study, both experiments were conducted with a total of 909 people. Random answers provided to open-ended, as well as, items measuring the concepts within the study yielded in overall. As final data, 538 respondents for experiment I and 347 respondents for experiment II (24 data were excluded from the study, 12 data from experiment I and 12 data from experiment II). All the data were tested via the SPSS statistics program.

7.1.2. The Scales of the Measurement

In order to analyze the concepts, questions were formulated with the help of the literature and existing scales which were proven in terms of validity and reliability were used. The questionnaire comprised of six sections, each addressing distinct aspects of the study as follows: (1) internet and social media usage, exploring respondents' awareness of

food waste reduction organizations in Turkey, (2) brand (experiment I) and SMIs (experiment II) familiarity, (3) message appeals, message source and content attitudes, featuring differences between the two experiments in terms of images presented and subsequent questions, (4) attitudes toward the brand, purchase and WOM intentions, (5) motivations, examining food waste avoidance and economic saving, (6) demographic information of respondents, encompassing gender, education level, working/studying status, household size, and income (see Appendix D for the questions of the Experiment I and Appendix E for the questions of the Experiment II, both EN and TR versions of the questionnaires are available).

Likert type five-point scales mostly ranging from “1” denoting “strongly disagree” to “5” “strongly agree” were employed within the survey. The variables for the study were formed as follows: (1) Brand Familiarity (BF) measured the degree of familiarity with the brand (three items adapted by Zhou et al., 2010); (2) Content Attitude (CA) evaluated the attitude towards the image (four items adapted by MacInnis and Park, 1991); (3) Brand Attitude (BA) measured the attitude towards the brand after providing information about the brand (four items adapted by MacInnis and Park, 1991); (4) Message Appeal (MA) assessed the sensuality, guilt and informativeness of images on respondents (three items adapted by Kapoor et al., 2020); (5) Intention (INT) reflected the degree of purchase or usage intentions of respondents (three items adapted by Park et al., 2007); (6) Word-of-Mouth (WOM) measured respondents’ recommendations about the brand to other people (three items adapted by Cronin and Taylor, 1994 and Goodwin and Ross, 1992); (7) FWA assessed respondents’ motivations and actions aimed at minimizing food waste (four items adapted by Cho et al., 2020); and (8) ES measured respondents’ motivations aimed at reducing expenses or maximizing economic benefits (four items adapted by Aschemann-Witzel et al., 2016) (see Appendix C for the details of the items).

7.2. Stimulus Development

Consumers use social media to get information and share their experiences. Thus, social media has become an important marketing tool for businesses which can share their marketing content or information with large audiences (Erkli, 2022). Social media is often

also used as a popular platform for sustainability communication (Jenkins et al., 2022) and Instagram has significant growth, particularly in Turkey (Inbusiness, 2023).

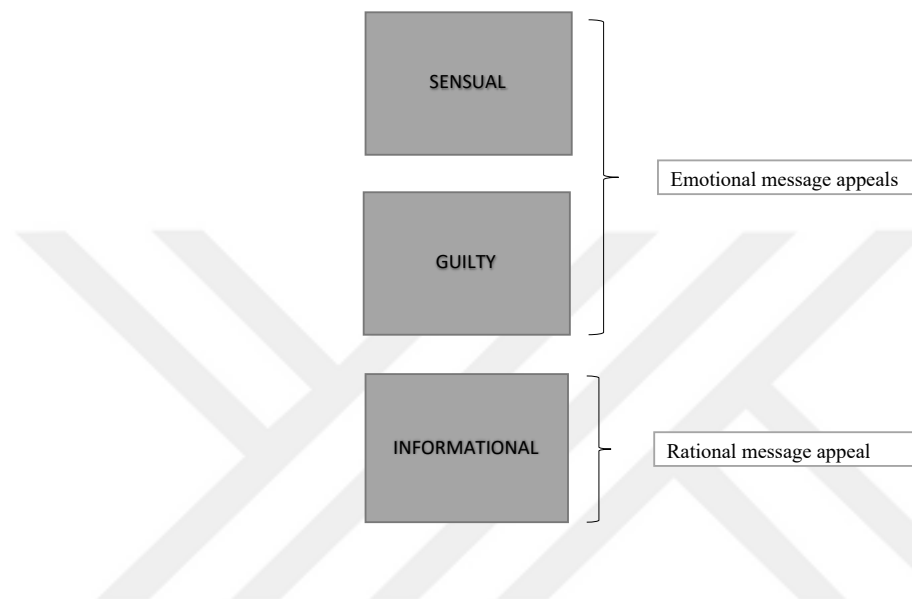
This study aims to understand the impact of message appeal and source selection on consumer responses to sustainability communication on social media, emphasizing the critical role of both emotional and rational appeals (Matthes et al., 2014; Moon et al., 2016; Wang et al., 2018; Tanford et al., 2020). Additionally, it investigates the influence of personal motivations on attitudinal and behavioral responses within the context of a corporation engaged in suboptimal food waste management (Erkli, 2022). Therefore, this research underscores the importance of social media platforms like Instagram in effectively communicating sustainability messages to diverse consumer groups (Jenkins et al., 2022).

In this given context, while creating the message appeals, which refer to strategies employed by marketing and advertising experts to capture attention and persuade individuals to make purchases or take actions, hold a significant influence on consumer reactions. While content appeals can generally be classified as either emotional or rational in nature (Moro and Rita, 2018; Tanford et al., 2020), emotional appeals predominantly focus on pleasurable experiences such as guilt, fear, romance, sex and adventure. Conversely, rational appeals center around utilitarian advantages, conveying informative details like ease of use, reliability, comfort, and quality (Turley and Kelley, 1997).

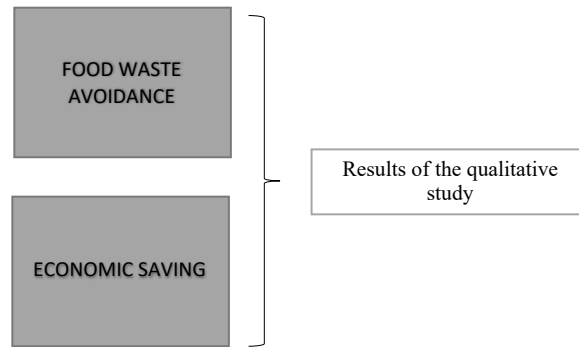
In light of this information, it was aimed to use positive (sensual) and negative (guilty) appeals as emotional appeal, while rational (informational) appeal was also included in the study. The sensual appeal entails the gratification of the senses (Kapoor et al., 2020) and messages with the sensual appeal are engaging, entertaining and attention-grabbing (Ekici et al., 2020; Mayer et al., 2019; Shen et al., 2020), while guilty appeals are an unpleasant emotional state triggered when an individual recognizes that he/she has violated moral or social standards. Guilt is characterized by regret, remorse and self-blaming about a particular action or inability (Chang, 2012). Conversely, rational appeals (or informational appeals) center around utilitarian advantages, conveying informative details like ease of use, reliability, comfort, and quality (Turley and Kelley, 1997). The primary objective behind using an informational appeal is to offer rationales or justifications regarding a product's

features that can alter consumers' perceptions concerning a promoted brand (Albers-Miller and Stafford, 1999). In this context, both rational and emotional appeals were taken into consideration (see Figure 4).

Figure 4 *Message appeals*



In exploring attitudes and intentions surrounding the purchase of suboptimal foods, Xu et al. (2021) underscored the pivotal roles of price consciousness and environmental concern. Their study revealed that these factors are key influencers in shaping consumer behaviors towards suboptimal food choices. Furthermore, through qualitative research of this study (focus groups and in-depth interviews), two primary motivations emerged prominently: "food waste avoidance" and "economic saving" (see Figure 5). To address these motivations effectively, this study adopted a motivational approach aimed at heightening environmental awareness and economic consciousness. The food waste avoidance message sought to raise awareness about the environmental impact of food waste, while the economic saving message emphasized the financial benefits of making economical choices. Aligning with insights from relevant images, which showcased dual motivations, the study aimed to influence consumer perceptions and behaviors towards suboptimal food purchases by appealing to both environmental concerns and economic considerations (Kulikovskaja and Aschemann-Witzel, 2017).

Figure 5 *Motivations*

Therefore, all images were formatted to suit Instagram standards. They comprised Instagram posts containing a combination of message appeals and motivations (6 images in total), accompanied by hashtags emphasizing these aspects, collaborating with the brand's marketing team. In line with the findings of the qualitative phase results, each image conveyed the brand's objectives in selling suboptimal foods to eliminate low brand awareness (see Appendix F).

7.2.1. Sensual Message Appeal

In the images containing sensual messages, the cupcakes are served at two different times, 09:00 in the morning and 21:00 in the evening, while the explanations emphasizing the freshness of the morning cake and its continuing taste in the evening signal that the expiration date is approaching. The aim was to highlight the suboptimal nature of food, targeting motivations related to both food waste avoidance and economic savings. The Food Waste Avoidance (FWA) message encourages users to prevent food waste by using the brand's app, emphasizing that cupcakes are still very delicious and enjoyable even after hours. On the other hand, the Economic Savings (ES) message encourages users to contribute to the family budget by preventing food waste through the application.

7.2.2. Guilty Message Appeal

In the Guilty FWA image, environmental awareness was created with the phrase of "Ülkemizde bir yılda 26 milyon ton gıda israf oluyor" ("26 million tons of food is wasted in

our country in a year"); while in the guilty ES message image, a wallet emoji and the phrase "Ülkemizde bir yılda 555 milyar tl değerinde gıda israf oluyor" ("555 billion TL worth of food is wasted in one year in our country") was written and the brand logo (raccoon) was added for each images. The text content of the Guilty FWA message conveyed the magnitude of food waste in the country, urging users to combat waste with the brand's app. In contrast, Guilty ES messaging highlighted the financial impact of food waste and encouraged users to join the fight against wasteful financial losses through the app.

7.2.3. Informational Message Appeal

The informational messages explain why the brand should be chosen. The question phrase of "Neden [marka uygulama adı]?" ("Why [brand app name]?") was emphasized in the Informational FWA message image and "Gıda israfını önlemek için" ("To prevent food waste") was added with a woman image. In the Informational ES message image, The question phrase of "Neden [marka uygulama adı]?" ("Why [brand app name]?") was emphasized in the Informational FWA message image and "%50 indirimli fiyatlarla gıdaya ulaşmak için" ("To reach food at 50% discount prices") was added with a women image. In addition, a fifty percent price tag has been added to the image. The brand logo (raccoon) was included in both images. Therefore the text content of the informational FWA message conveyed that the choice of brand or application was motivated by the desire to preserve extra good taste and prevent food waste. In contrast, the Informational ES message emphasized that choosing the brand was a practical decision to access food at a 50% discount.

7.3. Stimulus Test

For the stimulus test, it was aimed to evaluate the comprehensibility of the images through a combination of open-ended questions and a seven-point Likert scale assessment. Based on the findings from this stimulus test, adjustments were made to the images and they were redesigned accordingly. The images' understandability and believability were tested with a short survey with 96 people to make sure that they are processed and interpreted in the desired way by the respondents. The sample was reached using a convenience sampling

method, whereby respondents were selected based on their easy accessibility. The sample was accessed through Instagram accounts, friends and relatives, comprising respondents residing in Istanbul and aged between 18 and 55, aligning with the demographics of the main study sample. This targeted approach ensured the inclusion of participants who matched the demographic criteria of the study population, enhancing the relevance and applicability of the findings to the broader context.

According to the demographic data of the sample, the average age of the respondents was approximately 38 and the gender distribution was 47% female and 53% male. Considering the last degree obtained for the respondents; the majority had a bachelor degree (51%). The demographic characteristics offered insights into the composition of the sample, highlighting its diversity in terms of age, gender, and educational background.

All images and texts were prepared in Turkish because the data contain only Turkish people. The sample Instagram images were asked with two questions: “what does this Instagram content tell you” (open-ended question) and “how does this content make you feel” with three different message appeal questions as sensual (“this Instagram post intends to make people pleasant”), guilty (“this Instagram post intends to make people feel accountable”), informational (“this Instagram post is informative”) using seven point Likert scale ranging from (1) strongly disagree; (7) strongly agree.

7.3.1. Findings of Stimulus Test

According to the first findings of the message appeal stimulus test (1) the means of the scores given to the question related to each category were evaluated; (2) the understanding of the image was evaluated from the open-ended question of the data results; therefore (3) the images and their texts were redesigned. Therefore, one sample t-test was conducted to determine whether there is a difference between the results on the message appeals and the mean of the scores ($M = 3.50$). The mean of sensual message appeal is ($N_{\text{sensual}} = 37$; $M_{\text{sensual}} = 1.68$; $SD_{\text{sensual}} = 1.75$), [$t(36) = -6.345$, $p = .000$]; while the mean of guilty message appeal is ($N_{\text{guilty}} = 34$; $M_{\text{guilty}} = 4.15$; $SD_{\text{guilty}} = 2.40$), [$t(33) = 1.571$, $p = .126$]. Furthermore, the mean of informational message appeal is ($N_{\text{informational}} = 25$; $M_{\text{informational}} = 4.64$; SD

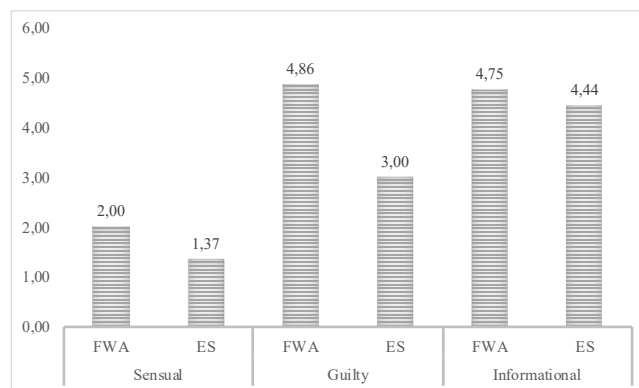
informational = 2.16), $[t(24) = 2.641, p = .014]$. According to the p values of the analyses, sensual and informational message appeals are significantly different from the mean score (3.50), while guilty message appeal is not significantly different. The means of the scores for each category are shown in Table 7 and Figure 6.

Table 7 Means of stimulus test

Message Appeal	Item	Motivation	N	Mean	SD
Sensual	“This Instagram post intends to make people pleasant”	FWA	18	2.00	1.78
		ES	19	1.37	1.71
Guilty	“This Instagram post intends to make people feel accountable”	FWA	21	4.86	2.15
		ES	13	3.00	2.42
Informational	“This Instagram post is informative”	FWA	16	4.75	1.98
		ES	9	4.44	2.55

*measures on a seven-point scale

Figure 6 Mean of stimulus test



Therefore, as a result of the stimuli test of the message appeals, the images and texts were re-evaluated and some changes on the images were made. Since the brand was unknown, the answers to the open-ended questions revealed that the brand logo was confusing as “an animal-specific company”; therefore the brand logo (raccoon) was removed from all images. To maintain integrity, the brand app name (Fazla iyi) was only referred to as “Fazla”. Analysis indicated that respondents, even without detailed reading, could grasp the content through hashtags, aligning with the importance of hashtags in creating attention

and awareness (Ta'amneh and Al-Ghazo, 2021). Consequently, hashtags were added to each image to serve this purpose.

Furthermore, in the sensual messages (both FWA and ES) which had the lowest means, a cultural element (the tag of mother cookie) by removing cupcakes was added to emphasize suboptimal foods, depicting a decreasing amount of cookies from 09:00 to 21:00. The guilty messages and informational messages had suboptimality emphasis and hashtags were added to the content. Overall, these modifications aimed to improve clarity and align the messages with the desired environmental and economic awareness goals (see Appendix G for the final images).

7.4. Pre-Test

A pre-test was carried out using the redesigned images through a combination of open-ended questions and five-point Likert scale assessments, incorporating all the scale questions of the main study. The pre-test was conducted with data from 113 respondents (face to face survey) who live in İstanbul and aged between 18-55 in order to understand the clarity of redesigned message appeal images and reliability of the scales to ensure consistency and accuracy in the measurement of participants' responses. According to the demographic data of the sample, the average age of the respondents was 30, there was almost an equal gender distribution (47% Female and 53% Male). Considering the last degree obtained for the respondents, the majority graduated from secondary/high school (59%). The majority was working (59%).

According to the results, first the means of the clarity of the images were analyzed. Therefore, one sample t-test was conducted to determine whether there is a difference between the results on the message appeal and the mean of the scores ($M = 2.50$) asking identical questions for the stimulus test across each message appeal. The mean of sensual message appeal is ($N_{\text{sensual}} = 29$; $M_{\text{sensual}} = 4.10$; $SD_{\text{sensual}} = 0.90$), [$t(28) = 9.592$, $p = .000$]; while the mean of guilty message appeal is ($N_{\text{guilty}} = 37$; $M_{\text{guilty}} = 3.81$; $SD_{\text{guilty}} = 0.94$), [$t(36) = 8.500$, $p = .000$]. Furthermore, the mean of informational message appeal is ($N_{\text{informational}} = 47$; $M_{\text{informational}} = 4.47$; $SD_{\text{informational}} = 0.55$), [$t(46) = 24.722$, $p = .000$].

Therefore, each message appeal is significantly different (p values $< .05$) from the mean score.

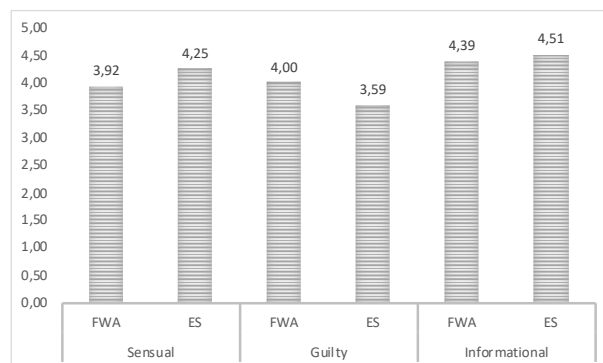
Furthermore, the means of message appeals associated with motivational factors are shown in Table 8 and Figure 7. Thus, when arithmetic means, as well as the answers for the open-ended questions were taken into consideration, it was ensured that the images were understood correctly.

Table 8 Means of pre-test for the images

Message Appeal	Item	Motivation	N	Mean	SD
Sensual	“This Instagram post intends to make people pleasant”	FWA	13	3.92	0.76
		ES	16	4.25	1.00
Guilty	“This Instagram post intends to make people feel accountable”	FWA	20	4.00	0.73
		ES	17	3.59	1.12
Informational	“This Instagram post is informative”	FWA	18	4.39	0.61
		ES	29	4.51	0.51

*measures on a five-point scale

Figure 7 Mean of pre-test for the images



Moreover, in the pre-test, reliability test analysis was also performed on scale questions. The reliability is analyzed to check whether it exceeds the value of 0.70 (Louangrath, 2018). The concept of reliability is related to research findings and it shows whether the same results will be obtained if a study is repeated, in other words, whether a

scale is as reliable when repeated (Gegez, 2019, p. 165). This process ensured that the messages selected as well as the questions used were correctly understood by the respondents and valid responses for analysis were obtained for the following two experiments.

Reliability analysis was not performed for Brand Familiarity (BF), because this variable was only asked to those who knew the brand and only two people out of 113 knew the brand and responded to the question (brand awareness = 0.02%). According to the results, Cronbach's Alpha values of other variables were as follows: Content Attitude (CA) = 0.86; Brand Attitude (BA) = 0.82; Intention (INT) = 0.87, Word-of-Mouth (WOM) = 0.92, Food Waste Avoidance (FWA) = 0.63; Economic Saving (ES) = 0.79.

Considering these values, although all the variables were over the value of 0.70 (Hair et al., 2013), FWA were found as 0.63. However, a reliability/Cronbach alpha value between 0.60 and 0.70 may be acceptable (Ab Hamid et al., 2017). Even so, when the reliability test was performed again with the data from both experiments, it was analyzed that all scales are above the threshold (see Table 13 in the Section 7.5.4). Thus, when the scales are repeated, they can be considered reliable as they give the same measurement and mean that the measurement has little random answer error (Gegez 2019, p. 165).

7.5. Results of Experiment I and II

This part gives the details of the descriptive statistics with 885 responses (538 respondents for experiment I and 347 respondents for experiment II) and with approximately 35 questions (the number of questions asked to a person may vary depending on the answer of the person). The statistical results are presented in Tables 9, 10, 11, 12 and 13 for each experiment.

7.5.1. Descriptive Statistics of the Respondents

Regarding the sample (aged between 18-55 and living in Istanbul), respondent data were obtained from 31 out of 39 districts of Istanbul reflecting the diversity (TÜİK, 2023a).

There was almost an equal gender distribution (Experiment I: 50.9% Female and 49% Male; Experiment II: 52% Female and 48% Male) for each experiment, representing similarities with Turkey's population distribution of 49.9% Female and 50.1% Male (TÜİK, 2023b). The average age of the respondents was approximately 32 for each experiment, which is also close to Turkey's average age of 33.5 (TÜİK, 2022a).

Furthermore, considering the last degree obtained for the respondents, the majority graduated from secondary/high school in each experimental design (the descriptive information of the experiment I and II were provided in Table 9 and 10). Regarding the working status of the respondents, the majority is working. The average number of people in a household is four people for each experimental design. Household income varies (see Table 9 for the descriptive statistics on demography).

Table 9 *Descriptive demographic information of Experiment I and II Respondents*

		Experiment I		Experiment II	
		Frequency	Percent	Frequency	Percent
Gender					
Female		274	50.9 %	179	51.6 %
Male		264	49.1 %	168	48.4 %
Age					
Between 18 - 25		198	36.8 %	122	35.2 %
Between 26 - 35		95	17.7 %	102	29.39 %
Between 36 - 45		181	33.6 %	84	24.21 %
Between 46 - 55		64	11.9 %	39	11.24 %
Last Degree Obtained					
Primary school		38	7.1 %	11	3.2 %
Secondary/High school		311	57.8 %	241	69.5 %
Associate degree		30	5.6 %	23	6.6 %
Bachelor degree		147	27.3 %	64	18.4 %
Master's degree		11	2.0 %	8	2.3 %
PhD degree		1	0.2 %	0	0.0 %
Working Status					
I am working		354	65.8 %	220	63.4 %
I am not working		65	12.1 %	53	15.3 %
I am a student		119	22.1 %	74	21.3 %
Income of Household					

5.001 - 7.500 TL	2	0.4 %	0	0.0 %
7.501 - 10.000 TL	13	2.4 %	6	1.7 %
10.001 TL - 12.500 TL	42	7.8 %	11	3.2 %
12.501 TL - 15.000 TL	61	11.3 %	25	7.2 %
15.001 TL - 20.000 TL	97	18.0 %	49	14.1 %
20.001 TL - 25.000 TL	61	11.3 %	40	11.5 %
25.001 TL - 30.000 TL	65	12.1 %	32	9.2 %
30.001 TL - 40.000 TL	43	8.0 %	32	9.2 %
40.001 TL - 50.000 TL	20	3.7 %	11	3.2 %
50.001 TL and more	6	1.1 %	3	0.9 %
Not specified	128	23.8 %	138	39.8 %
Total Sample	538	100.0 %	347	100.0 %

Instagram is the most preferred social media platform for the respondents in experiment I and II, respectively (see Table 10).

Table 10 *Social Media Platforms – multiple responses*

	Experiment I	Experiment II
	Frequency	Frequency
Instagram	496	335
Twitter	254	171
Facebook	251	165
TikTok	88	89
LinkedIn	38	38
Total	*1.127	*798

**The totals of n for each experimental design shows that one respondent may have more than one response*

7.5.2. Awareness of the Brand

Pre-manipulation awareness was measured because of the possibility that it could change the results. Since awareness was very low, as presented in Table 11, it was not tested as a covariate. Therefore, taking into account brand awareness, which targets delivering suboptimal food products to consumers and preventing food waste in Turkey, the first experiment yielded a score of 4.6%, whereas the second experiment recorded 7.2% (see Table 11).

Furthermore, regarding familiarity and attitudes among respondents who were aware of the brand, brand familiarity was assessed by asking respondents, “How familiar is the brand to you?” on a scale ranging from 1 (very unfamiliar) to 5 (very familiar)”. In Experiment I, out of the 12 individuals who knew the brand, only six reported it to be very familiar or familiar. In Experiment II, despite 25 people being aware of the brand, only nine were familiar or very familiar with it (see Table 11).

Table 11 *Awareness (knowledge) of the brand*

		Experiment I		Experiment II	
		Frequency	Percent	Frequency	Percent
Awareness (Knowledge) of the Brand					
Yes, I know		12	2.2 %	25	7.2 %
No, I don't know		526	97.8 %	322	92.8 %
Familiarity of the Brand (within respondents who know the brand)					
2 (unfamiliar)		3	0.6 %	2	0.6 %
3		3	0.6 %	6	1.7 %
4		3	0.6 %	11	3.2 %
5 (very familiar)		3	0.6 %	6	1.7 %
Don't know the brand		526	97.8 %	322	92.8 %
Total Sample		538	100 %	347	100 %

7.5.3. Normality Testing

Before analyzing the data collected within the scope of the research, it was tested whether the data showed normal distribution. The assumption of normality is used to determine which statistical analyzes can be applied (Hair et al., 2013). In the literature, skewness and kurtosis value ranges are frequently examined to determine the normal distribution. In the social sciences, particularly concerning Likert scales, there's no agreement on the range for data to be considered normally distributed. For instance, Tabachnick and Fidell (2007) suggest skewness and kurtosis values between -1.5 and +1.5 indicate normal distribution, whereas George and Mallery (2010) propose a range of -2 to +2. Conversely, Kline (2005) suggests values should be between -3 and +3. In light of this information, it was determined that the data was normally distributed according to skewness and kurtosis values (see Table 12).

Table 12 *Test of normality*

Factors	Items	Experiment I				Experiment II			
		Skewness		Kurtosis		Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
Content Attitude	CA_1	-1.09	0.11	1.41	0.21	-1.05	0.13	1.19	0.26
	CA_2	-1.03	0.11	1.14	0.21	-0.69	0.13	0.10	0.26
	CA_3	-1.35	0.11	1.88	0.21	-1.27	0.13	2.30	0.26
	CA_4	-1.23	0.11	1.19	0.21	-0.89	0.13	0.34	0.26
Brand Attitude	BA_1	-1.16	0.11	2.15	0.21	-1.22	0.13	2.34	0.26
	BA_2	-1.07	0.11	1.21	0.21	-0.69	0.13	-0.16	0.26
	BA_3	-1.27	0.11	2.17	0.21	-1.10	0.13	1.34	0.26
	BA_4	-1.11	0.11	1.14	0.21	-0.83	0.13	0.27	0.26
Intention	INT_1	-1.08	0.11	0.96	0.21	-0.71	0.13	0.00	0.26
	INT_2	-0.94	0.11	0.42	0.21	-0.74	0.13	-0.01	0.26
	INT_3	-0.94	0.11	0.58	0.21	-0.65	0.13	-0.16	0.26
Word-of-Mouth	WOM_1	-1.13	0.11	1.03	0.21	-0.98	0.13	0.78	0.26
	WOM_2	-1.24	0.11	1.01	0.21	-1.13	0.13	1.06	0.26
	WOM_3	-1.17	0.11	1.05	0.21	-1.05	0.13	1.13	0.26
Food Waste Avoidance	FWA_1	-0.94	0.11	1.77	0.21	-0.72	0.13	0.63	0.26
	FWA_2	-1.02	0.11	0.82	0.21	-1.15	0.13	2.09	0.26
	FWA_3	-0.98	0.11	0.64	0.21	-0.82	0.13	0.77	0.26
	FWA_4	-0.92	0.11	1.52	0.21	-1.01	0.13	1.65	0.26
Economic Saving	ES_1	-0.66	0.11	-0.03	0.21	not measured*			
	ES_2	-0.73	0.11	0.26	0.21				
	ES_3	-0.63	0.11	-0.47	0.21				
	ES_4	-0.61	0.11	-0.23	0.21				

**As a result of the analysis of the first experiment, there was no need to ask the ES questions in the second experiment (see Section 7.6.1.5)*

7.5.4. Reliability Testing

Reliability analysis was also performed for each construct measured in Experiment I and II via SPSS Software Program in order to emphasize the importance in ensuring consistency and stability of measurement (Gegez, 2019). In each experiment, conducting reliability tests for the variables CA, BA, INT, WOM, FWA and ES confirmed their reliability, with all measures exceeding a threshold of 0.70 (Hair et al., 2013) (see Table 13).

Table 13 Means, standard deviations and Cronbach alphas of the variables

		Experiment I (n:538)			Experiment II (n:347)		
Factors	Items	Mean	Standard Deviation	Cronbach Alpha	Mean	Standard Deviation	Cronbach Alpha
Content Attitude (CA)	CA_1	4.21	0.79	0.88	4.09	0.05	0.89
	CA_2	4.01	0.90		3.95	0.05	
	CA_3	4.30	0.84		4.15	0.04	
	CA_4	3.96	1.04		3.88	0.06	
Brand Attitude (BA)	BA_1	4.20	0.76	0.86	4.13	0.04	0.88
	BA_2	4.10	0.88		4.02	0.05	
	BA_3	4.26	0.79		4.18	0.04	
	BA_4	3.97	0.97		3.90	0.05	
Intention (INT)	INT_1	3.80	0.96	0.91	3.81	0.05	0.92
	INT_2	3.88	1.04		3.79	0.06	
	INT_3	3.74	0.99		3.77	0.05	
Word-of-Mouth (WOM)	WOM_1	4.11	0.92	0.91	4.11	0.05	0.91
	WOM_2	4.13	1.02		4.12	0.05	
	WOM_3	4.01	1.00		4.04	0.05	
Food Waste Avoidance (FWA)	FWA_1	4.10	0.72	0.78	4.03	0.04	0.86
	FWA_2	4.24	0.82		4.03	0.05	
	FWA_3	3.97	0.96		3.82	0.05	
	FWA_4	4.06	0.79		4.02	0.04	
Economic Saving (ES)	ES_1	3.93	0.89	0.78	not measured*		
	ES_2	3.99	0.87				
	ES_3	3.59	1.16				
	ES_4	3.71	1.01				

*As a result of the analysis of the first experiment, there was no need to ask the ES questions in the second experiment (see Section 7.6.1.5)

7.6. Hypotheses Testing Results

In this section, the effects of Instagram post contents and motivation on consumer responses in Experiment I, as well as impact of message source on consumer responses in Experiment II were analyzed, aligning with the objectives of this study. In the first experiment, the analyses commenced by conducting a manipulation check of message appeal images via one-sample t-test. Afterwards, hypotheses measurement started with ANOVA testing to measure the direct effect of message appeal (sensual, guilty vs. informational) of brand attitude (H1a), purchase intention (H1b) and WOM (H1c). Subsequently, the PROCESS Model 4 was employed to examine the mediating effect of

brand attitude on the relationship between intention (H2a) and WOM (H2b). Finally, an General Linear Model (Univariate) analyses evaluated the moderation effect of consumers' motivation (FWA vs. ES) on the relationship between message appeal and brand attitude (H3a), purchase intention (H3b), and WOM (H3c). Furthermore, ANOVA test was conducted to determine the most effective message appeal and motivation for influencing content attitude.

In the second experiment, from a pool of ten Social Media Influencers (SMIs), the initial focus was on selecting the first two influencers. Subsequently, the authenticity of the brand and SMIs were evaluated. Additionally, an analysis was conducted to assess the compatibility between the brand and the chosen SMIs, aiming to gauge the alignment and synergy between the brand and the selected influencers. Finally, the analysis shifted to assess the moderating effect of the message source (brand vs. SMI) on the relationship between message appeal and brand attitude (H4a), purchase intention (H4b), and WOM (H4c) using ANOVA tests. The results of each analyses presented and discussed below.

7.6.1. Experiment I

First experiment focuses initially on understanding whether the respondents accurately perceived images and their corresponding texts. In this context, 196 respondents saw the sensual images ($N_{\text{Sensual_FWA}} = 99$, $N_{\text{Sensual_ES}} = 97$) with the question of “The Instagram post intends to make people pleasant”, 171 respondents saw the guilty images ($N_{\text{Guilty_FWA}} = 82$, $N_{\text{Guilty_ES}} = 89$) with the question of “The Instagram post intends to make people feel accountable”, and 171 respondents saw the informational images ($N_{\text{Informational_FWA}} = 86$, $N_{\text{Informational_ES}} = 85$) with the question of “The Instagram post is informative”. After an image was shown to the respondent, the accuracy in creating the desired image processing was asked to score between 1 (strongly disagree) and 5 (strongly agree).

Therefore, a manipulation check was employed and one sample t-test was conducted to determine whether there is a difference between the results on the message appeals and the mean of the scores ($M = 2.50$), asking identical questions for the stimulus test and pre-test across each message appeal. The mean of sensual message appeal was ($N_{\text{sensual}} = 196$;

$M_{\text{sensual}} = 3.82$; $SD_{\text{sensual}} = 1.14$), $[t(195) = 16.231, p = .000]$; while the mean of guilty message appeal was ($N_{\text{guilty}} = 171$; $M_{\text{guilty}} = 4.22$; $SD_{\text{guilty}} = 1.01$), $[t(170) = 22.249, p = .000]$. Furthermore, the mean of informational message appeal was ($N_{\text{informational}} = 171$; $M_{\text{informational}} = 4.28$; $SD_{\text{informational}} = 0.83$), $[t(170) = 28.126, p = .000]$. Therefore, each message appeal was significantly different from the mean score (2.50). Furthermore, based on the findings, the informational appeal was more effective than both sensual and guilty message appeals. In other words, the rational message appeal achieved a higher mean score compared to emotional message appeals (see Table 14).

Table 14 *Demographic and perceived message characteristic of participants*

	Age			Female		Message perception	
	n	Mean	SD	n	%	Mean	SD
Sensual message appeal							
Sensual FWA	99	31	1.08	49	49%	3.89	1.08
Sensual ES	97	33	1.01	51	53%	3.73	1.19
<i>Sensual Total</i>	196	32	1.05	100	51%	3.82	1.14
Guilty message appeal							
Guilty FWA	82	32	0.92	39	48%	4.24	1.05
Guilty ES	89	34	1.08	43	48%	4.19	0.98
<i>Guilty Total</i>	171	33	1.01	82	48%	4.22	1.01
Informational message appeal							
Informational FWA	86	32	1.08	37	43%	4.21	0.90
Informational ES	85	32	1.11	55	65%	4.35	0.75
<i>Informational Total</i>	171	32	1.09	92	53%	4.28	0.83
*measures on a 5 point scale							

7.6.1.1. Direct Effect of MA on BA, INT and WOM

A one-way between subjects ANOVA was employed to examine whether message appeal has any significant effect on brand attitude, purchase intention and WOM. Furthermore, the descriptive statistics were analyzed, since descriptive statistics has become a more specific method in order to interpret the outcomes because of conducting an experimental study. Finally, Tukey's HSD Q statistics was also used to understand the

differences between means and experimental groups. Analyses were presented through tables and graphs.

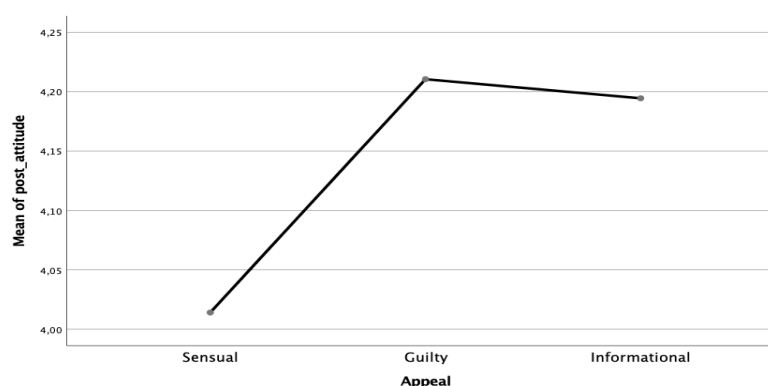
In consideration of the attitude toward the brand (BA) (H1a), the concept was assessed using four questions (see Appendix D). First, analysis was conducted to compare the effect of message appeal on brand attitude in sensual, guilty and informational appeals. There was a significant effect of message appeal on brand attitude at the $p < .05$ for three conditions [$F(2, 535) = 4.343, p = .013$]. Therefore, H1a was supported.

Furthermore, the descriptive statistics analyzed. Upon statistical analysis, it was found that guilty message appeals ($M_{BA_guilty} = 4.21, SD_{BA_guilty} = 0.61$) had a more positive effect compared to sensual ($M_{BA_sensual} = 4.01, SD_{BA_sensual} = 0.87$) and informational ($M_{BA_informational} = 4.19, SD_{BA_informational} = 0.61$) message appeals (see Table 15 and Figure 8).

Table 15 *Descriptive statistics of BA*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
Sensual	196	4.014	0.87163	0.06226	3.8912	4.1368	1
Guilty	171	4.2105	0.60535	0.04629	4.1191	4.3019	2
Informational	171	4.1944	0.61104	0.04673	4.1022	4.2867	1.75
Total	538	4.1338	0.71998	0.03104	4.0729	4.1948	1

Figure 8 *The effect of MA on BA*



Furthermore, Tukey's HSD test for multiple comparisons were analyzed showed that the mean score was significantly different between sensual and guilty appeals ($p = 0.024$, 95% C.I. = $[-.3725, -.0205]$), as well as, sensual and informational appeals ($p = 0.043$, 95% C.I. = $[-.3564, -.0044]$). However, there was no statistically significant difference in message appeals between the informational and guilty ($p = 0.98$) (see Table 16).

Table 16 *Tukey's HSD test of BA*

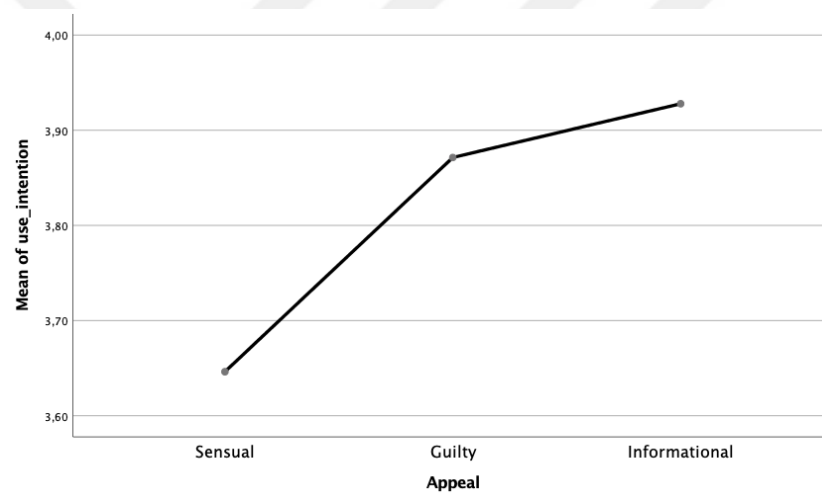
	(I) Appeal	(J) Appeal	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Sensual	Guilty	-.19650*	0.07488	0.024	-0.3725	-0.0205
		Informational	-.18041*	0.07488	0.043	-0.3564	-0.0044
	Guilty	Sensual	.19650*	0.07488	0.024	0.0205	0.3725
		Informational	0.01608	0.07738	0.976	-0.1658	0.198
	Informational	Sensual	.18041*	0.07488	0.043	0.0044	0.3564
		Guilty	-0.01608	0.07738	0.976	-0.198	0.1658

In consideration of the purchase intention (INT) (H1b), the concept was assessed using three questions (see Appendix D). First, analysis was conducted to compare the effect of message appeal on purchase intention in sensual, guilty and informational appeals. There was a significant effect of message appeal on purchase intention at the $p < .05$ for three conditions [$F(2, 535) = 4.964$, $p = .007$]. Therefore, H1b was supported.

Furthermore, the descriptive statistics were analyzed. Upon statistical analysis, it was found that informational message appeals ($M_{INT_informational} = 3.93$, $SD_{INT_informational} = 0.86$) had a more positive effect compared to sensual ($M_{INT_sensual} = 3.65$, $SD_{INT_sensual} = 1.00$) and guilty ($M_{INT_guilty} = 3.87$, $SD_{INT_guilty} = 0.85$) message appeals (see Table 17 and Figure 9).

Table 17 Descriptive statistics of INT

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
Sensual	196	3.6463	1.00121	0.07152	3.5052	3.7873	1
Guilty	171	3.8713	0.85426	0.06533	3.7424	4.0003	1
Informational	171	3.9279	0.86129	0.06586	3.7979	4.0579	1
Total	538	3.8073	0.91939	0.03964	3.7294	3.8852	1

Figure 9 The effect of MA on INT

Furthermore, Tukey's HSD test for multiple comparisons were analyzed showed that the mean score was significantly different between sensual and informational appeals ($p = 0.009$, 95% C.I. = $[-.5061, -.0572]$), as well as, sensual and guilty appeals ($p = 0.049$, 95% C.I. = $[-.4495, -.0006]$). However, there was no statistically significant difference in message appeals between the informational and guilty ($p = .84$) (see Table 18).

Table 18 *Tukey's HSD test of INT*

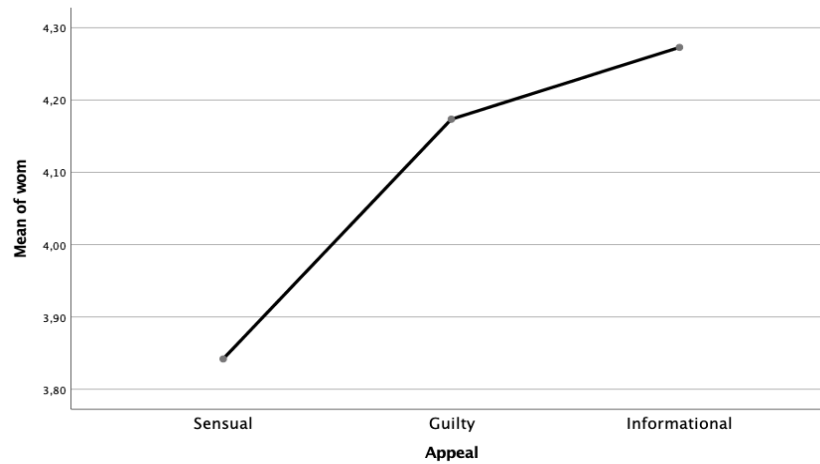
		(I) Appeal	(J) Appeal	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Tukey HSD	Sensual		Guilty	-.22509*	0.0955	0.049	-0.4495	-0.0006
			Informational	-.28162*	0.0955	0.009	-0.5061	-0.0572
	Guilty		Sensual	.22509*	0.0955	0.049	0.0006	0.4495
			Informational	-0.05653	0.0987	0.835	-0.2885	0.1754
	Informational		Sensual	.28162*	0.0955	0.009	0.0572	0.5061
			Guilty	0.05653	0.0987	0.835	-0.1754	0.2885

In consideration of the word-of-mouth (WOM) (H1c), the concept was assessed using three questions (see Appendix D). First, analysis was conducted to compare the effect of message appeal on WOM in sensual, guilty and informational appeals. There was a significant effect of message appeal on purchase intention at the $p < .05$ for three conditions [$F(2, 535) = 11.956, p = .000$]. Therefore, H1c was supported.

Furthermore, the descriptive statistics were analyzed. Upon statistical analysis, it was found that informational message appeals ($M_{WOM_informational} = 4.27, SD_{WOM_informational} = 0.76$) had a more positive effect compared to sensual ($M_{WOM_sensual} = 3.84, SD_{WOM_sensual} = 1.00$) and guilty ($M_{WOM_guilty} = 4.17, SD_{WOM_guilty} = 0.87$) message appeals (see Table 19 and Figure 10).

Table 19 *Descriptive statistics of WOM*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
Sensual	196	3.8418	1.00678	.07191	3.7000	3.9837	1.00
Guilty	171	4.1735	.86496	.06615	4.0429	4.3041	1.00
Informational	171	4.2729	.76499	.05850	4.1574	4.3884	1.00
Total	538	4.0843	.90857	.03917	4.0073	4.1612	1.00

Figure 10 *The effect of MA on WOM*

Furthermore, Tukey's HSD test for multiple comparisons were analyzed showed that the mean score was significantly different between sensual and informational appeals ($p = 0.000$, 95% C.I. = $[-.6501, -.2120]$), as well as, sensual and guilty appeals ($p = 0.001$, 95% C.I. = $[-.5507, -.1126]$). However, there was no statistically significant difference in message appeals between the informational and guilty ($p = 0.56$) (see Table 20).

Table 20 *Tukey's HSD test of INT*

		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
(I) Appeal	(J) Appeal				Lower Bound	Upper Bound	
Tukey HSD	Sensual	Guilty	-.33165*	.09319	.001	-.5507	-.1126
		Informational	-.43107*	.09319	.000	-.6501	-.2120
	Guilty	Sensual	.33165*	.09319	.001	.1126	.5507
		Informational	-.09942	.09631	.557	-.3258	.1269
	Informational	Sensual	.43107*	.09319	.000	.2120	.6501
		Guilty	.09942	.09631	.557	-.1269	.3258

7.6.1.2. Mediating Effect of BA

The PROCESS Model 4 (Hayes, 2013) was employed to examine the mediating effect of brand attitude on the relationship between intention (H2a) and WOM (H2b). The results supported a significant indirect effect of MA on INT ($b = 0.082$, $p < 0.05$) and the 95%

confidence interval for the indirect effect did not include zero (LLCI = 0.014, ULCI = 0.147) (see Table 21). Furthermore, the results supported a significant indirect effect of MA on WOM ($b = 0.087$, $p < 0.05$) and the 95% confidence interval for the indirect effect did not include zero (LLCI = 0.014, ULCI = 0.147) (see Table 22). In this context, these results supported H2a and H2b.

Table 21 *Indirect effect of MA on INT*

Indirect effect(s) of X on Y:				
	Effect	BootSE	BootLLCI	BootULCI
post	.0818	.0339	.0148	.1468

Table 22 *Indirect effect of MA on WOM*

Indirect effect(s) of X on Y:				
	Effect	BootSE	BootLLCI	BootULCI
post	.0867	.0369	.0138	.1582

7.6.1.3. Moderating Effect of Motivation

In order to understand the moderation effect of two motivations, food waste avoidance (FWA) and economic saving (ES), a total of eight motivation questions were asked, four concerning FWA ($M_{\text{fwa}} = 4.09$; $SD_{\text{fwa}} = 0.64$) and four concerning ES ($M_{\text{es}} = 3.81$; $SD_{\text{es}} = 0.77$) (see Appendix D).

First, H3a aimed to understand the moderation effect of motivations (FWA or ES) between message appeal and brand attitude via General Linear Model (Univariate) analysis. However, there was no significant difference in mean brand attitude [$F(15, 339) = .976$, $p = .480$, $\eta^2 = 0.041$] between message appeal and FWA. Furthermore, there was no significant difference in mean brand attitude [$F(21, 339) = 1.049$, $p = .403$, $\eta^2 = 0.061$] between message appeal and ES. Therefore, H3a was not supported.

Second, H3b aimed to understand the moderation effect of motivations (FWA or ES) between message appeal and purchase intention. However, General Linear Model

(Univariate) analysis with purchase intention as the dependent variable did not reveal a significant interaction effect between message appeal and FWA [$F(15, 339) = .728, p = .756, \eta^2 = .031$]; as well as, message appeal and ES [$F(21, 339) = .880, p = .618, \eta^2 = .052$]. Therefore, H3b was not supported.

Last, H3c aimed to understand moderation effect of motivations (FWA or ES) between message appeal and WOM. However, General Linear Model (Univariate) analysis with WOM as the dependent variable also did not show a significant interaction effect between message appeal and FWA [$F(15, 339) = .850, p = .622, \eta^2 = .036$]; as well as, message appeal and ES [$F(21, 339) = 1.063, p = .387, \eta^2 = 0.62$]. Thus, H3c was not supported.

7.6.1.4. Hypotheses Summary: Experiment I

In the first experiment, a total of eight hypotheses were formulated. Among these, five hypotheses were found to have statistically significant results, while three did not receive confirmation. The results of the hypotheses were summarized in Table 23.

Table 23 *Hypotheses results of Experiment I*

Hypotheses	R ²	Hypothesis Test
H1a	MA → BA	Supported
H1b	MA → INT	Supported
H1c	MA → WOM	Supported
H2a	Mediating Effect MA → BA → INT	Supported
H2b	Mediating Effect MA → BA → WOM	Supported
H3a	Moderating Effect MA → MOT → BA	Not Supported
H3b	Moderating Effect MA → MOT → INT	Not Supported
H3c	Moderating Effect MA → MOT → WOM	Not Supported

7.6.1.5. Stimulus Development for the Experiment II

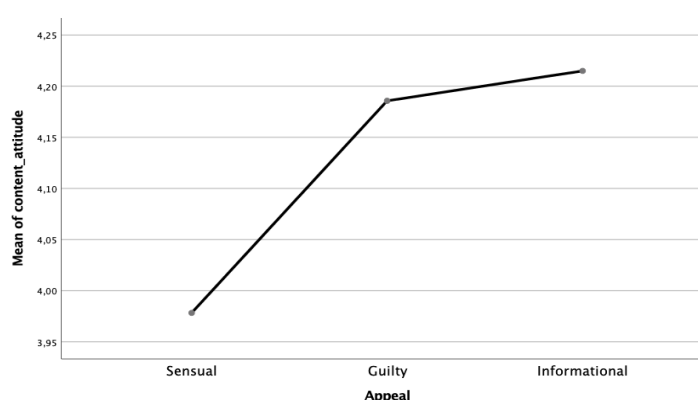
According to the first experiment, Informational-FWA image was chosen by analyzing the effect of message appeal on content attitude via one way ANOVA. Considering the content attitude (CA), four questions were asked (see Appendix D). After the respondents were distributed six different conditions, ANOVA analysis revealed a statistically significant

difference (p values < 0.05) between sensual, guilty and informational appeals on the content attitude [$F(2, 535) = 5.317, p = .005$]. Furthermore, according to the result of descriptive on CA in the first experiment, informational message appeals ($M_{CA_informational} = 4.21, SD_{CA_informational} = 0.70$) had a more positive effect on content attitude compared to sensual ($M_{CA_sensual} = 3.97, SD_{CA_sensual} = 0.89$) and guilty ($M_{CA_guilty} = 4.18, SD_{CA_guilty} = 0.65$) message appeals (see Table 24 and Figure 11).

Table 24 Descriptive statistics result of CA

	Appeal	Motivation	Mean	Std. Deviation	N
CA	Sensual	Food Waste Avoidance	4.0606	.86830	99
		Economic Saving	3.8943	.91631	97
		Total	3.9783	.89398	196
	Guilty	Food Waste Avoidance	4.2591	.59634	82
		Economic Saving	4.1180	.69606	89
		Total	4.1857	.65211	171
	Informational	Food Waste Avoidance	4.2267	.66601	86
		Economic Saving	4.2029	.74552	85
		Total	4.2149	.70467	171
	Total	Food Waste Avoidance	4.1751	.73193	267
		Economic Saving	4.0646	.80420	271
		Total	4.1194	.77046	538

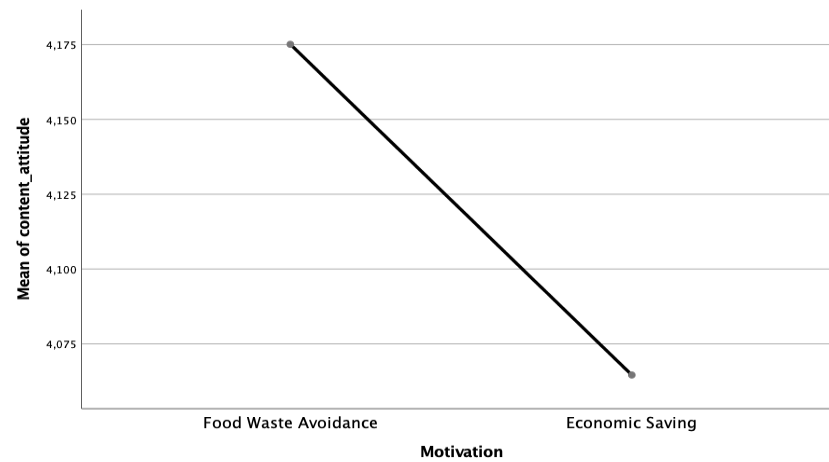
Figure 11 The effect of MA on CA



While making the motivation decision, it was also looked at which motivation (FWA or ES) was more effective on CA. Accordingly, FWA ($M_{FWA} = 4.18, SD_{FWA} = 0.73$) was

found to be more effective than ES ($M_{ES} = 4.06$, $SD_{ES} = 0.80$) in total averages (see Table 23 and Figure 12).

Figure 12 *The effect of MOT (FWA and ES) on CA*



7.6.1.6. Discussion of Experiment I

In line with the objectives of the first experiment which aimed to gain comprehensive insights into consumers' responses to message appeal, the first initial focus was on ensuring the accurate perception of the messages. Subsequently, the following hypotheses analyses were carried out: (1) examining the impact of MA on consumer responses; (2) investigating the mediation role of BA; and (3) exploring the moderation effect of consumers' motivations. Additionally, the impact of MA and motivation on content attitude (CA) was investigated to develop stimulus for the second experiment. Moreover, this discussion section focuses on the Elaboration Likelihood Model's (ELM) influence on the variables of MA and motivation.

The analyzes indicated a direct effect between message appeals and consumer responses which supported H1a, H1b and H1c. As determined during the manipulation check, the awareness and familiarity of the brand are quite low. However, the brand familiarity plays a role in message appeal. While informed consumers are less interested in advertisements with emotional appeal, advertisements containing information can be more persuasive when they have limited information about the brand (Rhee and Jung, 2019).

Furthermore, since sustainable practices are considered rational due to preserving the place and securing the future, rational sustainability messages are expected to have a positive impact on consumer intentions (Melo and de Farias, 2018). In other words, utilizing a concrete message appeal led to a higher purchase intention for the advertised product compared to an abstract message appeal (subjective and generic messages), attributed to the message's originality and the product's perceived sustainability (Kapoor et al., 2023).

Thus, the lesser familiarity of the brand and its stated purpose of environmental benefit actually explained why guilty messages were more effective in shaping attitudes toward the brand. Guilty messages can be linked with the environmental factors that raise awareness about the importance of this issue, given that individuals are frequently exposed to advertisements and messages concerning environmental issues. This is because the effectiveness of a message appeal is influenced by an individual's prior knowledge (Dens and De Pelsmacker, 2010). In this field, Lee et al. (2013) state that the positive effects of health labels may result from automatic processing based on heuristic knowledge; this suggests that consumers' responses to messaging appeals may be influenced by cognitive shortcuts. Similarly, Magnier et al. (2016) claim that externally communicated sustainable or environmental benefits, such as sustainable packaging, may not influence consumers' perceptions of product quality if the food is already perceived as inherently sustainable. These findings support the idea that consumers' pre-existing attitudes and perceptions play an important role (Jaeger et al., 2023) in how they respond to various message appeals, including guilt messages related to suboptimal food consumption and environmental factors. On the other hand, when they do not have prior knowledge, people are willing to learn from advertisements, process information, and remember it in the long term (Rhee and Jung, 2019). Therefore, guilty appeals, due to their ability to evoke emotions and influence perceptions, are shown to have a positive effect on brand attitude concerning suboptimal food consumption.

In addition to displaying a positive attitude towards the brand, it was crucial to increase purchase intention and create positive WOM. In this context, the unknown/little known brand revealed that the use of informational messages would be more effective. Due to the fact that the brand was a little-known brand, the purpose of the application was stated in each message appeal as "the benefit that arises from the purchase of products that businesses

cannot sell yet or whose expiration date is approaching". Despite this statement, it was revealed that the informative message, namely, the rational message, was the most effective message for this brand in terms of purchase intention and positive WOM for suboptimal food consumption. While there is ongoing discussion regarding the persuasiveness of message appeals within sustainability communication (Li and See-To, 2023; Reczek et al., 2018; Connors et al., 2017), this study's findings can be associated with the notion that concrete messages, rather than abstract ones, are considered more credible (Kapoor et al., 2023), mirroring the role of rational messages in this study. Therefore, when the message is perceived credible, it can cultivate a sustainable image in their minds (Lim and Young, 2021).

Considering the relationship between ELM and message appeals, a study by Rhee and Jung (2019) propose that well-known brands would create a more positive attitude from individuals through emotional message appeals, while less familiar brands would generate a more positive attitude by employing informational messages (Rhee and Jung, 2019, p. 574). Despite the potential bias introduced by prior brand awareness, the decision to include a real brand rather than introducing a completely new brand provided valuable insights into the influence of brand familiarity on message appeal and persuasive routes in ELM. Consequently, building on insights from prior research, the findings suggested that adopting an informational approach for conveying messages about the lesser-known brand would be more effective. This strategic alignment with existing literature underscores the importance of considering brand familiarity and message appeal in designing persuasive communication strategies within the ELM framework.

Additionally, considering the mediating effect of the brand attitude, a favorable brand attitude positively impact purchase intention (Ghorban, 2012; Lee et al., 2018) and WOM (Casidy and Wymer, 2015; Lee et al., 2018). Building on this literature, the results of the present study indicated that brand attitude indirectly mediated both purchase intention and positive WOM regarding suboptimal food consumption, thereby providing empirical support for hypotheses H2a and H2b. This finding underscores the pivotal role of brand attitude in shaping consumer behavioral intentions and communication actions, highlighting its significance within the context of sustainability communication and consumer behavior.

Furthermore, according to the analyses of the motivations' moderating effect between message appeal and consumers' responses are formed in two dominant ways as price and environmental consciousness (Xu et al., 2021) which were adapted as economic saving and food waste avoidance in this study. However, the findings did not align with hypotheses H3a, H3b and H3c. Consequently, the results revealed the significance of low brand familiarity, indicating that initially prioritize acquiring information about the product or service and becoming familiarized with the brand (Rhee and Jung, 2019). Hence, rather than focusing solely on measuring motivations, addressing low brand familiarity should be prioritized.

Moreover, the analysis underscored the differential effectiveness of FWA and ES in shaping the attitude towards the content (CA), with FWA exhibiting a stronger impact. This finding was further supported by the higher level of motivation observed among respondents towards FWA compared to ES. Within the context of the ELM, understanding the dynamics between motivation and message processing becomes paramount. In particular, the emphasis on assessing the impact of FWA, which is prominent in environmental concerns, highlights the role of motivational factors in influencing information processing and attitude formation. For instance, building on prior research by Andreu et al. (2015), which suggests that rational arguments have a heightened impact on addressing environmental concerns, especially in situations involving high involvement processing, these findings emphasize the necessity for tailored communication strategies that align with consumers' motivational orientations. As a result, given the circumstance of the brand being relatively unfamiliar, a strategic emphasis on rational (informational) messages with a substantial environmental content can prompt consumers to adopt the central route (high involvement and motivation) of processing in ELM. This approach aims to leverage the consumers' cognitive engagement and enable them to critically evaluate the content.

As a result, the first experiment addressed several key gaps in the existing literature regarding sustainable food consumption and food waste management. Emphasizing the role of economic factors in these contexts (Öztürk and Tekeli, 2021), it explored strategies for sustainability communication aimed at stimulating consumer motivation (Teng et al., 2021). Notably, it delved into effective methods for conveying messages about reducing food waste to consumers, extending research findings to practical scenarios such as actual purchases

and a diverse participant sample (van Herpen and Jaegers, 2022). Additionally, the experiment examined the conditions of message appeals for effective communication, incorporating both positive and negative emotional appeals, as well as rational appeals (Kapoor et al., 2020).

Moreover, while the significance of the message source in sustainability communication was underscored, with equal importance placed on the appeal of the message and its source. Understanding whether the message originates directly from the company or is relayed through a SMI is crucial, as it impacts the resonance of sustainability communications with consumers (Kapoor et al., 2020). Striking the right balance between message appeal and its source is essential for fostering real connections and gaining consumer commitment to sustainable practices (Kronrod et al., 2012; Lyon and Montgomery, 2013; Kim and Kim, 2014; Cozzio et al., 2020). Therefore, the second experiment was conducted to further explore these dynamics.

Building upon the results of the first experiment, which highlighted the greater impact of informational message appeals and FWA motivation on Content Attitude (CA), the second experiment focused on the image containing informational content and FWA theme. While this image was chosen to reflect the central route in the ELM, with the aim of deep understanding of how different message appeals and motivations interact to influence consumer responses to sustainability messages, the focus was to understand the role of ELM on message source.

7.6.2. Experiment II

In the second experiment, hypotheses were evaluated based on the most effective message content—informational and food waste avoidance—identified from the first experiment's findings regarding attitudes toward message content. Therefore, the main purpose of the Experiment II is to analyze the effect of the message source on consumer reactions. In this context, two sources were taken into consideration in this section: SMI and the company. Respondents in the qualitative study mentioned that working with micro influencers provides more confidence on the content and on the message rather than celebrity

endorsers as they most likely reflect more similar values with the ones of the company and therefore appear to be more genuine and authentic. Therefore, influencers who have less than one million followers were selected as the sources of messages in the experiment II instead of celebrity endorsers.

7.6.2.1. Selection of SMIs

In order to understand SMI awareness, ten Influencer names and profile pictures were shown to the respondents to analyze SMI awareness (see Table 25). 12.72% of the respondents stated they know Ceren Morova Instagram Influencer with the profile name “Cerenenzi” (hereinafter referred to as SMI-1). While she was the SMI known most by the respondents, SMI-1’s comedic identity, led to include Beril Oymak (hereinafter referred to as SMI-2), with an awareness rate of 8.61%, as she follows SMI-1 closely with her more food-oriented and concerned with sustainability reflection on social media.

Table 25 *Social Media Influencer (SMI) awareness*

Influencer	Awareness (%)	Influencer	Awareness (%)
happyfoodss / Fulya Çelik	5.87 %	Ekolojik Yolum/ Gözde Özbey	2.74 %
nilkiyisi	2.35 %	Türk İşi Minimalizm/ Hale Acun Aydın	2.15 %
Fit Gusto/ Hüseyin Şirin	3.72 %	Zeze Cooks	4.89 %
cerennzi / Ceren Morova	12.72 %	Beril Oymak	8.61 %
Sürdürülebilir Bir Yaşam/ Begüm Yağcı	6.65 %	Berraque / Berrak	4.11 %

Following the results of the first experiment, informational and FWA message appeals posted by the brand (see Appendix G) and the two SMIs were shown to respondents in the second experiment (see Appendix H). Furthermore, only the motivation questions containing FWA were asked to the respondents.

7.6.2.2. Authenticity and Compatibility

In total, 347 responses were analyzed (113 respondents saw SMI-1 profile/image; 116 respondents saw SMI-2 profile/image; and 118 respondents the brand profile/image). Four descriptive questions were asked about the influencers in order to understand their authenticity and the brand and compatibility between SMIs and the brand using a five-point scale ranging from “1” denoting “strongly disagree” to “5” “strongly agree” (see Appendix E). The attractiveness, expertise and trustworthiness of the Influencers were analyzed in terms of authenticity.

When the means of authenticity of SMIs were analyzed; SMI-2’s attractiveness ($M_{SMI_2} = 3.46$ and $SD_{SMI_2} = 0.99$), expertise ($M_{SMI_2} = 3.49$ and $SD_{SMI_2} = 0.98$) and trustworthiness ($M_{SMI_2} = 3.28$ and $SD_{SMI_2} = 0.95$) were favorable than SMI-1’s attractiveness ($M_{SMI_1} = 3.34$ and $SD_{SMI_1} = 1.02$), expertise ($M_{SMI_1} = 3.30$ and $SD_{SMI_1} = 1.07$) and trustworthiness ($M_{SMI_1} = 3.22$ and $SD_{SMI_1} = 1.01$). Furthermore, when the compatibility among the brand and SMIs were analyzed, SMI-2 ($M_{SMI_2} = 3.73$ and $SD_{SMI_2} = 0.97$) had better harmony than SMI-1 ($M_{SMI_1} = 3.66$ and $SD_{SMI_1} = 0.96$).

7.6.2.3. Moderation Effect of Message Source

While examining the respondents’ reactions towards message sources (SMI vs. company), first the Instagram images were randomly shown to the respondents and then the questions of brand attitude, purchase intention and WOM were asked (see Appendix E). The moderation effect of the message source was analyzed by using ANOVA test and summarized with tables. It was demonstrated how all variables of consumer responses (BA, INT, WOM) change according to conditions message sources (SMIs and the company). Therefore, conducting an experimental study necessitated the adoption of descriptive statistics as a more precise method for interpreting the outcomes.

Initially, H4a aimed to understand the effect of message source on brand attitude using the same kind of message content. An ANOVA [$F(2, 344) = .345$, $p = .708$] compared the effect of message source on brand attitude in terms of the brand ($M_{BA} = 4.03$ and SD

$_{BA} = 0.86$), SMI-1 ($M_{BA} = 4.03$ and $SD_{BA} = 0.73$) and SMI-2 ($M_{BA} = 4.10$ and $SD_{BA} = 0.73$) as the source of the message. However, there was no significant effect of message source on brand attitude at the $p > .05$ for three different message sources. Therefore, H4a was not supported.

Furthermore, H4b aimed to understand the effect of message source on purchase intention. An ANOVA [$F(2, 344) = .051$, $p = .950$] compared the effect of message source on purchase intention of the brand in terms of the brand ($M_{INT} = 3.79$ and $SD_{INT} = 1.02$), SMI-1 ($M_{INT} = 3.77$ and $SD_{INT} = 0.88$) and SMI-2 ($M_{INT} = 3.81$ and $SD_{INT} = 0.97$) as the source of the message. However, there was no significant effect of message source on purchase intention at the $p > .05$ for three different message sources. Therefore, H4b was also not supported.

Last, H4c aimed to understand the effect of message source on WOM. An ANOVA [$F(2, 344) = 1.878$, $p = .154$] compared the effect of message source on WOM in terms of the brand ($M_{WOM} = 3.99$ and $SD_{BA} = 0.91$), SMI-1 ($M_{WOM} = 4.08$ and $SD_{BA} = 0.80$) and SMI-2 ($M_{WOM} = 4.20$ and $SD_{BA} = 0.78$) as the source of the message. However, there was no significant effect of message source on WOM at the $p > .05$ for three different message sources. Therefore, H4c was also not supported.

7.6.2.4. Hypotheses Summary: Experiment II

In the second experiment, a total of three hypotheses were formulated; yet none received empirical support. The results of the hypotheses were summarized in Table 26.

Table 26 *Hypotheses results of Experiment II*

Hypotheses	R ²	Hypothesis Test
H4a	MS → BA	Not Supported
H4b	MS → INT	Not Supported
H4c	MS → WOM	Not Supported

7.6.2.5. Discussion of Experiment II

In line with the objectives of the second experiment which aimed to gain comprehensive insights into consumers' responses to message source, the first initial focus was on understanding the authenticity of the SMIs and the brand and compatibility among the SMIs and the brand. Subsequently, the moderation effect of message source on consumer responses was analyzed within H4.

As companies leverage social media to endorse sustainable products, they are progressively partnering with third-party entities such as SMIs to involve social media users in discussions about sustainability (Kapoor et al., 2022). This is because SMIs possess the ability to influence and shape attitudes and behaviors with their significant followers (Audrezet et al., 2020) and their popularity have increased in recent years (Kapoor et al., 2023). However, the harmony of an influencer and brand product is extremely important in terms of perceived expertise and credibility. A strong influencer and brand fit affects the attitude and purchase intentions of consumers and increases the credibility of the influencers (Breves et al. 2019). According to the descriptive questions, the attractiveness, expertise, trustworthiness and compatibility of the SMI-2 showed higher impact than SMI-1 because of her more food-oriented and sustainability aimed profile, which indicates the importance of the harmony between the brand and SMI.

Furthermore, taking the findings with respect to the moderation effect of the message source in the second experiment into consideration, message source had no significant effect as a moderator. Indeed, SMIs play a critical role in shaping consumers' perceptions of authenticity and their feelings toward a brand and its sustainability-related image (Afzali and Kim, 2021). Likewise, mounting evidence suggests that perceived authenticity enhances product image and reputation (Lim and Young, 2021). However, considering brand awareness, a different viewpoint may be warranted on this matter. When people see ads for unfamiliar brands on social media, consumers consider various factors to determine their interest, such as the attractiveness or popularity of the message source. For instance, in Twitter, famous people are better at getting people interested in unknown brands. Therefore, celebrities can make unfamiliar brands stand out on social media (Wood and Burkhalter,

2014). In these cases, SMIs who seem smart and authentic are not as effective as celebrity endorsers who seem good-looking and popular, because people don't know much about these brands yet (Zhu et al., 2021).

Recently, ELM has been expanded and applied in the field of social media to express consumer responses (Putra and Suprpti, 2020). In the domain of source reliability, ELM can be regarded as a central or an peripheral factor (Ismagilova et al., 2021). In this context, central factors, including originality, uniqueness and informativeness of the post content attributes and peripheral factors such as the influencer's physical attractiveness, trustworthiness, and self-presentation were considered (Farivar et al., 2023). Given the non-significance of the message source, brand awareness becomes pivotal in the context of the ELM (Rhee and Jung, 2019) as it was emphasized in the first experiment. Since the images were distributed through the lesser-known brand, it becomes important for consumers to obtain information about the brand beforehand. In this context, this highlights the crucial role of post content attributes like originality, uniqueness, and informativeness, emphasizing the importance of following the central processing route in the ELM (Farivar et al., 2023). Similarly, another research claims that when dealing with well-known brands, consumers often concentrate on intrinsic cues, individuals encountering unfamiliar brands tend to seek out extrinsic cues such as price and country of origin to assess products (Roy and Bagdare, 2015).

As a result, the second experiment addressed several key gaps in the existing literature concerning sustainable food consumption and food waste management. It examined strategies for sustainability communication (Teng et al., 2021) with the aim of stimulating different message sources. Furthermore, a practical scenario by focusing on a real brand and SMIs within a diverse pool of respondents (van Herpen and Jaegers, 2022) was adopted. By taking into consideration these gaps and the findings, brand familiarity emerges a critical factor, as the first experiment. Therefore, while deciding the message source, it is important to understand the relationship between brand awareness and consumer perception and develop effective marketing strategies.

8. CONCLUSION AND RECOMMENDATIONS

The necessity to reduce food waste resulting from suboptimal food consumption is increasingly recognized as a pressing concern, underscored by its noticeable gap within existing literature that leverages mixed methods and real-life scenarios (van Herpen and Jaegers, 2022). Since this dissertation uses an exploratory sequential mixed methods design (Creswell, 2014), the discovery phase, which begins with qualitative interviews, aims to understand motivations for consuming suboptimal foods. Then, a conceptual model was developed based on the findings and two experiments were conducted to test this model. This method serves a developmental purpose, aiming to assess generalizability to a large population sample (van Herpen and Jaegers, 2022; Rhee and Jung, 2019), especially by focusing on real-life scenarios.

In the qualitative study, the participants who had previously purchased and consumed suboptimal foods, as well as those who were prospect groups for suboptimal food consumption, were evaluated through focus groups and in-depth interviews. The findings from both groups highlight factors such as economic savings, avoiding food waste and conscious consumption. Since the most of the participants were environmentally and economically conscious, aligning with the findings of Xu et al. (2021), the qualitative study identifies the main motivations of these consumers as “food waste avoidance” and “economic savings”, which were adopted for the stimulus development and moderators in the quantitative study.

Moreover, the findings of the experiments highlight various outcomes, including: (1) usage of the social media platforms, (2) investigating brand familiarity, (3) focusing on the impact of message appeal on brand attitude, (4) assessing the influence of message appeals on purchase intention and WOM, (5) examining the role of message source. Furthermore, the findings comprehend the effect of the ELM on variables of message appeal, motivation and message source.

First, based on the descriptive question results regarding respondents’ social media platform usage, it is evident that Instagram is utilized by nearly all respondents, reflecting a

significant growth in Instagram usage in 2023 (Inbusiness, 2023). Given this data, it was a sound and fitting decision to address the gap in the literature (van Herpen and Jaegers, 2022; Närvänen et al., 2018) by constructing a genuine scenario involving Instagram posts for experiments.

Second, instead of focusing on a hypothetical brand, a lesser-known brand which has a purpose of reducing food waste was selected. The lesser-known brand was preferred in order to prevent the results from being affected by potential biases caused by prior knowledge about well-known brands (Khan and Fatma, 2023). Therefore, regarding the pre-manipulation check, it was proven that the awareness and familiarity of the brand that was selected for both qualitative and quantitative studies were quite low. Moreover, participants reported that there were insufficient information about the brand's purpose of reducing food waste and selling suboptimal foods with discounted prices, when browsing the Instagram account of the brand. Against this background, taking the results from both qualitative and quantitative studies into consideration, one major recommendation is to post more informative messages on Instagram by highlighting the purpose of suboptimal food consumption and food waste reduction; and encourage consumers to both suboptimal food consumption and recommend it to others. Since brands that lack familiarity possess minimal brand equity, they must devise strategies to establish recognition in order to stay competitive (Paputungan et al., 2023; Campbell and Keller, 2003).

Third, the fact that the brand is lesser-known and its purpose is stated as environmental benefit shows that guilt messages are more effective in terms of attitude towards the brand. Guilty messages can be linked with the environmental factors that raise awareness about the importance of this issue; and individuals are frequently exposed to advertisements and messages concerning environmental issues. The effectiveness of a message appeal is influenced by an individual's previous knowledge, and this can be attributed to why guilty messages are effective in shaping brand attitude for suboptimal food consumption. This evidence reinforces the notion that consumers' existing attitudes and perceptions significantly influence their responses (Jaeger et al., 2023) to different message appeals, such as guilty messages concerning suboptimal food consumption and environmental considerations. In this context, sustainable food companies can prefer to use guilty messages to drive positive brand evaluations, especially when consumers are conscious of the

environmental consequences of food waste. Moreover, rational (informational) messages make an effort for a strong influence on content attitude, especially given the emphasis of unfamiliar nature of the brand and food waste avoidance. A strategic focus on informational messages with substantial environmental content is recommended to prompt consumers to adopt the central route in ELM, engaging them cognitively and encouraging critical evaluation (Li and See-To, 2023). In other words, highlighting the importance of a company's environmental conduct in shaping consumer preferences emphasizes the greater influence of rational arguments on environmental concerns, especially in situations requiring high involvement processing (Andreu et al., 2015). This suggests that instead of solely focusing on measuring motivations, efforts should be directed towards addressing low brand familiarity, which may have a more substantial impact on consumer responses. Thus, by recognizing the dominance of FWA in driving environmental concerns and leveraging rational appeals effectively, businesses can enhance the effectiveness of their sustainability communication efforts, ultimately fostering more meaningful engagement and behavior change among consumers.

Fourth, considering the variations in consumers' knowledge structures regarding brands, which can vary in density and scale, it is important to recognize that consumers employ different approaches when evaluating brands based on product-related cues (Rao and Monroe, 1988). Consequently, it is suggested that for relatively unknown or less familiar brands, it would be beneficial to clearly state the brand's purpose in their messages. However, despite this recommendation, this study has shown that the most effective type of message appeal in terms of influencing purchase intention and generating positive WOM is an informative or rational message, although the aim of the brand and the focus of the motivations were added to all type of message appeals in the Instagram posts. Therefore, it remains crucial to incorporate the brand's purpose into the message content. In this context, while processing the information of the message, ELM can be taken into consideration. The findings indicate that peripheral cues may not consistently influence consumers responses, particularly when brand familiarity is low (Rhee and Jung, 2019). It underscores the importance of low brand familiarity, suggesting that consumers prioritize gathering information about the product or service. Therefore by prioritizing strategies aimed at enhancing brand familiarity and understanding, businesses can potentially improve consumer engagement and response to sustainability messages.

Fifth, taking the findings with respect to the effect of the message source in the second experiment into consideration, message source had no significant effect as a moderator. Brands aiming to promote themselves on social media, especially if they are relatively unknown, it's highlighted that influencers perceived as smart and authentic may not be as effective as celebrities perceived as attractive and popular (Zhu et al., 2021). Therefore, brands should consider leveraging celebrity endorsements to enhance their visibility. However, it's important for brands to select celebrities who align with their target audience and brand image to maximize effectiveness. Additionally, while SMIs remain valuable, they should focus on building authenticity and credibility to resonate with audiences in an era where consumer trust is paramount. Therefore, little-known brands should focus on celebrity endorsers whose values align closely with the brand's identity, fostering a sense of rapport and authenticity that resonates with their target audience. Moreover, from the perspective of ELM, authenticity emerged as a key factor in message source (Farivar et al., 2023), underscoring the importance of post content attributes such as originality and informativeness to facilitate central processing. In this context, the quality, originality, and uniqueness of the message content, as well as its informativeness, emerge as key drivers of persuasion and attitude formation, particularly for brands aiming to establish themselves or enhance their reputation among consumers.

9. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Despite its valuable insights, it is important to acknowledge limitations of this study in order to provide a comprehensive understanding of its findings and shape future research directions. Therefore, as a first limitation of this dissertation, brand familiarity did not taken into account as a construct of the study. One of the primary justifications for the hypothesis revolved around the significance of brand familiarity. As a result, brand familiarity can be incorporated into the conceptual model as a potential mediator or moderator of the study.

Second, uniform message appeal treatment came to the fore as a limitation of this study. Despite the study utilized three different message appeals, all of them involved providing information about the service or brand. The study aimed to focus solely on conveying information about the brand or service and the consequences of suboptimal food consumption through informational appeals. However, sensual and guilty message appeals also conveyed these information. Therefore, the low brand familiarity negatively impacted the necessity to communicate the purpose of the service, which arises another limitation between message appeal contents.

Third, the message length and respondent engagement can be considered as another limitation of this study. The extensive information given in each message appeal, designed to convey the brand's purpose, resulted in longer message texts. Consequently, respondents reported not reading these texts thoroughly, as revealed through open-ended questions concerning stimulus testing. This limitation underscores the need for more concise messaging and the potential bias in responses related to the images, as respondents predominantly focused on visual elements.

Fourth, geographic and demographic scope can be taken into consideration as a future study. While the study drew from a dataset of over 1,000 participants within 31 districts from Istanbul, which is representative of Turkey, there is potential to generalize the finding to a broader international context. Therefore, conducting cross-cultural studies may be considered as a future study. Furthermore, exploring the influence of demographic characteristics on respondent preferences could offer more distinctive insights. This

limitation emphasizes the need to categorize target audiences more precisely, based on cultural traits, social pressures and trust issues. Therefore, the detailed analysis matching demographic characteristics with motivation question responses could yield richer insights into sustainability communication's relationship with brand familiarity.

Fifth, another limitation of this study lies in its exclusive emphasis on influencers. While micro and macro influencers offer valuable insights, their impact may differ from that of celebrity endorsers. This limitation arises from the absence of a comparative analysis. Future research could consider incorporating celebrity endorsers as an alternative to social media influencers. This would allow for a more comprehensive understanding of how different influencer types interact with the concept of brand familiarity and its effects on sustainability communication. Exploring the selection of influencer types based on brand familiarity presents a promising direction for future research. This approach would enable a more customized strategy in influencer marketing, ultimately contributing to a more refined understanding of its dynamics and effectiveness.

Last, a few of research in the existing literature addressing the effectiveness of persuasive communication about sustainability (Andreu et al., 2015), despite the increasing importance of sustainable approaches in the food industry, especially in regions such as Turkey (Tekiner et al., 2021). Therefore, further studies may be merged with theoretical frameworks like ELM that help understand the varying degrees of cognitive elaboration that individuals undertake when processing persuasive messages.

As a result, these limitations highlight areas for improvement and provide guidance for future research aimed at overcoming these constraints. By addressing these gaps, future studies can enhance the understanding of motivations for suboptimal food consumption from different perspectives, sustainability communication and their interplay with brand familiarity, thereby advancing knowledge in these areas.

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APPENDIX A: QUALITATIVE QUESTIONS (GROUP 1)

EN / TR

1. Introduction / Giriş

A brief information is given about the focus group content by moderators and the participant(s) will be asked to introduce themselves:

- First name, age
- District of Residence
- Education
- Profession & working status
- Daily activities

/ Katılımcılara aşağıdaki sorular yöneltilir:

- İsim
- Yaş
- İstanbul'da oturduğunuz semt
- Eğitim durumu
- Çalışma durumu
- Kısaca günlük aktiviteler

2. Nutrition and eating behavior / Beslenme ve yemek alışkanlıkları

a. Food consumption in general / Genel yemek tüketimi

- What role does food play in everyday life?
- If you go through your everyday life once: When do you eat something / take something?
- What do you pay attention to in your diet? What is important to you?
- What is characteristic about your own diet?
- To what extent are there exceptions? How do these come about? What makes them exceptions?
- To what extent do you differentiate between weekends and during the week?

/ Genel olarak gıda tüketiminiz nasıldır? (günün hangi saatlerinde bir şeyler yersiniz, hafta sonu – hafta içi farkeder mi, istinazlarınız var mıdır? Beslenmenizde nelere dikkat edersiniz?

b. Eating out / Dışarıda Yeme Alışkanlıkları

- How often do you eat out/order takeaway?
- In which situations do you order takeaway?
 - Spontaneous vs. planned ,
 - Weekday vs. weekend,
 - Alone vs. with others

- **To what extent do you choose ordering takeaway over an already planned home cooked meal?**
 - **How often do these situations occur?**
 - **What does it feel like?**
 - **What happens to the initially planned meal?**

/ Ne sıklıkla ve hangi durumlarda dışarıda yemek yersiniz veya paket sipariş verirsiniz? Durum: Planlı mıdır? Hafta içi/hafta sonu, yalnız vs. başkalarıyla

Önceden planlanmış bir ev yemeği yemek yerine ne ölçüde paket servis sipariş etmeyi ya da dışarıda yemeyi tercih ediyorsunuz? (Bu durumlar ne sıklıkla ortaya çıkıyor?, Size nasıl hissettiriyor?, Başlangıçta planlanan ev yemeğe ne olur?)

3. **Insights Sustainability, Food Waste and Individual Behavior** / Sürdürülebilirlik, Gıda Atığı ve Bireysel Davranış

a. **Sustainability in general** / Genel olarak sürdürülebilirlik

- **What comes to your mind first when thinking about sustainability in F&B? What associations do you have? What comes to mind? (Ex: Healthy, environmentally friendly, fewer additives and chemical fertilizers, food saving, high price)**

/ “Yiyecek ve içeceklerde sürdürülebilirlik ya da sürdürülebilir gıda” denince aklınıza ilk ne geliyor? Ne gibi çağrışımlar yapıyor size bu terim? (Örn: Sağlıklı, çevre dostu, daha az katkı ve kimyasal gübre, gıda tasarrufu, yüksek fiyat)

- **How would you define sustainable food products?**
 - **Do you know the benefits of sustainable food products, or when you see the label on a product about sustainability, can you easily understand what it is?**
 - **Can you trust the labels or ads?**
 - **Can you find sustainable food products easily?**
 - / Sürdürülebilir gıda ürünlerinin faydalarını biliyor musunuz?
 - Sürdürülebilirlikle ilgili bir ürünün üzerindeki etiketi gördüğünüzde ne olduğunu kolayca anlayabiliyor musunuz?
 - Ve bu etiketlere veya reklamlara güvenebilir misiniz?
 - Sürdürülebilir gıda ürünlerini kolayca bulabilir misiniz?
- **What raises your awareness about food sustainability? (examples...)**
 - **Media or social media**
 - **With friends and family**
 - **In his own behavior?**

/ Gıda sürdürülebilirliği konusundaki farkındalığınızı ne sağlıyor.. (örneğin...)

- Medya ya da sosyal medya
- Arkadaşlar ve aile ile
- Kendi davranışında mı?

b. The reasons of preferring/not preferring sustainable food product /
Sürdürülebilir ürün tercih etme/etmeme nedenleri

- **What are possible reasons to prefer Sustainable Food Product? (examples...)**
 - **Environmental Consciousness (Food waste, global warming...)**
 - **Guilty Conscience**
 - **Health Consciousness**
 - **Social Influence (Trend, Gain Status)**
 - **Enjoyable Shopping Experience**

/ Sürdürülebilir gıda ürününü tercih etmek için olası nedenler nelerdir? (örneğin...)

- Çevre Bilinci (Gıda atıkları, küresel ısınma...)
- Suçlu hissetme
- Sağlık Bilinci
- Sosyal Etki (Trend, Kazanç Durumu)
- Keyifli Alışveriş Deneyimi

- **What are possible reasons to not prefer Sustainable Food Product? (examples...)**

- **High Price**
- **Unavailability Issues**
- **Mistrust Issues**
- **Limited Knowledge**

/ Sürdürülebilir Gıda Ürünü tercih etmemek için olası nedenler nelerdir? (örneğin...)

- Kullanılamazlık Sorunları
- Güvensizlik Sorunları
- Yüksek fiyat
- Sınırlı Bilgi

c. Food waste in general / Genel olarak gıda atığı

- **What role does sustainability/food waste play personally in your life?**
- **How important is it for you?**
- **What are your motives?**
- **Are you affected by others? (Family, friends, society etc.)**

/ Sürdürülebilirlik ya da gıda israfı kişisel olarak hayatınızda nasıl bir rol oynuyor? (Sizin için ne kadar önemli?, Bu tip ürünleri kullanmak için motivasyonlarınız neler?, Başkalarından etkilenir misin? (Aile, yakınlar, toplum vb.)

- **When do you consider food as “wasted”? Impact of... (examples...)**
 - **Best before Date**
 - **Smell**
 - **Taste**
 - **Look: color, texture, etc.**

/ Yiyecekleri ne zaman “atık” olarak değerlendiriyorsunuz? (örneğin...)

- Son kullanma tarihine bakarak

- Kokusuna bakarak
- Tadına bakarak
- Görüntüsü: Renk, doku vb. bakarak
- **When is food waste acceptable and not acceptable? / Sizce gıda atıkları ne zaman kabul edilebilir (ben bu yiyeceği atabilirim diyebiliyorsunuz)? Ne zaman kabul edilemez? (ben bu yiyeceği atamam diyebiliyorsunuz)**
- **How often is food “wasted” in your household? / Evinizde yiyecekler ne sıklıkla “çöpe atılıyor”?**
- **When was the last time you had to throw away food? (describe the last situation, reason for wasting, etc.) How did you feel? / En son ne zaman yiyecekleri atmak zorunda kaldınız? (neden?) Ne hissettiniz?**
- **What are possible reasons to throw away food? (Collect all terms and explore them deeper! For example...)**
 - **Forgetting food in the fridge/drawer**
 - **Buying too much**
 - **Not cooking a dish that was actually planned**
 - **Not being at home spontaneously**
 - **Not liking the taste of certain food products/ meals**
 - **Cooking too much**

/ Yiyecekleri atmak için olası nedenler nelerdir? (Tüm terimleri toplanır ve daha derinlemesine incelenir! Örneğin...)

- Buzdolabında/çekmecedeki yiyecek unutmak
- Çok fazla satın almak
- Aslında planlanmış bir yemeği pişirmemek
- Spontane evde olmamak
- Bazı gıda ürünlerinin/yemeklerin tadını beğenmemek
- Çok fazla yemek pişirmek
- **What are possible reasons to save food?**
 - **Money**
 - **Sustainability**
 - **Conscience , or etc.**

/ Gıda israfı yapmamak için olası nedenler nelerdir?

- Para
- Sürdürülebilirlik
- Vicdan veya vb.
- **How has this ‘developed’ in the course of your life?**
 - **How was it in the past?**
 - **How do you think about it differently today?**
 - **Why has it gained importance?**
 - **Do you want to contribute?**

/ Gıda israfı, yaşamınız boyunca nasıl “gelişti”?

- Geçmişte nasıldı?
- Bugün bunun hakkında farklı düşünüyor musunuz? Ne kadar farklı düşünüyorsunuz?
- Neden önem kazandı? (günümüzdeki rolü: trend, grup uygunluğu, kazanç durumu)
- Katkıda bulunmak istiyor musunuz?

- **What role do other household members play?**

- **To what extent do they have a different opinion on food waste/sustainable food products?**

/ Diğer hane üyeleri nasıl bir rol oynuyor? (Gıda atığı/sürdürülebilir gıda ürünleri konusunda ne ölçüde farklı görüşlere sahipler mi? Bununla başa çıkmak zorunda kalıyor musun?)

d. Solutions and coping strategies / Çözümler ve baş etme stratejileri

- **What examples do you have, where food was not wasted / saved for you? (Collect all terms unaided at first!)**

- **E.g. If the food is not ending in the bin**
- **E.g. If I have any other use for the food**

/ Yiyecekler sizce hangi durumlarda israf edilmiyor ya da kurtarılıyor? Bu konuda ne tür örnekleriniz var? (İlk başta tüm terimleri yardım etmeden toparlayalım)

- Örneğin. Yiyecekler çöp kutusuna atılmıyorsa
- Örneğin. Yemek için başka bir kullanımım varsa

- **How do you deal with wasting food in your everyday life?**

- **To what extent do you try not to waste food at all?**
- **How do you do it?**

/ Günlük hayatınızda yemek israfı ile nasıl başa çıkıyorsunuz? (Yiyecekleri ne kadar israf etmemeye çalışıyorsunuz?, Bunu nasıl yapıyorsunuz?)

- **What are certain strategies/workarounds to mitigate food waste?(Collect all terms and explore them deeper! For example...)**

- **Checking the fridge for soon to expire food items regularly**
- **Giving leftover food to charity**
- **Composting**

- **Gıda israfını azaltmak için belirli stratejiler/çözümler nelerdir?(Örneğin...)**

- Son kullanma tarihi yakında dolacak yiyecekler için buzdolabını düzenli olarak kontrol etmek
- Artan yemeği hayır kurumlarına vermek
- Kompostlama

- **What could be helpful in everyday life to minimize food waste? / Gıda israfını en aza indirmek için günlük yaşamda ne yardımcı olabilir?**

- **Especially food wasters: How can wasters be motivated to throw away less food? / Özellikle yemek israf edenler için daha az yiyeceği çöpe atmak için nasıl motive edilebilir?**

e. Food waste in restaurants / Restoranlarda gıda atığı

- **Do you think restaurants have any action about food waste?**
 - **How do you feel when it is wasted in restaurants?**
 - **Do you believe that some restaurants have serious actions about sustainability? Do you know any examples about it?**
 - **Is there a difference between the perception of food waste about the products in your home and the perception of waste created in restaurants?**
 - **If a restaurant has a deal with you for saving food, would you prefer to be part of the deal?**
- **Restoranların yemek israfı konusunda bir önlemi var mı sizce?**
 - Restoranlarda gıda israf edildiğinde nasıl hissediyorsunuz?
 - Restoranda gıda atığı oluşturmamak için nelere dikkat ediyorsunuz? (ya da ediyor musunuz?) - Evinizdeki ürünlerle ilgili oluşan gıda atığı algısı ile restoranlarda oluşan gıda atığı algısı arasında bir fark var mı?
 - Bir restoran yiyecek tasarrufu için bir seçenek sunuyorsa, bu teklifi değerlendirmeyi tercih eder miydiniz?
- **If at the end of the day, a restaurant wanted to offer you a product at a lower price than the normal price so that the food would not be thrown away, would you accept it?**
 - **How do you feel about it? Ex: Saving Money, enjoyable, convenience**
 - **What do you think about the condition of the food?**
 - **Which words/ what type of promotions can convince you to buy the cheaper food?**

/ Gün sonunda bir restoran, yiyecekler israf olmasın diye size normal fiyatından daha düşük bir fiyatla ürün sunmak istese, kabul eder miydiniz?

- Bu konu hakkında nasıl hissedersiniz? (bazı anahtar kelimeler kullanabilirsiniz) Ör: Tasarruflu, keyifli, kolaylık
- Yiyeceklerin durumu hakkında ne düşünürsünüz?
- Hangi kelimeler/ne tür promosyonlar sizi restoranlardan daha ucuz yiyecekleri almaya ikna edebilir? (Örn: günlük, taze, israfa karşı...)
- **How far are you aware of companies / products / apps that help you avoid food waste? (e.g. Fazla Gıda, yenir...)**
 - **What do you think about them?**
 - **How far are they used?**
 - **Do you follow them from social media?**
 - **If yes, what are your ideas about the message contents?**

/ Bazı restoranların sürdürülebilirlik konusunda ciddi eylemleri olduğuna inanıyor musunuz? Örneğin, gıda israfını önlemenize yardımcı olan şirketler / ürünler / uygulamalardan ne kadar haberdarsınız? (örn. Fazla, yenir, Oreka...)

- Onlar hakkında ne düşünüyorsunuz?
- Ne ölçüde kullanıyorlar? (aktifler mi?)
- Instagramınız var mı? Bu firmaları Instagram'dan takip ediyor musunuz, mesaj içerikleri hakkında ne düşünüyorsunuz?

4. Wrap Up / Toparlama

- **What is your overall impression of this discussion?** / Bu tartışma hakkındaki genel izleniminiz nedir?



APPENDIX B: QUALITATIVE QUESTIONS (GROUP 2)

EN / TR

1. Introduction / Giriş

A brief information is given about the focus group content by moderators and the participant(s) will be asked to introduce themselves:

- First name, age
- District of Residence
- Education
- Profession & working status
- Since when do you know '[brand name] app/Service'? and how did you hear it?

/ Katılımcılara aşağıdaki sorular yöneltilir:

- İsim, yaş
- İstanbul'da oturduğunuz semt
- Eğitim durumu
- Çalışma durumu
- Ne zamandan beri [marka adı] uygulamasını/servisini kullanıyorsunuz ve nereden duydunuz?

2. Top of mind / Akılda kalanlar

- First write down/think 3-5 keywords that reflect your experiences/feelings as a user of [brand name] app or service. Positive/neutral/negative, it doesn't matter.
- [marka adı] denilince aklınıza gelen ilk şeyleri (birkaç anahtar kelime) söylemenizi isteyeceğiz.
 - Önce bir [marka adı] kullanıcısı olarak deneyimlerinizi/duygularınızı yansıtan 3-5 anahtar kelime yazın/düşünün. 30 saniye kadar bekleyelim. Olumlu/nötr/olumsuz, farketmez.

3. App experiences / Uygulama deneyimleri

- What prompted you to participate? How did you come to this? / Bu uygulamaya nasıl girdiniz? (girmenize ne teşvik etti)
- What are your reasons for using the [brand name] app and what do you think? / [marka adı]'ı ve dolayısıyla uygulamayı kullanma nedenleriniz nelerdir?
- At what times do you (normally) use the app/order a surprise box via the app? Explain why...
 - time of day/day of the week, which of your daily rhythm/activities
 - context: have time on that day, no money, no food in the house, etc.?

/ Uygulamayı ne zaman (normalde) kullanırsınız/uygulama aracılığıyla sürpriz kutu sipariş edersiniz? Sebebini açıkla mısınız?

İpuçları:

- günün saati/haftanın günü, hangi günlük ritminize/faaliyetlerinizde
- bağlam: o gün vaktin var mı, kısıtlı bir bütçeniz varken mi, evde yemek yok, vs.?

4. Surprise box experiences / sürpriz kutu deneyimleri

- **Please tell us: the first time you ordered and picked up a surprise box, how did you experience it?**

- **What made you order your first surprise box?**
- **pluses/minus**
- **drivers/thresholds**

/ Sürpriz kutuyu ilk sipariş ettiğinizde ve aldığınızda, bunu nasıl deneyimlediniz? (artıları, eksiler nelerdir)

- Sürpriz kutunu sipariş etmenize ne sebep oldu?
- artılar/eksiler
- cazip kılan/engel teşkil eden konular

- **Your first purchase**

- **Was it at a store you already knew or a new store?**
- **Did you order from that store on purpose or did the available choices make you do so?**
- **If this was a store you ordered for the first time, how did it feel to order from there?**
- **Did you buy more often at this store afterwards?**
- **Did you visit any new stores by using the app?**

/ İlk siparişiniz;

- Bildiğiniz bir işletmeden miydi, yoksa daha önce deneyimlemediğiniz bir işletme miydi?
- İsteyerek mi bu işletmeden sipariş verdiniz yoksa mevcut seçenekler sizi buna mecbur mu bıraktı?
- İlk defa deneyimlediğiniz bir işletmeden sipariş verdiyseniz, bu size nasıl hissettirdi?
- İşletmeden kutuyu teslim alma deneyiminiz nasıldı?
- Daha sonra o işletmeden daha sık satın aldınız mı?
- Uygulamayı kullanarak herhangi yeni bir işletme deneyimlediniz mi?

- **What do you think of surprise boxes?**

- **How does it feel to not know what's inside the box?**
- **When is it more/less important that you don't know what's inside the box?**

- **What would convince you to be excited and to order more surprise boxes**

/ Sürpriz kutular hakkında ne düşünüyorsunuz?

- Kutunun içinde ne olduğunu bilmemek sizce nasıl bir duygu?
- Kutunun içinde ne olduğunu bilmemeniz sizce hangi durumlarda daha fazla/daha az önemlidir?
- Sizi heyecanlandırmaya ve daha fazla sürpriz kutu sipariş etmeye ne ikna eder?
- **What do you think of the amount of food in the surprise box? Explain...** / Sürpriz kutulardaki yiyecek miktarı hakkında ne düşünüyorsunuz? Açıklar mısınız?
- **When are you positive/negative towards the surprise box ingredients? What would be effective for you to form an opinion on this subject?**
 - (probe below, if not mentioned)
 - type products
 - freshness
 - amount
 - variation
 - shop
 - your own situation at that moment

/ Sürpriz kutu içerikleri konusunda ne zaman olumlu, ne zaman olumsuzsunuz? Bu konuda fikirlerinizi şekillendirmenizde ne etkili olur?

- (bahsedilmezse aşağıdaki konulara değinilir)
 - Ürün tipi
 - Tazelik
 - Miktar
 - Çeşitlilik
 - İşletme
 - O anki modunuz
- **When you pick up a surprise box, what do you do with the food it contains? (open up first)**
 - **When will it be okay?**
 - In which situation (day, time, persons, occasion, product group etc)
 - How did that happen? What are the reasons for it to happen?
 - How often does that happen?
 - **When will it not work?**
 - In which situation (day, time, persons, occasion, product group etc)
 - How did that happen? What are the reasons it doesn't work?
 - How often does that happen?
 - If it doesn't work, what do you do with it? Why?

- Sürpriz kutu ne zaman sizin için tatmin edicidir. (hangi durumda, neden, ne kadar sıklıkla)
 - Hangi durumda (gün, saat, kişiler, fırsat, ürün grubu vb.)
 - Bu durum nasıl gerçekleşti? Sizce bunun olmasının nedenleri nelerdir?
 - Bu durum ne kadar sıklıkla gerçekleşiyor?
- Ne zaman sizi tatmin etmez. (hangi durumda, neden, ne kadar sıklıkla)
 - Hangi durumda (gün, saat, kişiler, fırsat, ürün grubu vb.)
 - Bu durum nasıl gerçekleşti? Memnun olmamanızın nedenleri nelerdir?
 - Bu durum ne kadar sıklıkla gerçekleşiyor?
- **If you don't consume the surprise box (you can't eat everything or don't like it), what do you do with it? Why?** / Eğer sürpriz kutuyu tüketmezseniz (her şeyi yiyemezseniz ya da beğenmezseniz), onunla ne yaparsınız? Neden?
- **Is there a difference between the perception of waste in the products in your home and the perception of waste in the products in the surprise box?** / Evinizde ürünlerle ilgili oluşan atık algısı ile sürpriz kutu içerisindeki ürünlerde oluşan atık algısı arasında bir fark var mı?

5. Effects of [brand name] on attitude and behavior / [marka adı]'nın tutum ve davranış etkisi

- **To what extent has the use of [brand name] (app and surprise boxes) had an effect on you in terms of food waste? Why/why not? And if so, what is that effect?**
 - Effect on behavior?
 - Effect on engagement on the topic (attitude)?
 - Effect on awareness (knowledge)?

/ [marka adı] kullanmak, gıda israfı konusunda sizi ne ölçüde etkiledi? Neden etkiledi/neden etkilemedi? Üzerinizde nasıl bir etkisi oldu?

- Davranışlarınıza etkisi
- Konu hakkındaki tutumunuza etkisi
- Farkındalığınıza etkisi
- **To what extent do you have the idea that the use of [brand name] has changed your view on food waste?**
 - **If the participant is now wasting less food,**
 - How?
 - What caused that?
 - Be specific: what, how, why, when, how often?
- [marka adı] kullanımı, yiyecekleri israf etmek konusuna bakış açınızı ne ölçüde değiştirdi?
 - Katılımcı artık daha az gıda israf ediyorsa,
 - Nasıl?
 - Buna ne sebep oldu?
 - Spesifik olarak: ne, nasıl, neden, ne zaman, ne sıklıkla?
 - **If the participant is now wasting same amount / more food,**
 - Why not?

- **What else would it take to help you throw away less?**
 - Katılımcı artık daha fazla / aynı miktarda gıda israf ediyorsa,
 - Neden?
 - Daha az israf olmasına adına sizin için başka ne gerekir?
 - **Would it be a good idea at all that [brand name] would help you with that or not?**
 - **Why/why not?**
 - **How do you improve that?**
 - [marka adı]'nın bu konuda size yardımcı olması iyi bir fikir olur mu, olmaz mı?
 - Neden olsun/neden olmasın?
 - Bunu nasıl geliştirirsiniz?
- **To what extent have you discussed [brand name] app or service with others?**
 - **Who? How many people?**
 - **How often?**
 - **What do you say?**
 - **How do they react, and what do you think about that?**
 - **What issues push you to advise the brand others?**
- [marka adı]'ı başkalarıyla ne ölçüde konuştunuz / bahsettiniz?
 - Kim? Kaç insan?
 - Ne sıklıkla?
 - Ne diyorsunuz?
 - Nasıl tepki veriyorlar ve bu konuda ne düşünüyorsunuz?
 - Ne olursa bu markayı başkalarına daha fazla tavsiye edersiniz?
- **To what extent do you feel that by using the [brand name] app or service you are now part of a 'community'?**
 - **Why/why not?**
 - **Would that be something [brand name] can do more to create a community feeling**
 - **Relevant to you personally? Why/why not?**
 - **So what do people in this community have in common?**
 - **How could they do that so that it appeals to you?**
- [marka adı]'ı kullanarak artık bir 'topluluğun' parçası olduğunuzu ne ölçüde hissediyorsunuz?
 - Neden hissediyorsunuz/neden hissetmiyorsunuz?
 - [marka adı]'nın bu hissi daha fazla yaratabilmek için yapabileceği bir şey olabilir mi (oluşturulacak bir topluluk duygusu)?

- Sizce bahsettiğiniz konu kişisel olarak sizinle alakalı mı? Yoksa kullanıcıların geneline hitap edebilir mi? Neden alakalı/neden alakasız?
- Bu topluluktaki insanların ortak noktası ne?
 - Bunu size hitap edecek şekilde nasıl yapabilirler?
- **Do you follow the [brand name] Instagram account?**
 - **If yes, Do you remember the most attractive content for you? What do you remember?**
- [marka adı]'nın Instagram hesabını takip ediyor musunuz?
 - En çok dikkatinizi çeken içerik nasıldı? Hatırlıyor musunuz, ne hatırlıyorsunuz?

6. Suggestions for improvement / İyileştirme önerileri

- **What are the pluses and minuses of the app?** / [marka adı] uygulamasının artıları ve eksileri nelerdir?
- **To what extent could/should the app be improved? What do you see as points for improvement of the app?**
 - **necessary things? Need to have**
 - **extra things? Nice to have**
- Uygulama/hizmet ne ölçüde geliştirilebilir/geliştirilmelidir? Uygulamanın iyileştirilmesi için puan olarak ne görüyorsunuz?
 - gerekli şeyler? İhtiyaç var
 - ekstra şeyler? Olursa güzel olur
- **What do you think of the following ideas? (Per idea: appealing?, relevant?, effect (on you)?)**
 - **You can specify more specific choices for the type of box, for example lunch box, dessert box, snack box, evening meal box.**
 - **The times to pick up the box will be extended or you can choose from a number of times or...**
 - **You can choose a surprise box that is completely tailored to your own preferences (e.g. no meat with vegetarian, gluten free)**
 - **Home delivery option included**
 - **The application includes not only food but also other product categories (e.g. cosmetics etc.)**
- Söyleyeceğimiz fikirler hakkında ne düşünüyorsunuz? (çekici mi? Alakalı mı? Sizin üzerinde etkisi nedir?)
 - Yemek kutusu, tatlı kutusu, atıştırmalık kutusu, akşam yemeği kutusu gibi kutu tipi için daha spesifik seçenekler belirlenmesi
 - Kutuyu alma sürelerinin uzatılması veya birkaç teslim alma aralığı arasından seçim yapılabilmesi
 - Tamamen kendi tercihlerinize göre hazırlanmış sürpriz bir kutu seçebilmesi (örneğin etsiz vejetaryen, glütensiz)

- Teslimatın git-al şeklinde değil de kapıya teslim şeklinde yapılması
- Uygulamanın içerisinde sadece gıda değil başka ürün kategorilerinin de (örneğin kozmetik ürünler vs) bulunması
- **To what extent are there still points for improvement in the surprise boxes themselves (content)?**
 - **If food is thrown away: How can the surprise boxes be adjusted so that less food is thrown away from the box?**
 - **Are there any other ways in which the surprise boxes contribute even more to reducing food waste?**

Such as: (Per item: relevant/desirable?, Are you going to do it and keep doing it? Does it help against wastage?)

- **In the box there are tips and tricks to waste less food at home?**
- **There are (new/surprising) recipes in everything from the box use?**
- **You are stimulated/challenged to taste products on the best before date or to be used after the best before date?**
- **You as a user are motivated/inspired by the surprise box to share with family and friends.**
- **Sürpriz kutuların kendisinde (içerik) hala ne ölçüde iyileştirme noktaları yapılabilir? Örneğin...**
 - Sürpriz kutuların gıda israfını azaltmaya daha fazla katkıda bulunmasının başka yolları var mı? (Eğer Sürpriz Kutudaki yiyecekler atılıyorsa: Sürpriz kutular, kutudan daha az yiyecek atılacak şekilde nasıl ayarlanabilir?)

Örneğin; (Cevaplarınızı üç açıdan düşünebilirsiniz: 1. Alakalı/arzu edilen? 2.Yapar mısınız / yapmaya devam eder misiniz? 3. İsrafa karşı yardımcı olur mu?)

- Evde daha az yemek israf etmek için kutu içerisinde ipuçları ve püf noktaları olması
- Kutu içerisindeki tüm ürünlerin kullanıldığı yeni/farklı tarifler olması
- Ürünleri son kullanma tarihinde tatmaya veya tavsiye edilen son kullanma tarihinden sonra kullanmaya teşvik eden uyarılar
- Sürpriz kutuyu aileniz ve arkadaşlarınızla paylaşmak için motive edici / ilham verici uyarılar

5. Wrap Up / Toparlama

- **What is your overall impression of this discussion? / Bu tartışma hakkındaki genel izleniminiz nedir?**

APPENDIX C: SCALES OF THE MEASUREMENT

References of the Adopted Scale	Original References of the Adopted Scale	Variables	Items	
Kang and Sung 2022	Zhou et al., 2010	Brand Familiarity (BF_1)	(Brand name) is ..	very unfamiliar (1) - very familiar (5)
		Brand Familiarity (BF_2)	I have seen advertisement of (brand name)	never (1) - many (5)
Kapoor et al., 2020	Kapoor et al., 2020	Message Appeal (sensual messages)	The Instagram post intends to make people pleasant.	strongly disagree (1) - strongly agree (5)
		Message Appeal (guilty messages)	The Instagram post intends to make people feel accountable.	strongly disagree (1) - strongly agree (5)
		Message Appeal (informational messages)	The Instagram post is informative.	strongly disagree (1) - strongly agree (5)
Kang and Sung 2022	MacInnis and Park, 1991	Content Attitude (CA_1)	Instagram post is ..	very bad (1) - very good (5)
		Content Attitude (CA_2)	Instagram post is ..	unlikeable (1) - likeable (5)
		Content Attitude (CA_3)	Instagram post is ..	unfavorable (1) - favorable (5)
		Content Attitude (CA_4)	Instagram post is ..	unappealing (1) - appealing (5)
Kang and Sung 2022	MacInnis and Park, 1991	Brand Attitude (BA_1)	Attitude toward (brand name) ...	very bad (1) - very good (5)
		Brand Attitude (BA_2)	Attitude toward (brand name) ...	unlikeable (1) - likeable (5)
		Brand Attitude (BA_3)	Attitude toward (brand name) ...	unfavorable (1) - favorable (5)
		Brand Attitude (BA_4)	Attitude toward (brand name) ...	unappealing (1) - appealing (5)
Kapoor et al., 2021	Park et al., 2007	Intention (INT_1)	If the market/restaurant where I want to buy the food product is available in the application of (brand name), I have a very high probability of using the application of (brand name).	strongly disagree (1) - strongly agree (5)
		Intention (INT_2)	I prefer to use the application of (brand name) for my grocery/restaurant shopping.	strongly disagree (1) - strongly agree (5)
		Intention (INT_3)	I try to use the application of (brand name) in my grocery/restaurant shopping.	strongly disagree (1) - strongly agree (5)
Maxham and Netemeyer, 2003	Cronin and Taylor, 1994; Goodwin and Ross, 1992	Word of Mouth (WOM_1)	How likely are you to spread positive word-of-mouth about (brand name)?	not likely (1) - high probability (5)
		Word of Mouth (WOM_2)	I would recommend (brand name) to my friends/relatives.	not likely (1) - high probability (5)
		Word of Mouth (WOM_3)	If my friends/relatives wanted to reduce food waste by purchasing discounted food products, I would tell them to try the app of (brand name).	not likely (1) - high probability (5)
Jang and Lee, 2022	Cho et al., 2020	Motivation (FWA_1)	I am aware that the food waste problem is serious, directly connected to our daily lives	strongly disagree (1) - strongly agree (5)
		Motivation (FWA_2)	I am well aware of the food waste problem these days	strongly disagree (1) - strongly agree (5)
		Motivation (FWA_3)	I am usually interested in the food waste issue	strongly disagree (1) - strongly agree (5)
		Motivation (FWA_4)	I am aware that the food waste disposal issue is crucial	strongly disagree (1) - strongly agree (5)
Aschemann-Witzel et al., 2017	Aschemann-Witzel et al., 2016	Motivation (ES_1)	I compare prices between product variants in order to get the best value for money	strongly disagree (1) - strongly agree (5)
		Motivation (ES_2)	I always try to get the best quality for the best price	strongly disagree (1) - strongly agree (5)
		Motivation (ES_3)	I frequently buy food close to the best-before date, if it is offered at a lower price	strongly disagree (1) - strongly agree (5)
		Motivation (ES_4)	I look for ads in the newspaper for store specials or purchase food that is on discount	strongly disagree (1) - strongly agree (5)

APPENDIX D: QUANTITATIVE QUESTIONS (EXPERIMENT I)

EN / TR

Introduction / Giriş

Brief information about the survey: This questionnaire has been prepared within the scope of Yeditepe University, Department of Business Administration, in order to understand sustainable food consumption and sustainability communication. Participation in the study is on a voluntary basis. The data will be evaluated for scientific purposes and ethical rules will be respected. The survey takes an average of 10-15 minutes. We kindly request you to answer the questions in this research completely and devotedly, and thank you for your contribution. / Bu anket Yeditepe Üniversitesi, İşletme Anabilim Dalı doktora programı dahilinde, sürdürülebilir gıda tüketimini ve sürdürülebilirlik iletişimi anlamaya yönelik hazırlanmıştır. Çalışmaya katılım gönüllülük esasına dayanmaktadır. Veriler bilimsel amaçlı değerlendirilecek ve etik kurallara özen gösterilecektir. Anket ortalama 10 - 15 dakika sürmektedir. Bu araştırmada yer alan soruları eksiksiz ve özveriyle cevaplamanızı rica eder, katkınızdan dolayı teşekkür ederiz.

Assoc. Dr. Aslı Tolunay & PhD Student Yudum Tuğçe Erkli / Doç. Dr. Aslı Tolunay & Doktora Öğrencisi Yudum Tuğçe Erkli

Filter Questions / Eleme soruları:

- **Do you live in Istanbul?** / İstanbul'da mı yaşıyorsunuz?
- **Your age?** / Yaşınız?

Internet/Social Media usage / İnternet ve sosyal media kullanımı

- **Do you use the Internet?** / İnternet kullanıyor musunuz?
- **Do you use social media?** / Sosyal medya kullanıyor musunuz?
- **Which social media platform(s) below do you use?** / Aşağıdaki hangi sosyal medya platformunu/platformlarını kullanıyorsunuz?

Instagram	
Facebook	
Twitter	
TikTok	
LinkedIn	
Other / Diğer	

Top of mind / Akılda kalanlar

- **Do you know the organizations that aim to deliver certain food products to the customers with the aim of preventing food waste in Turkey? If you know what are their names?** / Türkiye'de gıda israfını önlemeyi amaç edinerek belli gıda

ürünlerini müşteriye ulaştırmayı hedefleyen kuruluşları biliyor musunuz?
Biliyorsanız isimleri nelerdir?

Yes I know, Name(s) / Evet Biliyorum İsmi/İsimleri:	
No I don't know / Hayır Bilmiyorum	

- Which of the following(s) do you know as an organization that aims to prevent food waste? / Aşağıdakilerden hangisini/hangilerini gıda israfını önlemeyi amaç edinmiş bir kuruluş olarak biliyorsunuz?

Gıda Kurtarma Derneği	
Fazla Uygulaması	
Yenir	

Brand familiarity / Marka farkındalığı

- [brand name] app is ... to me / [marka adı] uygulaması bana...

Very Unfamiliar / Çok Yabancı	1	2	3	4	5	Very Familiar / Çok Tanıdık
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- Regarding the application of [brand name] in the media and/or social media ... / Medyada ve/veya sosyal medyada [marka adı] uygulaması ile ilgili ...

I have never seen advertisements / Reklamları Hiç Görmedim	1	2	3	4	5	I have seen many advertisements / Birçok Reklam Gördüm
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Message appeal and content attitude / mesaj içeriği ve içeriğe karşı tutum

One of the six following final images prepared for each respondent is randomly shown/ Hazırlanan altı görselden biri cevaplayıcıya rastgele gösterilir.

- What do you think this Instagram post tells? Please describe what the content is about in your opinion in 1-2 sentences. / Bu Instagram gönderisi sizce ne anlatıyor? Lütfen size göre içeriğin neyle ilgili olduğunu 1-2 cümle ile aktarınız.
- This Instagram post intends to make people pleasant. / Bu Instagram gönderisi duygularıma hitap ediyor.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- This Instagram post intends to make people feel accountable. / Bu Instagram gönderisi bana suçluluk duygusu (sorumluluk alma duygusu) hissettiriyor.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **This Instagram post is informative. / Bu Instagram gönderisi beni bilgilendirmektedir.**

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **Please consider the Instagram content you have seen and evaluate it! Do you think this Instagram content... / Lütfen görmüş olduğunuz Instagram içeriğini düşünerek değerlendiriniz! Sizce bu Instagram içeriği...**

Very Bad / Çok kötü	1	2	3	4	5	Very Good / Çok İyi
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Unlikeable / Sevimsiz	1	2	3	4	5	Likeable / Sevimli
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Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
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Unappealing / Çekici Değil	1	2	3	4	5	Appealing / Çekici
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Post attitude toward the brand, application usage intention and WOM / Markaya karşı son tutum, uygulama kullanım niyeti ve ağızdan ağıza iletişim



Information about [brand name] Application: [brand name] application is a technology initiative that prevents food waste and aims to effectively manage surplus products of hotels/restaurants/canteens/market chains/food manufacturers and distributors and to deliver these products to consumers. Businesses aim to deliver the food products with certain criteria to the consumer at an affordable price than the normal sales price, through the [brand name] application.

[marka adı] Uygulaması Hakkında Bilgi: [marka adı] uygulaması, gıda israfını önleyen ve oteller/restoranlar/yemekhaneler/market zincirleri/gıda üreticileri ve dağıtıcılarının ihtiyaç fazlası ürünlerini etkin yönetmeye ve bu ürünleri tüketiciye ulaştırmayı hedefleyen bir teknoloji girişimidir. İşletmeler, ellerindeki belirli kriterlerdeki gıda ürünlerini [marka adı] uygulaması üzerinden tüketiciye normal satış fiyatından daha uygun bir fiyata ulaştırmayı hedeflemektedir.

*The randomly shown image is shown again to the respondent./ Rastgele gösterilen görsel, cevaplayıcıya tekrar gösterilir.

- **Please consider the Instagram content you have seen and evaluate it! [brand name] app in your opinion... / Lütfen görmüş olduğunuz Instagram içeriğini düşünerek değerlendiriniz! Sizce [marka adı] uygulaması ...**

Very Bad / Çok kötü	1	2	3	4	5	Very Good / Çok İyi
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Unlikeable / Sevimsiz	1	2	3	4	5	Likeable / Sevimli
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Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
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Unappealing / Çekici Değil	1	2	3	4	5	Appealing / Çekici
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- **If the market/restaurant where I want to buy the food product is available in the [brand name] application, I have a very high probability of using the [brand name] application. / Eğer gıda ürününü satın almak istediğim market/restoran [marka adı] uygulamasında mevcutsa, [marka adı] uygulamasını kullanma ihtimalim çok yüksektir.**

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I prefer to use the [brand name] app for my grocery/restaurant shopping. / Market/restoran alışverişlerimde, [marka adı] uygulamasını kullanmayı tercih ederim.**

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I try to use the [brand name] application in my grocery/restaurant shopping. / Market/restoran alışverişlerimde, [marka adı] uygulamasını kullanmaya çaba gösteririm.**

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **How likely are you to spread positive word-of-mouth about (firm)? / Marka uygulaması hakkında başkalarına olumlu şeyler söyleme olasılığınız nedir?**

Not likely / Pek olası değil	1	2	3	4	5	High probability / Olasılığı yüksek
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- **I would recommend (firm) to my friends. / Arkadaşlarıma/yakınlarıma marka uygulamasını tavsiye ederim.**

Not likely / Pek olası değil	1	2	3	4	5	High probability / Olasılığı yüksek
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- **If my friends/relatives wanted to reduce food waste by purchasing discounted food products, I would tell them to try the app of [brand name]. / Arkadaşlarım/yakınlarım indirimli gıda ürünü satın alarak gıda israfını azaltmak isteselerdi, onlara [marka adı] uygulamasını denemelerini söyledim.**

Not likely / Pek olası değil	1	2	3	4	5	High probability / Olasılığı yüksek
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Motivation (food waste avoidance and economic saving) / Motivasyon (gıda israfından kaçınma ve ekonomik tasarruf)

- **I am aware that the food waste problem is serious, directly connected to our daily lives. / Gıda israfı sorununun ciddi ve günlük yaşantımızla doğrudan bağlantılı olduğunun farkındayım.**

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I am well aware of the food waste problem these days. /** Bugünlerde gıda israfı sorununun gayet iyi farkındayım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I am usually interested in the food waste issue. /** Genellikle gıda israfı konusuyla ilgilenirim.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I am aware that the food waste disposal issue is crucial. /** Gıda atıklarının elden çıkarma konusunun çok önemli olduğunu farkındayım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I compare prices between product variants in order to get the best value for money. /** Paramın karşılığını en iyi şekilde alabilmek için ürün çeşitleri arasında fiyatları karşılaştırırım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I always try to get the best quality for the best price. /** Her zaman en iyi kaliteyi en iyi fiyata almaya çalışırım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I frequently buy food close to the best-before date, if it is offered at a lower price. /** Daha düşük bir fiyata sunuluyorsa, sık sık son kullanma tarihine yakın yiyecekler satın alırım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I look for ads in the newspaper for store specials or purchase food that is on discount. / Satın almayı düşündüğüm mağazaya (market/restoran vb.) özel ürünlerle ilgili haberlere/ilanlara bakarım ve indirimli yiyecekler satın alırım.**

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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Demographic of the respondents / Cevaplayıcıların demografik özellikleri

- **Your gender? / Cinsiyetiniz?**

Female / Kadın	
Male / Erkek	
I don't want to specify / Belirtmek istemiyorum	

- **Your most recent graduation? / En son mezuniyetiniz?**

Primary school / İlkokul	
Secondary/High school / Ortaöğretim /Lise	
Associate Degree / Ön Lisans	
Bachleor Degree / Lisans	
Masters Degree / Yüksek Lisans	
Doctorate / Doktora	

- **Your working status? / Çalışıyor musunuz?**

I am working / Çalışıyorum	
I am a student / Öğrenciyim	
I am not working / Çalışmıyorum	

- **Number of households? / Hane halkı sayısı?**
- **Your household monthly income? / Hane halkı aylık geliriniz?**

0 - 5.000 TL	
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5.001 - 7.500 TL	
7.501 - 10.000 TL	
10.001 TL - 12.500 TL	
12.501 TL - 15.000 TL	
15.001 TL - 20.000 TL	
20.001 TL - 25.000 TL	
25.001 TL - 30.000 TL	
30.001 TL - 40.000 TL	
40.001 TL - 50.000 TL	
50.001 TL and more / ve üzeri	
not specified / belirtilmedi	

- **The district you live in Istanbul? / İstanbul’da oturduğunuz semt?**

***The awareness of SMI / Influencer’a karşı farkındalık**

Which of the following Instagram influencers do you know? / Aşağıdaki Instagram influencer’lardan hangisini/hangilerini tanıyorsunuz?

***Images shown with SMI profile photos / Görseller Influencer profil fotoğraflarıyla gösterilmiştir.**

happyfoodss / Fulya Çelik	Ekolojik Yolum/ Gözde Özbey	
nilkiyisi	Türk İşi Minimalizm/ Hale Acun Aydın	
Fit Gusto/ Hüseyin Şirin	Zeze Cooks	
cerennzi / Ceren Morova	Beril Oymak	
Sürdürülebilir Yaşam/ Begüm Yağcı	Berraque / Berrak	

APPENDIX E: QUANTITATIVE QUESTIONS (EXPERIMENT II)

EN / TR

Introduction / Giriş

Brief information about the survey: This questionnaire has been prepared within the scope of Yeditepe University, Department of Business Administration, in order to understand sustainable food consumption and sustainability communication. Participation in the study is on a voluntary basis. The data will be evaluated for scientific purposes and ethical rules will be respected. The survey takes an average of 10-15 minutes. We kindly request you to answer the questions in this research completely and devotedly, and thank you for your contribution. / Bu anket Yeditepe Üniversitesi, İşletme Anabilim Dalı doktora programı dahilinde, sürdürülebilir gıda tüketimini ve sürdürülebilirlik iletişimi anlamaya yönelik hazırlanmıştır. Çalışmaya katılım gönüllülük esasına dayanmaktadır. Veriler bilimsel amaçlı değerlendirilecek ve etik kurallara özen gösterilecektir. Anket ortalama 10 - 15 dakika sürmektedir. Bu araştırmada yer alan soruları eksiksiz ve özveriyle cevaplamanızı rica eder, katkınızdan dolayı teşekkür ederiz.

Assoc. Dr. Aslı Tolunay & PhD Student Yudum Tuğçe Erkli / Doç. Dr. Aslı Tolunay & Doktora Öğrencisi Yudum Tuğçe Erkli

Filter Questions / Eleme soruları:

- **Do you live in Istanbul?** / İstanbul'da mı yaşıyorsunuz?
- **Your age?** / Yaşınız?

Internet/Social Media usage / Internet ve sosyal media kullanımı

- **Do you use the Internet?** / Internet kullanıyor musunuz?
- **Do you use social media?** / Sosyal medya kullanıyor musunuz?
- **Which social media platform(s) below do you use?** / Aşağıdaki hangi sosyal medya platformunu/platformlarını kullanıyorsunuz?

Instagram	
Facebook	
Twitter	
TikTok	
LinkedIn	
Other / Diğer	

Top of mind / Akılda kalanlar

- **Do you know the organizations that aim to deliver certain food products to the customers with the aim of preventing food waste in Turkey? If you know what**

are their names? / Türkiye'de gıda israfını önlemeyi amaç edinerek belli gıda ürünlerini müşteriye ulaştırmayı hedefleyen kuruluşları biliyor musunuz? Biliyorsanız isimleri nelerdir?

Yes I know, Name(s) / Evet Biliyorum İsmi/İsimleri:	
No I don't know / Hayır Bilmiyorum	

- **Which of the following(s) do you know as an organization that aims to prevent food waste?** / Aşağıdakilerden hangisini/hangilerini gıda israfını önlemeyi amaç edinmiş bir kuruluş olarak biliyorsunuz?

Gıda Kurtarma Derneği	
Fazla Uygulaması	
Yenir	

***The following sections contain different questions in each alternative /** (Aşağıdaki Bölümler her alternatifte farklı sorular içerir)

Alternative 1: Cerennzi

Please carefully review the profile of the Instagram influencer! / Lütfen Instagram fenomeninin (Influencer'ının) profilini dikkatlice inceleyiniz!

SMI familiarity and pre-attitude toward the SMI / Sosyal medya Influencer (SMI)'inin tanınırlılığı ve SMI'ye karşı ön tutum

- **The Instagram Influencer in the content ... to me. /** İçerikteki Instagram fenomeni (Influencer'ı) bana...

Very unfamiliar / Çok Yabancı	1	2	3	4	5	Very Familiar / Çok Tanıdık
---	----------	----------	----------	----------	----------	---------------------------------------

- **Please rate the social media influencer whose profile you have seen! What is your attitude towards this Instagram influencer?** / Lütfen profilini görmüş olduğunuz sosyal medya fenomenini (Influencer'ını) değerlendiriniz! Bu Instagram fenomenine (Influencer'ına) karşı tutumunuz nasıldır?

Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
---------------------------------	----------	----------	----------	----------	----------	------------------------------

- **Please rate the social media influencer whose profile you have seen! What is your attitude towards this Instagram influencer?** / Lütfen profilini görmüş olduğunuz Instagram fenomenini (Influencer'ını) değerlendiriniz!

- **The Instagram content of the social media Influencer is beautiful.** / Sosyal medya fenomeninin (Influencer'ının) Instagram içerikleri güzeldir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	----------	----------	----------	----------	----------	--

- **When I look at the social media Influencer's Instagram account, I see that she is experienced.** / Sosyal medya fenomeninin (Influencer'ının) Instagram hesabına baktığımda, onun deneyimli olduğunu görüyorum.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **Social media Influencer gives honest reviews about brands.** / Sosyal medya fenomenini (Influencer'ı), markalar hakkında dürüst yorumlar vermektedir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	----------	----------	----------	----------	----------	--

Message appeals of the message source and content attitude / Mesaj içerikleri ve içeriğe karşı tutum

1. **What do you think this Instagram post tells? Please describe what the content is about in your opinion in 1-2 sentences.** / Bu Instagram gönderisi sizce ne anlatıyor? Lütfen size göre içeriğin neyle ilgili olduğunu 1-2 cümle ile aktarınız.

- **This Instagram post is informative** / Bu Instagram gönderisi beni bilgilendirmektir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	----------	----------	----------	----------	----------	--

2. **The social media phenomenon (Influencer) in the Instagram post and the brand mentioned in the post are compatible.** / Instagram gönderisindeki sosyal medya fenomeni (Influencer'ı) ile gönderide adı geçen marka uyumludur.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	----------	----------	----------	----------	----------	--

3. Please consider the Instagram content you have seen and evaluate it! Do you think this Instagram content... / Lütfen görmüş olduğunuz Instagram içeriğini düşünerek değerlendiriniz! Sizce bu Instagram içeriği...

Very Bad / Çok kötü	1	2	3	4	5	Very Good / Çok İyi
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Unlikeable / Sevimsiz	1	2	3	4	5	Likeable / Sevimli
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Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
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Unappealing / Çekici Değil	1	2	3	4	5	Appealing / Çekici
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Alternative 2: Beril Oymak

SMI familiarity and pre-attitude toward the SMI / Sosyal medya Influencer (SMI)'inin tanınırlılığı ve SMI'ye karşı ön tutum

- The Instagram Infleuncer in the content ... to me. / İçerikteki Instagram fenomeni (Infleuncer'ı) bana...

Very unfamiliar / Çok Yabancı	1	2	3	4	5	Very Familiar / Çok Tanıdık
----------------------------------	---	---	---	---	---	--------------------------------

- Please rate the social media influencer whose profile you have seen! What is your attitude towards this Instagram influencer? / Lütfen profilini görmüş olduğunuz sosyal medya fenomenini (Influencer'ını) değerlendiriniz! Bu Instagram fenomenine (Influencer'ına) karşı tutumunuz nasıldır?

Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
--------------------------	---	---	---	---	---	-----------------------

- Please rate the social media influencer whose profile you have seen! What is your attitude towards this Instagram influencer? / Lütfen profilini görmüş olduğunuz Instagram fenomenini (Influencer'ını) değerlendiriniz!
 - The Instagram content of the social media Influencer is beautiful. / Sosyal medya fenomeninin (Influencer'ının) Instagram içerikleri güzeldir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	---	---	---	---	---	--

- **When I look at the social media Influencer's Instagram account, I see that she is experienced.** / Sosyal medya fenomeninin (Influencer'ının) Instagram hesabına baktığımda, onun deneyimli olduğunu görüyorum.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **Social media Influencer gives honest reviews about brands.** / Sosyal medya fenomenini (Influencer'ı), markalar hakkında dürüst yorumlar vermektedir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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Message appeals of the message source and content attitude / Mesaj içerikleri ve içeriğe karşı tutum

- 1. What do you think this Instagram post tells? Please describe what the content is about in your opinion in 1-2 sentences.** / Bu Instagram gönderisi sizce ne anlatıyor? Lütfen size göre içeriğin neyle ilgili olduğunu 1-2 cümle ile aktarınız.
- This Instagram post is informative** / Bu Instagram gönderisi beni bilgilendirmektedir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- 2. The social media phenomenon (Influencer) in the Instagram post and the brand mentioned in the post are compatible.** / Instagram gönderisindeki sosyal medya fenomeni (Influencer'ı) ile gönderide adı geçen marka uyumludur.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	----------	----------	----------	----------	----------	--

- 3. Please consider the Instagram content you have seen and evaluate it! Do you think this Instagram content...** / Lütfen görmüş olduğunuz Instagram içeriğini düşünerek değerlendiriniz! Sizce bu Instagram içeriği...

Very Bad / Çok kötü	1	2	3	4	5	Very Good / Çok İyi
----------------------------	----------	----------	----------	----------	----------	----------------------------

Unlikeable / Sevimsiz	1	2	3	4	5	Likeable / Sevimli
------------------------------	----------	----------	----------	----------	----------	---------------------------

Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
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Unappealing / Çekici Değil	1	2	3	4	5	Appealing / Çekici
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Alternative 3: the Brand

Brand familiarity / Marka tanınırlılığı ve markaya karşı ön tutum

- **[brand name] app is ... to me** / [marka adı] uygulaması bana...

Very Unfamiliar / Çok Yabancı	1	2	3	4	5	Very Familiar / Çok Tanıdık
-------------------------------------	---	---	---	---	---	-----------------------------------

- **Regarding the application of [brand name] in the media and/or social media ...**
/ Medyada ve/veya sosyal medyada [marka adı] uygulaması ile ilgili ...

I have never seen advertisements / Reklamları Hiç Görmedim	1	2	3	4	5	I have seen many advertisements / Birçok Reklam Gördüm
--	---	---	---	---	---	--

Message appeals of the message source and content attitude / Mesaj içerikleri ve içeriğe karşı tutum

1. **What do you think this Instagram post tells? Please describe what the content is about in your opinion in 1-2 sentences.** / Bu Instagram gönderisi sizce ne anlatıyor? Lütfen size göre içeriğin neyle ilgili olduğunu 1-2 cümle ile aktarınız.
- **This Instagram post is informative.** / Bu Instagram gönderisi beni bilgilendirmektir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	---	---	---	---	---	---

- **Please consider the Instagram content you have seen and evaluate it! Do you think this Instagram content...** / Lütfen görmüş olduğunuz Instagram içeriğini düşünerek değerlendiriniz! Sizce bu Instagram içeriği...

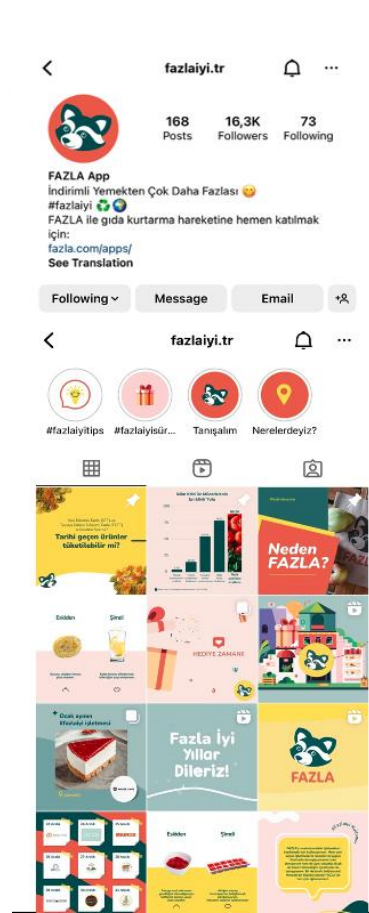
Very Bad / Çok kötü	1	2	3	4	5	Very Good / Çok İyi
------------------------	---	---	---	---	---	------------------------

Unlikeable / Sevimsiz	1	2	3	4	5	Likeable / Sevimli
-----------------------	---	---	---	---	---	--------------------

Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
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Unappealing / Çekici Değil	1	2	3	4	5	Appealing / Çekici
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***For each alternative, following questions are shown/her alternatif için aşağıdaki sorular sorulur**



Post attitude toward the brand, application usage intention and WOM / Markaya karşı son tutum, uygulama kullanım niyeti ve ağızdan ağıza iletişim

Information about [brand name] Application: [brand name] application is a technology initiative that prevents food waste and aims to effectively manage surplus products of hotels/restaurants/canteens/market chains/food manufacturers and distributors and to deliver these products to consumers. Businesses aim to deliver the food products with certain criteria to the consumer at an affordable price than the normal sales price, through the [brand name] application.

[marka adı] Uygulaması Hakkında Bilgi: [marka adı] uygulaması, gıda israfını önleyen ve oteller/restoranlar/yemekhaneler/market zincirleri/gıda üreticileri ve dağıtıcılarının ihtiyaç fazlası ürünlerini etkin yönetmeye ve bu ürünleri tüketiciye ulaştırmayı hedefleyen bir teknoloji girişimidir. İşletmeler, ellerindeki belirli kriterlerdeki gıda ürünlerini [marka adı] uygulaması üzerinden tüketiciye normal satış fiyatından daha uygun bir fiyata ulaştırmayı hedeflemektedir.

***The randomly shown image is shown again to the respondent. / Rastgele gösterilen görsel cevaplayıcıya tekrar**

gösterilir.

- Please consider the Instagram content you have seen and evaluate it! [brand name] app in your opinion... / Lütfen görmüş olduğunuz Instagram içeriğini düşünerek değerlendiriniz! Sizce [marka adı] uygulaması ...**

Very Bad / Çok kötü	1	2	3	4	5	Very Good / Çok İyi
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Unlikeable / Sevimsiz	1	2	3	4	5	Likeable / Sevimli
-----------------------	---	---	---	---	---	--------------------

Unfavorable / Olumsuz	1	2	3	4	5	Favorable / Olumlu
--------------------------	---	---	---	---	---	-----------------------

Unappealing / Çekici Değil	1	2	3	4	5	Appealing / Çekici
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- **If the market/restaurant where I want to buy the food product is available in the [brand name] application, I have a very high probability of using the [brand name] application.** / Eğer gıda ürününü satın almak istediğim market/restoran uygulamasında [marka adı] mevcutsa, [marka adı] uygulamasını kullanma ihtimalim çok yüksektir.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I prefer to use the [brand name] app for my grocery/restaurant shopping.** / Market/restoran alışverişlerimde, [marka adı] uygulamasını kullanmayı tercih ederim.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I try to use the [brand name] application in my grocery/restaurant shopping.** / Market/restoran alışverişlerimde, [marka adı] uygulamasını kullanmaya çaba gösteririm.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **How likely are you to spread positive word-of-mouth about (firm)?** / Markanın uygulaması hakkında başkalarına olumlu şeyler söyleme olasılığınız nedir?

Not likely / Pek olası değil	1	2	3	4	5	High probability / Olasılığı yüksek
---------------------------------	---	---	---	---	---	---

- **I would recommend (firm) for electronics to my friends.** / Arkadaşlarıma/yakınlarıma markanın uygulamasını tavsiye ederim.

Not likely / Pek olası değil	1	2	3	4	5	High probability / Olasılığı yüksek
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- **If my friends were looking to purchase electronics, I would tell them to try (firm).** / Arkadaşlarım/yakınlarım indirimli gıda ürünü satın alarak gıda israfını azaltmak isteselerdi, onlara markanın uygulamasını denemelerini söyledim.

Not likely / Pek olası değil	1	2	3	4	5	High probability / Olasılığı yüksek
---------------------------------	---	---	---	---	---	---

Motivation (food waste avoidance) / Motivasyon (gıda israfından kaçınma)

- **I am aware that the food waste problem is serious, directly connected to our daily lives.** / Gıda israfı sorununun ciddi ve günlük yaşantımızla doğrudan bağlantılı olduğunun farkındayım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I am well aware of the food waste problem these days.** / Bugünlerde gıda israfı sorununun gayet iyi farkındayım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
--	---	---	---	---	---	---

- **I am usually interested in the food waste issue.** / Genellikle gıda israfı konusuyla ilgilenirim.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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- **I am aware that the food waste disposal issue is crucial.** / Gıda atıklarının elden çıkarma konusunun çok önemli olduğunun farkındayım.

Strongly Disagree / Kesinlikle Katılmıyorum	1	2	3	4	5	Strongly Agree / Kesinlikle Katılıyorum
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Demographic of the respondents / Cevaplayıcıların demografik özellikleri

- **Your gender? / Cinsiyetiniz?**

Female / Kadın	
Male / Erkek	

I don't want to specify / Belirtmek İstemiyorum	
--	--

- **Your most recent graduation?** / En son mezuniyetiniz?

Primary school / İlkokul	
Secondary/High school / Ortaöğretim /Lise	
Associate Degree / Ön Lisans	
Bachleor Degree / Lisans	
Masters Degree / Yüksek Lisans	
Doctorate / Doktora	

- **Your working status?** / Çalışıyor musunuz?

I am working / Çalışıyorum	
I am a student / Öğrenciyim	
I am not working / Çalışmıyorum	

- **Number of households?** / Hane halkı sayısı?

- **Your household montly income?** / Hane halkı aylık geliriniz?

0 - 5.000 TL	
5.001 - 7.500 TL	
7.501 - 10.000 TL	
10.001 TL - 12.500 TL	
12.501 TL - 15.000 TL	
15.001 TL - 20.000 TL	
20.001 TL - 25.000 TL	
25.001 TL - 30.000 TL	
30.001 TL - 40.000 TL	
40.001 TL - 50.000 TL	
50.001 TL and more / ve üzeri	
not specified / belirtilmedi	

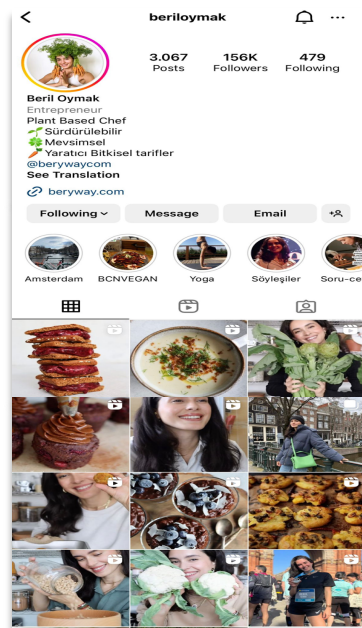
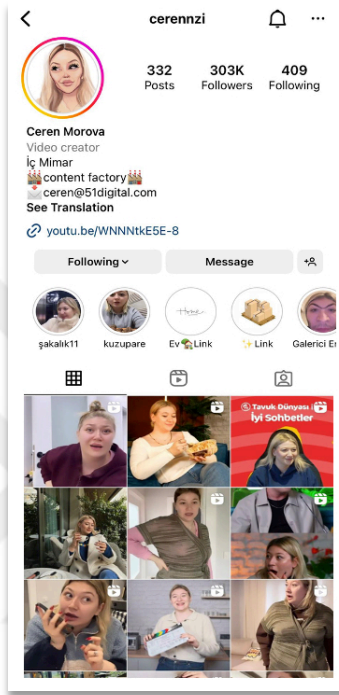
- **The district you live in Istanbul?** / İstanbul'da oturduğunuz semt?

APPENDIX F: FIRST INSTAGRAM IMAGES

SENSUAL		GUILTY	
Food waste avoidance	Economic saving	Food waste avoidance	Economic saving
 fazlaliyi.tr İsrafı önlemenin tam zamanı 09.00 21.00 Çok Lezzetli Hala çok lezzetli fazlaliyi.tr Pastacıların özenle hazırladığı cupcakeler saatler sonra da #fazlaliyi ve çok lezzetli 🍪🍰 Lezzet dolu tatlıları kurtarmak hiç bu kadar keyifli olmamıştı! Sen de Fazla İyi uygulamasına gelerek gıda israfını önle, sevdiğin için güzel bir gelecek bırak! 🌍	 fazlaliyi.tr İndirimli alışverişin tam zamanı 09.00 21.00 Çok Lezzetli Hala çok lezzetli fazlaliyi.tr Pastacıların özenle hazırladığı cupcakeler saatler sonra da #fazlaliyi ve çok lezzetli 🍪🍰 Lezzet dolu tatlıları kurtarmak hiç bu kadar keyifli olmamıştı! Sen de Fazla İyi uygulamasına gelerek gıda israfını önle, aile bütçesine katkıda bulun! 💰	 fazlaliyi.tr Ülkemizde bir yılda 26 milyon ton gıda israf oluyor. fazlaliyi.tr Ülkemizde bir yılda kişi başı 93 kilogram olmak üzere toplamda 26 milyon ton gıda israf oluyor. 🍌 Bunu değiştirmek ve israfa mücadele etmek şimdi Fazla İyi ile mümkün. Sen de aramıza katıl, israfa birlikte "Dur!" diyelim. 🙅	 fazlaliyi.tr Ülkemizde bir yılda 555 milyar TL değerinde gıda israf oluyor. fazlaliyi.tr Ülkemizde bir yılda toplamda 555 milyar TL değerinde gıda israf oluyor. 🍌 Bunu değiştirmek ve israf kaynaklı finansal kayıplarla mücadele etmek şimdi Fazla İyi ile mümkün. Sen de aramıza katıl, bu kayıplara birlikte "Dur!" diyelim. 🙅
INFORMATIONAL			
Food waste avoidance	Economic saving		
 fazlaliyi.tr NEDEN FAZLA İYİ? Gıda israfını önlemek için fazlaliyi.tr Yola çıktığımız ilk gününden beri belki de en sık duyduğumuz soru: Neden Fazla İyi? 🙅 Fazla İyi lezzetleri kurtararak, gıda israfını önlemek için! #fazlaliyi 🌍	 fazlaliyi.tr NEDEN FAZLA İYİ? %50 indirimli fiyatlarla gıdaya ulaşmak için fazlaliyi.tr Yola çıktığımız ilk gününden beri belki de en sık duyduğumuz soru: Neden Fazla İyi? 🙅 %50 indirimli fiyatlarla gıdaya ulaşabilmek için! #fazlaliyi 💰		

APPENDIX H: SMIs' PROFILES AND INSTAGRAM IMAGES

The profiles and Informational and FWA message contents for SMIs



APPENDIX I: THE APPROVALS OF ETHICS COMMITTEES



T.C.
YEDİTEPE ÜNİVERSİTESİ REKTÖRLÜĞÜ

14.12.2022

Sayı : E.50532705-302.14.01-1407
Konu : Yudum Tuğçe Erkli Kurul Onayı

İLGİLİ MAKAMA

Üniversitemiz Sosyal Bilimler Enstitüsü İşletme Doktora Öğrencisi Yudum Tuğçe Erkli'nin, Doç. Dr. Aslı Tolunay danışmanlığında gerçekleştireceği "Consumers' Motivations in Food Waste Management and Sustainable Food Consumption and the Effectiveness of Sustainability Communication in Social Media" başlıklı araştırmasının Beşeri Bilimler etik standartlarına uygunluğuna ilişkin Yeditepe Üniversitesi Beşeri ve Sosyal Araştırmalar Etik Kurulu Onayı ekte sunulmuştur.

Gerekli iznin verilmesi hususunu bilgilerinize arz ve rica ederim.

İmza
Prof. Dr. Fatma Yeşim EKİNCİ
Rektör a.
Rektör Yardımcısı

Ek: Etik Kurul Onayı.pdf

Bu belge, güvenli elektronik imza ile imzalanmıştır.

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T.C.
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18.04.2023

Sayı : E.50532705-302.14.01-1538
Konu : Yudum Tuğçe Erkli Kurul Onayı

İLGİLİ MAKAMA

Üniversitemiz Sosyal Bilimler Enstitüsü İşletme Doktora Öğrencisi Yudum Tuğçe Erkli'nin, Doç. Dr. Aslı Tolunay danışmanlığında gerçekleştireceği "Consumers' Motivations in Food Waste Management and Sustainable Food Consumption and the Effectiveness of Sustainability Communication in Social Media" başlıklı araştırmasının Beşeri Bilimler etik standartlarına uygunluğuna ilişkin Yeditepe Üniversitesi Beşeri ve Sosyal Araştırmalar Etik Kurulu Onayı ekte sunulmuştur.

Gerekli iznin verilmesi hususunu bilgilerinize arz ve rica ederim.

İmza
Prof. Dr. Fatma Yeşim EKİNCİ
Rektör a.
Rektör Yardımcısı

Ek: Etik Kurul Onayı.pdf

Bu belge, güvenli elektronik imza ile imzalanmıştır.

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APPENDIX J: AUTHORIZATION LETTER

26.10.2023

To whom it may concern,

We grant permission to the authors to utilize our project's outputs, which includes the findings of both qualitative and quantitative studies, and all visuals prepared by our company specifically for the quantitative study. This project was conducted during the 2022-2023 academic year, spanning the fall, spring, and summer semesters. The project was led by Associate Professor Aslı Tolunay and Yudum Tuğçe Erkli, a Ph.D. student at Yeditepe University.

The project was funded by Fazla Gıda A.Ş., which was awarded by an international bank for being one of the five startups selected as winners for an international challenge program.

These outputs are authorized for use exclusively by Associate Professor Aslı Tolunay and Ph.D. (c) Yudum Tuğçe Erkli in the doctoral thesis of Yudum Tuğçe Erkli and the articles related to their research.

*Koray Kocer
Fazla Marketing and New Businesses Lead*



APPENDIX K: TITLE CHANGE REQUEST

06.12.2023

Yeditepe Üniversitesi
Sosyal Bilimler Enstitüsü
İşletme Anabilim Dalı Müdürlüğü,

İşletme Anabilim Dalı, Pazarlama bölümünde tez danışmanım Doç. Dr. Aslı Tolunay ile birlikte sürdürmekte olduğum doktora programım ile ilgili 13.09.2022 tarihinde tarafınıza tez başvuru formu iletmıştim. İlgili formda yer alan tez başlığını **icerik değişmeksizin**, yeni bir başlıkla aşağıda belirttiğim gibi değiştirmek istiyorum.

13.09.2022 tarihli tez başvuru formunda ver alan tez başlığı: Consumers' Motivations in Food Waste Management and Sustainable Food Consumption and the Effectiveness of Sustainability Communication in Social Media

Yeni tez başlığı: Navigating Sustainable Consumer Behavior: A Comprehensive Study on Motivators and Message Strategies for Suboptimal Food Consumption

Konuyla ilgili gereğinin yapılması hususunda bilgilerinize arz ederim.

Saygılarımla,

Yudum Tuğçe Erkli
(Öğrenci No: 20194014003)

Tez Danışmanı Onayı:
Doç. Dr. Aslı Tolunay