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Influencing Healthy Choices in Online Food Delivery Apps:

The Impact of Nature Nudges and Dietary Guide Boosts

Safira Rivani (s3245209)

Examination Committee:

1st Supervisor: Dr. Joyce Karreman

2nd Supervisor: Dr. Mirjam Galetzka

Master Communication Science

Faculty of behavioral Management and Social Science

University of Twente

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Abstract

Background: Poor dietary choices significantly contribute to non-communicable diseases (NCDs), particularly in low-middle-income countries like Indonesia. However, the impact of Online Food Delivery (OFD) platforms on food choices remains underexplored. Natural elements have been shown to influence healthier behaviors by improving cognitive restoration, and may act as effective nudges. On the other hand, an alternative approach namely boosting aims to enhance competencies rather than leveraging cognitive deficiencies. This study investigates how nature nudges and dietary guide boosts interventions in OFD apps affect consumers' healthy food choices and the moderating role of health consciousness.

Method: This 2x2 study simulated an OFD app with 170 Indonesian participants aged 18 and above. Participants completed a shopping task, and the questionnaire. Key variables included healthy purchase intention, awareness of intervention intention, competence, perceived restorativeness, perceived knowledge, and health consciousness. Data were analyzed using two-way ANOVA, chi-square tests, Pearson correlations, and descriptive statistics in SPSS.

Results: Dietary guides improved competence in choosing healthier food. Nature nudges did not enhance perceived restorativeness nor significantly influence purchase intentions. No significant interaction was observed, indicating the effects of dietary guides were more pronounced. Participants' health consciousness did not moderate the effect of nudging or boosting.

Conclusion: This research highlights the need for Indonesian OFD apps to promote healthier choices beyond pricing strategies and calls for standardized national health policies to regulate dietary information and choice environments in OFD apps.

Keywords: nudging, boosting, healthy food, nature, dietary guide, online food delivery (OFD), consumer decision-making, consumer health consciousness

Table of Content

1. Introduction

Food choice plays a crucial role in determining one's health, as poor dietary selections have been linked to prevalent non-communicable diseases (NCDs). The World Health Organization (2023) stated that 41 million people each year, or 74% of death cases, are impacted by NCDs such as diabetes, cardiovascular diseases, cancers, and chronic respiratory diseases. These diseases account for the majority of deaths, especially in low and middle-income countries. For instance, a country like Indonesia is struggling with significant death numbers, with 73% of death cases caused by NCDs, cardiovascular diseases contributing the most to the death rates in the country (World Health Organization, 2018). Given that NCDs are often caused by food, further examination of the food environment becomes important.

As online food ordering platforms continue to gain prominence, a more in-depth assessment becomes essential. In a systematic review study, Wyse et al. (2021) identified several online food environments frequently discussed and targeted for interventions, including online groceries, workplaces, and school cafeterias. However, one of the digital food environments that is still overlooked is the Online Food Delivery platform (OFD), which has shown a prominent emergence in the food environment and creates challenges impacting diet and health (Bates et al., 2020). Cited from CNBC Indonesia (2023), a report by We Are Social reveals that Indonesia experienced a remarkable surge, with over 19 million users engaging in OFD between 2022 and 2023, establishing its position as the leading market in Southeast Asia in terms of both growth and market size (Dashmote, 2022). Thus, this makes OFD Apps in the Indonesian context a potential environment to intervene.

Previously, Goffe et al. (2020), in their review, found that the most impactful interventions in promoting healthier eating on OFD apps involve intrusive strategies, such as

implementing incentives for healthy food and offering higher prices for unhealthy options. Besides price factors, there are several other variables considered important by OFD users, such as mood, sensory attraction, and health information (Eu & Sameeha, 2021). It has been found that in younger generations such as university students, sensory attraction when ordering food on OFD platforms is more valued, while for more mature groups of people such as parents or families, health knowledge is considered the most important aspect when selecting food (Eu & Sameeha, 2021). Therefore, this serves as an opportunity to explore more nuanced strategies other than pricing, for instance, nudging and boosting.

Nudging is an intervention approach that aim to alter people's behavior by using gentle cues without restricting their options (Thaler & Sunstein, 2008). For example, visual cues such as labels and primes are used to promote healthy eating behaviors, especially in digital contexts (Deek et al., 2022; Van Der Laan et al., 2017). To influence healthier food choices, these cues may incorporate visual elements like colors, shapes, aesthetic designs, materials, and combinations of text and images (Vermeir & Roose, 2020). These cues serve as stimuli that impact individuals' attitudes and their cognitive, affective, and motivational perceptions (Cadario & Chandon, 2020; Sample et al., 2019; Vermeir & Roose, 2020). Labels, stickers, and smileys have been used to nudge individuals for choosing healthier options (Cadario & Chandon, 2020).

Another underexplored stimulus specifically in a digital environment is the inclusion of natural elements. It has been studied that nature element may serve as stimuli that enhance attention restoration that might lead to healthy food choices like promoting vegetable consumption (Kim & Magnini, 2016; Michels, 2022). This may be due to the enhancement of cognitive performance, such as improved attention and memory, from direct or indirect interactions with nature for instance walking in nature physically, or seeing nature pictures

(Berman et al., 2008). It is suggested by Vermeir & Roose (2020), future research should investigate how illustrations or photos impact cognitive responses and whether these effects influence food perceptions and behavioral outcomes. Therefore, incorporating nature as a stimulus for promoting healthy eating in a digital environment is a novel approach to encourage better dietary choices.

Subsequently, boosting is an alternative mechanism and can be used either independently or together with nudges (Schneider et al., 2022). Boosting aims to build individuals' competencies in making better choices (Grüne-Yanoff & Hertwig, 2017). Unlike nudges, boosting interventions "target competencies rather than only affecting immediate behavior" (Grüne-Yanoff & Hertwig, 2017, p.977). Boosts can either directly enhance people's competencies or knowledge. For example, using fact boxes that contain complex health information like providing the benefits and harms of a vaccine can facilitate individuals in following health recommendations (Rouyard et al., 2022).

Although both have distinct aspects, it is observed that boosting and nudging interventions could complement each other, leading to the question of when a specific intervention is preferable under certain conditions (Hertwig & Grüne‐Yanoff, 2017). Neither nudges nor boosts are mutually exclusive, and their effectiveness depends on the context and goals of the intervention (Winterstein, 2022). This current study aims to investigate whether exposure to nature also improves competence in boosting interventions, since nature is widely recognized for its ability to restore attention and enhance cognitive functioning. The study seeks to identify the most effective strategy—whether it be nudging, boosting, or a combination of both—within the OFD platform.

This research answers the question, “How can nature nudges and dietary guide boosts be used to influence healthy food choices in the online food delivery environment?” This aims to examine the comparison between nudging and boosting interventions in the digital realm, particularly in promoting healthy eating within OFD platforms. It highlights the role of nature in the digital environment, the dimensions of each intervention, including their normative implications, and the specific goals they aim to achieve. The goal is to find out whether or not these strategies work in an OFD context and which conditions have the intended effect. This was tested using a 2 (Nudging: nature nudges vs absent) x 2 (Boosting: dietary guide boosts vs absent using designed online food delivery apps as manipulation stimuli.

2. Theoretical Framework

2.1 Consumers' Decision Making

Consumers make product or service choices rationally and irrationally. Kahneman (2003), distinguished individuals' decision-making process by using the terms intuition (System 1) and reasoning (System 2). System 1 goes through a process that is "automatic, effortless, associative, implicit (not available to introspection), and often emotionally charged; they are also governed by habit and are therefore difficult to control or modify" (Kahneman, 2003, p. 698). Conversely, the reasoning (System 2) works under a process that is "slower, serial, effortful, more likely to be consciously monitored, and deliberately controlled; they are also relatively flexible and potentially rule-governed" (p. 698). This notion belongs under the umbrella of the heuristic and biases (H&B) research approach. The goal is to understand why people's beliefs and choices do not always align with what rational-agent models predict, by examining the systematic biases that influence them (Tversky & Kahneman, 2003).

On the other hand, another research approaches namely simple heuristics (SH), also maps out human bounded rationality, yet has a different mechanism than the former program (Grüne‐Yanoff & Hertwig, 2015). SH acknowledges that people make poor decisions, however, SH assessed holistically bounded rationality which is not always calculative and rational, however might still produce good enough decisions (Grüne‐Yanoff & Hertwig, 2015). For instance, SH acknowledges that individuals have the ability to distinguish known heuristics and use the most favored ones depending on situations (Gigerenzer & Gaissmaier, 2011). The SH approach does not view human reasoning and decision-making as systematically flawed but instead suggests that humans use simple heuristics to make satisficing decisions (Grüne‐Yanoff

& Hertwig, 2015). These two research programs, H&B and SH, built on behavior change programs namely nudging and boosting respectively.

Rooted in the H&B program, nudge interventions would make use of the deficiencies of System 1 rather than nurture the reasoning ability of individuals using System 2 in making a decision (Hertwig & Grüne‐Yanoff, 2017). As it is known that people are inherently aware and wish to adopt a healthy diet, they often fail to make the right food decision when System 2 reasoning is influenced by the intuitive System 1, causing individuals to decide impulsively. Thus, nudging could promote healthy choices by changing how choices are presented (Chance et al., 2014). On the other hand, boosting, which is rooted in the SH program, has interventions that diverge from the singular perspective of the dual system theory regarding human cognitive structure. Boosting interventions aim to enhance both the competence and significance of individuals' cognitive and motivational processes in decision-making (Hertwig & Grüne‐Yanoff, 2017). This approach favors and enhances individual capacity by empowering people to make better decisions without relying on paternalistic intervention (Hertwig & Ryall, 2019).

2.2 Comparison of Nudges and Boosts

Grüne‐Yanoff & Hertwig (2017) considered nudging as the initiator to the development of boosting, however, both were elaborated to have differences. Although both nudges and boosts address cognitive errors, both interventions differ in terms of mechanism (Rouyard, 2022). Nudge policies are grounded in the assumption that cognitive errors occur automatically due to the deficiency of human cognition, as suggested by Kahneman's System 1–System 2 view (Grüne‐Yanoff & Hertwig, 2015). Rooted in the dual-system architecture of human cognition, nudging interventions aim to guide decision-making by altering the external choice architecture.

Boosts, on the other hand focus on empowering individuals to make better choices on their own by addressing the underlying cognitive limitations directly rather than steering behavior through biases (Hertwig & Ryall, 2019). They assume that cognitive errors can be mitigated by equipping individuals with better reasoning competencies (Grüne‐Yanoff & Hertwig, 2015). For instance, boosts may provide decision-making tools or knowledge about biases to empower individuals to make better choices that are expected to persist after the intervention is removed (Grüne‐Yanoff & Hertwig, 2017).

To illustrate this clearer, nudges interventions might aim to redesign the choice environment, for instance the case of retirement saving, by reducing the visibility of unwanted choices, providing default options, re-framing information, or even limiting consumer choices (Camerer et al., 2003; Rouyard, 2022). These approaches act as a prompt harnessing individuals' cognitive deficiencies. On the other hand, with the same behavior goal, boosts would teach techniques to enhance decision-making abilities. For instance, teaching the 1/N rule, which distributes resources equally across different investment options can help individuals navigate complex financial decisions more effectively (Gigerenzer & Gaissmaier, 2011). Hence, boosting strategies aim to equip individuals with generalizable competencies through changes in knowledge, decision tools, or the external environment (Grüne‐Yanoff & Hertwig, 2017).

From these illustrations it can be inferred that nudge policies do not necessarily demand individuals to be aware of or able to control their cognitive biases, operating on the assumption that biases can be influenced without conscious access to underlying processes (Grüne‐Yanoff & Hertwig, 2015). This form of soft paternalism raises ethical concerns about autonomy and consent (Fateh-Moghadam & Gutmann, 2013). This affects how nudging interventions may raise

concerns about autonomy and transparency due to their potentially manipulative nature as well as aiming to correct mistakes only in particular contexts (Grüne‐Yanoff & Hertwig, 2015).

On the other hand, boost interventions prioritize awareness and controllability of errors, seeking to enhance individuals' understanding of biases and providing tools to actively mitigate biases during decision-making (Grüne‐Yanoff & Hertwig, 2015). This approach reduces the need for paternalistic interventions by empowering people to understand and manage their biases themselves (Gigerenzer & Gaissmaier, 2011). Boosting interventions show more transparency, allowing individuals the freedom to utilize their newly acquired skills as they choose (Rouyard, 2022). Table 1 as provided in Grüne‐Yanoff & Hertwig (2017) summarizes the differences.

H1: People are more aware of the intention behind boosting interventions but are less aware of the intention behind nudging interventions.

Table 1

Seven Dimensions of Nudging and Boosting based on Grüne‐Yanoff & Hertwig (2017)

Dimension	**Nudging**	**Boosting**
Intervention target	Behavior	Competences
Roots in research programs and evidence	Describe decision-makers as systematically imperfect, influenced by cognitive and motivational deficiencies.	Recognize human limitations but highlight their competencies and explore ways to enhance them.
Causal pathways	Leverage cognitive and motivational deficiencies alongside modifications to the external choice architecture.	Enhance competencies through improvements in skills, knowledge, decision tools, or the external environment.
Assumptions about cognitive architecture	Dual-system architecture	Cognitive architectures are adaptable
Empirical distinction criterion (reversibility)	Once the intervention is removed, behavior returns to its pre-intervention state.	Desired effects should continue even after the successful intervention is removed.
Programmatic ambition	Correct significant mistakes in specific contexts—"local repair."	Provide individuals with domain-specific or generalizable competencies.
Normative Implication	May violate autonomy and transparency.	Inherently transparent and require cooperation—an offer that individuals may accept or decline.

2.3 Nudging healthier food choice

Nudging is a way of using subtle cues to influence one's behavior in a foreseeable manner without restricting choices or substantially altering their economic motivations (Thaler & Sunstein, 2008). Nudging is related to the concept of libertarian paternalism that guides individuals to make beneficial choices without coercive manners (Thaler & Sunstein, 2003). The concept of nudging which was originally used to assess the physical environment has been used for the digital environment as well. Digital nudging happens in digital choice environments which are in the form of "user interfaces – such as web-based forms and ERP screens – that require people to make judgments or decisions" (Weinmann et al., 2016 p. 1).

Cadario & Chandon, (2020) introduced three categorizations of nudging healthy diets namely cognitive, affective, and behavioral nudges. A cognitively oriented nudge is a type of intervention aimed at influencing consumer knowledge. This can be done through descriptive (informational) labeling, such as calorie counts, or evaluative (non-informational) labeling, such as stickers, smiley faces, or health logos, as well as by enhancing the visibility of healthy food options. On the other hand, affectively oriented nudges alter consumers' emotions without necessarily affecting their knowledge, for instance increasing the hedonic attractiveness of nutritious choices such as using attractive food images. Furthermore, behaviorally oriented nudges are attempts that impact individuals' actions or motoric responses, for instance, using smaller plates for eating unhealthy food and vice versa (Cadario & Chandon, 2020).

Despite cognitive nudges being considered the least effective among nudges in the food domain, they still exert a notable influence on promoting healthy food choices (Winterstein, 2022). Cognitively oriented nudges may be also suitable in digital context since it commonly influences food choices through visual or auditory stimuli (Cadario & Chandon, 2020). Since

consumers are not always rational, cognitively oriented nudges could play a role in influencing people's choices by designing a choice environment that prioritizes healthy food options, even without explicitly providing explicit information (Cadario & Chandon, 2020). This way, nudges make use of individuals' cognitive deficiencies since they often rely on the System 1 thinking process in making decisions rather than activating the reasoning System 2.

To influence individuals' cognitive processes, some nudges that are categorized as primes have shown their effectiveness in influencing healthy food choices. According to Blumenthal-Barby & Burroughs (2012), primes are subconscious signs that could be related to physical, verbal, or sensory that are used to influence specific choices. For instance, placing photographs of green beans and carrots on a cafetaria tray, influenced vegetables consumption significantly in the intervention day compared to the control day (Reicks et al., 2012). Moreover, color and word priming also works to reduce high-energy food and increase the amount of low-energy food consumption in a realistic online supermarket (Van Der Laan et al., 2017). Hence, priming individuals through certain cues could act as a nudge to drive individuals to the availability of healthy options. Some visual cues that are important when it comes to food consist of color, shape, aesthetic cues, materiality, text and picture, and logo (Vermeir & Roose, 2020). Therefore, more examination of the impact of seeing certain images to the cognitive response is worth to explore (Vermeir & Roose, 2020).

2.3.2 Nature in Enhancing Attention Restoration

Through attention restoration theory (ART), Kaplan and Kaplan (1989) posited that natural environments have specific qualities that can help restore attention and reduce mental fatigue. Studies on the influence of nature on attention restoration have been conducted in

various contexts, including real physical interactions with nature and indirect contact with natural environments (Basu et al., 2018; Berman et al., 2008). These studies consistently demonstrate an association between a connection to nature and perceived levels of restorativeness (Basu et al., 2018). For instance, research suggests that both direct interactions, such as walking in nature, and indirect interactions, such as viewing pictures of nature, can enhance cognitive functioning, specifically improving attention and memory (Berman et al., 2008). Moreover, the findings from a study (Twedt et al., 2019) indicate that the perceived naturalness of nature images tested on a digital questionnaire was considered more restorative compared to images of buildings. These findings underscore the cognitive benefits uniquely tied to nature, supporting the idea that nature can serve as a tool for enhancing cognitive functioning.

2.3.3 Nature nudges in Promoting Healthy Eating Behavior

In the context of healthy food, certain elements of nature have been shown to promote healthier choices. The study by Michels et al. (2022) suggests that exposure to green plants can influence people's preferences, leading them to consume more vegetables and avoid unhealthy snacks in indoor settings. Kim & Magnini (2016) also found that exposure to indoor plants could potentially restore directed attention abilities, which may help mitigate negative affect and unhealthy eating caused by cognitive limitations.

It has been found that not only direct contact with nature but also indirect exposure such as viewing nature images, can have a positive influence on making healthier food choices (Pentikäinen et al., 2022). For instance, an increase in the proportion of healthier food selections and a decrease in plate waste were observed when participants were exposed to a restorative nature ambiance, such as images of a forest, compared to a fast-food ambiance in a physical

restaurant setting (Pentikäinen et al., 2022). However, the effect of nature nudges on healthy food choices specifically in the digital food environment has not yet been explored further.

H2: Exposure to nature nudges on the OFD app platform interface will influence individuals' purchase intention toward healthy food as opposed to the absence of nature nudges.

H3: Exposure to nature nudges on the OFD app platform positively will influence perceived restorativeness, as opposed to the absence of nature nudges.

2.4 Boosting in Promoting Healthy Eating Behavior

Unlike nudging which makes use of the cognitive deficiencies of an individual, boosts try to improve those deficiencies with the target competencies (Grüne‐Yanoff & Hertwig, 2015). Hence, the aim of a boosting intervention requires an active realization from the individuals to perform a behavior. Grüne‐Yanoff & Hertwig (2017) introduce some boosting taxonomies that explain several forms of boosts namely risk literacy boosts, uncertainty management boosts, and motivational boosts. The risk literacy boost fostered or enhanced individuals to better understand statistical information, particularly in domains such as health and finances. Moreover, uncertainty management boosts develop procedural guidelines for making sound decisions, predictions, and evaluations in situations of uncertainty. Lastly, motivational boosts enhance individuals' ability to independently regulate their motivation, cognitive control, and self-control through interventions such as motivational workshops.

As the study aims to examine the ability of boosts to empower users to make healthier choices, this might be relevant to align with the concept of uncertainty management boosts outlined in the taxonomy. As it aligns with the context of this research which aim to teach easy,

intuitive, and effective heuristics to aid making decisions in different situations where people do not have complete or certain information about risks (Grüne‐Yanoff & Hertwig, 2015). This could be done by teaching individuals the Take-the-Best Heuristic where individuals consider several cues at the moment and choose the options that is most favored (Gigerenzer & Gaissmaier, 2011). Through this process, boosts might help individuals make more informed decisions. In this current study context, this would be applied by establishing procedural rules for decision-making under uncertainty, by providing individuals with a tool that equip them to choose healthier food options.In the health domain, various strategies have been implemented to enhance self-control, address the challenge of exercising regularly, process complex health information, and foster health literacy (Rouyard et al., 2022). Moreover, in the healthy diet context, simple eating rules by Pollan (2013) that are easy to understand and implement can also be considered as a boost. These rules might act as a guide to foster generalizable knowledge and comptencies of how to make better food decisions.

However, not all dietary guides like this are successful, for instance, providing information about low in fat in the form of explanatory sentences in the food menu (Schneider et al., 2022). The finding showed no effect of the order of healthy menus for children and parents in physical restaurant settings. On the other hand, there is another study where boosting intervention was successful in reducing calorie consumption in fast food restaurants in the form of symbolic and numerical information about the calorie density of the food (Lee & Lee, 2018). Hence, nutritional information boosts could be explored further. One of the suggested ways is by employing fact box methods to simplify complex information thus facilitating making informed decisions (Rouyard et al., 2022). Therefore, this approach could be regarded as a simple dietary guide to foster competence in making healthier food choices in an OFD environment.

Previous boosting interventions in the health food domain were mostly done to measure healthy purchase intention (Lee & Lee, 2018; Schneider et al., 2022; Winterstein, 2022). However, the primary goal of boosts is to enhance competence through understanding or knowledge, however, it has not yet measured. For example, in Schneider et al. (2022), they created a healthier menu intervention in a menu book of a physical restaurant which has an information guide boost below it. However, the dependent variable tested in the study was the direct purchase from the menu without examining if there was increased knowledge of the restaurant visitors. This might overlook the aim for boosting which emphasizes improving individuals' decision-making skills, knowledge, and capabilities through education, training, or other forms of tools (Grüne‐Yanoff & Hertwig, 2015). Hence, it would be reasonable to see if boosting intervention increase competence of its target intervention before making decisions.

H4: Dietary guides boosts on the OFD app platforms will result in competence (knowledge) of how to make healthy food choices as opposed to the absence of dietary guides boosts.

2.5 Interaction Effect: Combination of Nudging and Boosting

Although some studies have illustrated a comparison of how nudges and boosts are implemented in behavior change interventions (Lorenz-Spreen et al., 2020; Rouyard et al., 2022), a study that combines the two approaches has yet to be explored. It is perceived that nuanced policymaking should avoid treating nudging and boosting as a one-size-fits-all approach or favor one approach over another (Rouyard et al., 2022). It encourages policymakers to consider a range of factors, including the comparative advantages of nudges and boosts, to identify the most appropriate intervention for a given context (Grüne‐Yanoff & Hertwig, 2017).

In various domains such as healthy food choices, financial decisions, and self-control issues, individuals' abilities can be enhanced through nudges, boosts, or a combination of both (Grüne‐Yanoff & Hertwig, 2017). Although it is claimed that boosting answers paternalism and autonomy problems embedded in nudging, not all policy makers would favor boosting, which usually due to often the policymaker's interest in maintaining the ability to use nudges in the future (Hertwig & Ryall, 2019). Therefore, it is necessary to examine within the context of an OFD app whether a nudge or a boost is more suitable.

One study that combined this approach was found however, failed to create a significant effect of the intervention they did, using nudges such as cartoon characters and simple dietary information on the food menu as a boost in a restaurant addressed to kids and parents (Schneider et al., 2022). The authors argued that one of the reasons is that the intervention was conducted in real restaurant settings, where social interactions at the dining table, particularly between parents and children, significantly influenced food-related decisions (Schneider et al., 2022). However, as other types of combination intervention within this domain have not been found, this research aims to examine boosting strategy based on boosting taxonomy combined with nature nudges. This is to expect both positive effects of each intervention respectively, instead of favoring one effect.

As previously discussed, nature has a restorative effect on attention, enhancing cognitive function. This effect is anticipated to be significant as an interaction effect of nudging and boosting. The study by Berman et al. (2008) examined the impact of interacting with nature both physically and visually through an experimental design where participants engaged in cognitive tasks. Some participants were presented with sequences of digits, which they had to recall in reverse order in order to test of their working memory and attentional control. The results

indicated that participants who walked in natural environments or viewed images of nature performed better on these cognitive tasks compared to those who were exposed to urban environments. This serves to underline the mechanism behind combining both interventions, where nature nudges can influence attention restoration. This, in turn, leads to improved performance on cognitive tasks, which might enhance the competence of individuals in making healthier food purchases after seeting the dietary guides.

H5: When nature nudges and dietary guide boosts are presented together, they influence purchase intention in making healthy food choices more effectively than presenting only single or neither approach.

H6: When nature nudges and dietary guide boosts are presented together, they enhance competence more effectively than presenting only single or neither approach.

2.6 Moderating Effect: Consumers' Health Consciousness

Previous experiments have shown that how consumers view health has significant impacts on interventions promoting healthy eating. For example, in a study on food packaging colors conducted by Mai et al. (2016), it was found that less health-conscious individuals tend to prefer food items with taste-enhancing colors such as darker colors rather than colors associated with health benefits or light colors. Moreover, another study also showed that colored-green label increases the perceived healthfulness of a product among consumers who value healthy diets (Schuldt, 2013).

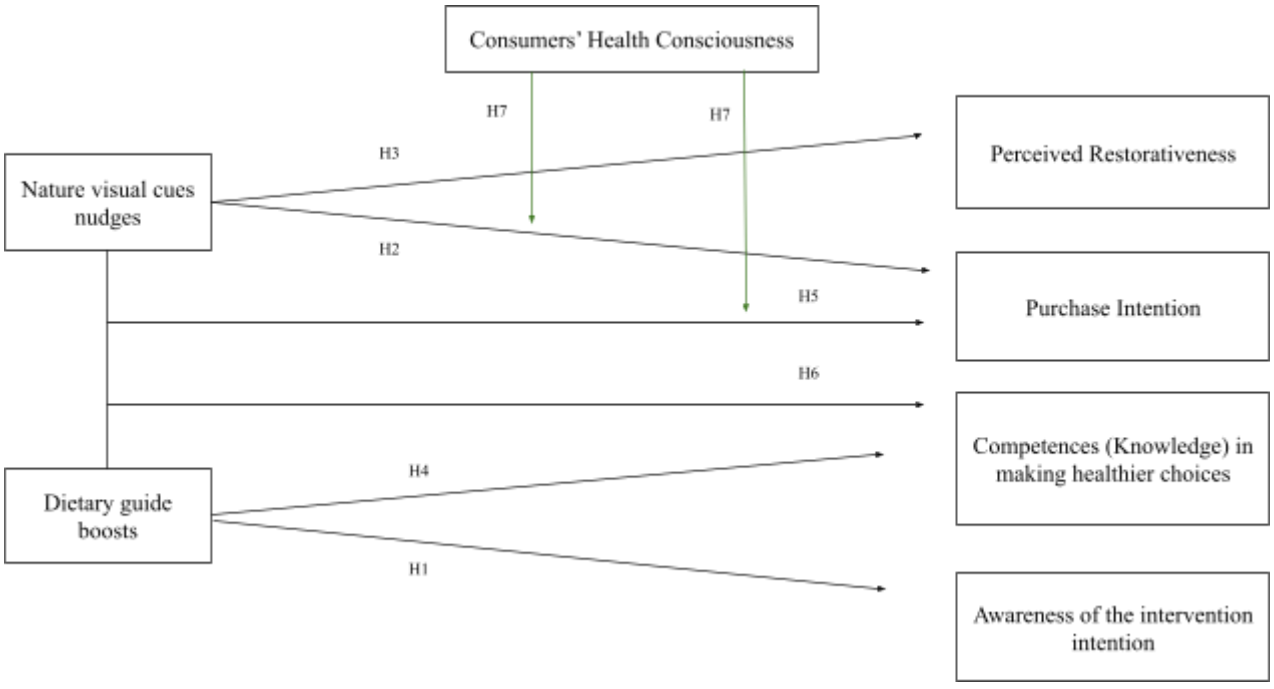
When choosing food, consumers can be categorized into several groups, namely those who pay close attention to health-related attributes such as health claims, labels, sugar, and fat content, as well as those who are interested in health-unrelated attributes such as taste, aroma,

price, and brand (Mai & Hoffmann, 2012). Therefore, in this current study, health-related attributes such as dietary guide boosts and nature nudges might have stronger effects on individuals who pay more attention to health-related attributes. However this will only be tested to the purchase intention variables since there is no evidence of the effect of health consciousness for the rest of other dependent variables.

H7: The nature nudges and dietary guide boosts are expected to be more effective on people with a high level of health consciousness as opposed to a low level of health consciousness in terms of influencing healthy purchase intention.

Figure 1

Research Model



3. Methods

3.1 Research Design

This study is a 2 (Nudging: nature nudges vs absent) x 2 (Boosting: dietary guide boosts vs absent) experimental design tested with a quantitative method. The study aimed to investigate the effectiveness of nudges and boosts in influencing food choices within an online food delivery (OFD) mobile app interface. One moderating variable considered was the health consciousness of OFD users in making food choices.

The research involved manipulating the OFD mobile app interface to incorporate various conditions. Participants were randomly assigned to different experimental conditions to test the impact of nudges, boosts, and their interaction on food choice behaviors. The presence or absence of nature nudges and dietary guide boosts were manipulated to assess their effects on participants' food choices.

3.2 Pre-test

A pre-test was done before the main test to decide on design elements that were used for the stimuli for the condition with nudging and boosting. This was tested through a small offline focus group discussion (FGD) as part of the pre-test phase (N=5). All participants were Indonesians aged between 25 and 34 years old. Several materials were presented to the participants, who were asked to identify which materials had the desired effects. The most frequently chosen design will be used as the design stimulus in the next phase. The pre-test consisted of five tasks with different objectives using Miro board and each of the participants was given their own board, so they could not see the other participants' work (see Appendix A).

At the beginning of the pre-test session, the researcher gave information about the objective of the pre-test, and all participants were asked to give verbal consent for the activity and all five participants agreed to proceed. Furthermore, after each task was performed, the researcher guided the discussion so that participants could explain their choices.

Tasks one and two were dedicated to the nudging condition to determine and validate which nature images and symbols elicited a stronger perception of naturalness. On task one, participants needed to rank items from the most to the least giving the intended perception. On the first task, participants were given different images to ascertain which ones elicited a more natural perception. These images were picked from the consideration of low, medium, and high visual appeal classifications (Twedt et al., 2019). These images were sourced from the website https://unsplash.com/ under the free category. On the second task, participants were given different symbols that would be placed next to healthy food options with the same mechanism as the first task.

Furthermore, tasks three and four were meant to test boosting design material. On task three, participants were asked to check on the dietary guide screen that was prepared by the researcher. This screen was developed referring to the Ministry of Health Regulation No. 41 of Indonesia's Guide of Balanced Diet or PMK No. 41 Pedoman Gizi Seimbang. The screen was designed using Figma, and the illustrations were digitally drawn using the Procreate app. Participants were asked to provide feedback on the convenience and comprehensibility of the design and offered suggestions. On the fourth task, two designs of the product page interfaces were presented. Participants were asked about their preferences regarding the presentation format of information, considering readability and convenience.

Lastly, on the fifth task, participants were presented with several food and beverage menu photos. Participants were asked to rank the perceived healthiness of various food items, determining which menu items would be used for the stimuli design. The images were sourced directly from the GoFood and Grab Food App, the most used OFD platforms in Indonesia. The keywords used to search for items were derived from previously reported data on the most frequently ordered items on both platforms from various news websites (Gojek, 2024; Henry, 2022; Insertlive, 2023; Siella & Aisyah, 2023). Some items intended to evoke perceptions of healthiness were sourced from the healthy food sections on each platform, given that reported popular food choices tend to be unhealthy. After each task, participants engaged in discussions about their work and provided explanations for their choices.

3.2.1 Pre-test Result

The result of task one revealed a predominant preference for nature images in the medium visual appeal compared to both high and low visual appeal nature. Participants favored this medium visual nature since they found it less intimidating than the high visual nature. Moreover, the low visual nature images failed to evoke a strong sense of naturalness or the sensation of restorativeness. Additionally, participants also considered color as an important aspect when selecting nature photos. Participants agreed that pictures with gloomy tones are less attractive compared to brighter images.

During the discussion in the second task of selecting nature symbols, participants unanimously agreed, particularly on the choice of colors. They found that for the illustrated symbols, the perception of naturalness could be effectively conveyed through the careful selection of green hues and contrasting colors. They preferred items with two colors

combinations instead of more than two colors. Additionally, participants favored icon designs that were simple in shape.

In task three, participants were asked to review whether the message of the boosting screen was understandable. Several feedback points from participants included the amount of information that needed to be read and the desire for a more straightforward message. One participant mentioned, *"I would not want to read so much information, and I want to order food right away"*. Hence, the improvement was made by shortening the information. Moreover, participants preferred visual presentations using illustrations over plain text but suggested improvements could be made by ensuring the images were more relevant to the message content. Bland word choices were also disliked, hence to make it more engaging is preferable. Some input regarding design was received, especially concerning the flow of message reading. The placement of text also affected the ease of reading information. Additionally, the choice of font in headlines was perceived better when using a *sans serif* font compared to *serif*, to create a friendlier tonality of the message.

In the fourth task, participants found the combination of both design options preferable. They regarded the detailed information on the front page as simpler and not requiring many steps to understand the nutritional content of each menu card. However, it was noted that spacing should be considered to reduce cognitive overload. Additionally, aesthetic aspect was also taken into account, particularly the placement of food images inside the box, which was considered more modern than placing them above the box. Nevertheless, all participants agreed that a detailed food page was still necessary to provide them with information about the ingredients of each meal.

In the final task, participants were asked to rank food and beverage items based on their perceived healthfulness. For mains, participants agreed that foods labeled as "vegan," "beefless," and those with images showing vegetables were considered healthier than other options. Foods lacked in fiber and appeared greasy were placed lower in the ranking. In the beverage category, participants agreed that low in sugar beverages were perceived as the healthiest and items that are high in sugar were ranked lower. Lastly, for snacks and desserts, fruits without too many additives were chosen as the healthiest. Items in this category were considered unhealthy if they contained excessive fat or sugar, thus ranking lower. The selected items were used in the shopping task to measure the dependent variable 'Purchase Intention'.

Figure 2

Chosen nature images & symbol

Figure 3

Chosen food and beverages items

3.3 Sampling Procedure and Participants

Participants were recruited using convenience and snowball sampling through social media and messenger apps. This approach was chosen due to the broad target audience, which required no specific criteria beyond being over 18 years old and a user of the OFD app in Indonesia. Demographic information, including age, gender, and educational level, was collected from participants at the end of the questionnaire. The study targeted individuals aged 18 and above to adhere to ethical guidelines regarding individual consent and because the majority of delivery app users fall within that age range (Gitnux, n.d). Participants were randomly exposed to manipulations corresponding to one of the conditions assigned by Qualtrics.

In a total of two weeks of survey distribution, there were 221 responses recorded. Some data were removed due to consent rejection (N= 2), and incomplete surveys (N= 49). This

resulted in 170 valid responses, with 51 males (30%), and 119 females (70%). A chi-square test was conducted to examine the relationship between each condition and gender. The results indicated that there was no significant association between the variables, $\chi^2(3,170) = 1.16$, $p = .76$. Subsequently, a chi-square test was also performed to investigate the association between educational level and the conditions. The analysis revealed no significant relationship between educational level and the conditions, $\chi^2(15,170) = 18.91$, $p = .22$.

Furthermore, a one-way ANOVA was conducted to assess the relationship between participants' age and the different conditions of the study. Specifically, the ANOVA revealed that there was no statistically significant difference in ages across the various experimental conditions $F(3, 166) = 0.64$, $p = .59$. Ultimately, a one-way ANOVA was also conducted to compare the health consciousness scores across the different experimental conditions. The results showed that there was no significant difference in health consciousness between the conditions, $F(3, 166) = 1.96$, $p = .12$. This indicates that the level of health consciousness did not significantly vary across the different conditions.

Table 2

Randomization Check Overview

		Condition 1 (Combined condition)		**Condition 2 (Nudging condition)**		**Condition 3 (Boosting condition)**		**Condition 4 (Control Condition)**	
		N	%	N	%	N	%	N	%
Total		41	100%	46	100%	42	100%	41	100%
Gender[a)]	Male	13	31.7%	14	30.4%	10	23.8%	14	34.2%
	Female	28	68.3%	32	69.6%	32	76.2%	27	65.9%
Education[b)]	Middle School	0	0%	0	0%	0	0%	1	2.4%
	High school	3	7.3%	5	10.9%	5	11.9%	2	4.9%
	Diploma	1	2.4%	4	8.7%	1	2.4%	4	9.8%
	Bachelor	32	78.1%	27	58.7%	32	76.2%	24	58.5%
	Master	5	12.2%	8	17.4%	4	9.5%	10	24.4%
	Doctoral	0	0%	2	4.35%	0	0%	0	0%
		M	SD	M	SD	M	SD	M	SD
Age[c)]		33.3	10.7	34.2	11.3	36.3	12.3	36	12.1
Health C[d)]		6.07	0.6	5.66	0.9	5.88	0.9	5.94	0.68

Note: Health C. = Health Consciousness (moderating variable)

[a)] $\chi^2(3, 170) = 1.16$, $p = .76$

[b)] $\chi^2(15, 170) = 18.91$, $p = .22$

[c)] $F(3, 166) = 0.64$, $p = .59$

[d)] $F(3,166) = 1.96$, $p = .12$

3.4 Stimuli Design

The final stimuli design was based on the results of the pre-test, which yielded four different conditions as shown in Figure 2 and Figure 3 (see Appendix B for the complete version). The design of the OFD interface was developed for each condition using the tool Figma. For the condition with nudges, a single product page was developed for the shopping

task. This page included a homepage banner at the top, followed by food and beverage items below, with a nature icon next to the healthy items. In the condition where only boosts were present, participants saw multiple pages, including the dietary guide page and the product page for the shopping task. Under each item on the product page, there was nutrition information to guide participants in choosing healthier food based on the previous page they viewed. The nutritional details were sourced from diet-related websites such as FatSecret, My Net Diary, Green Rebel Food, and Hello Sehat.

For condition where both nudges and boosts were present, the dietary guide incorporated nature elements such as green colors and leaf illustrations, while the product page featured nudges, including a banner and nature symbol alongside the food items. In the control condition, only a product page was created without any natural elements or nutritional information. For product pages without nature nudges, including only the boosting and control conditions, warm colors were used for the background and overall tonality of the page. This design choice was influenced by the experiment of Pentikäinen et al. (2022), where warm colors represented a fast food ambiance that had a reverse effect on influencing healthy choices. The development of this screen referred to the colors in the research reference.

Figure 4

Boosting dietary guide screen

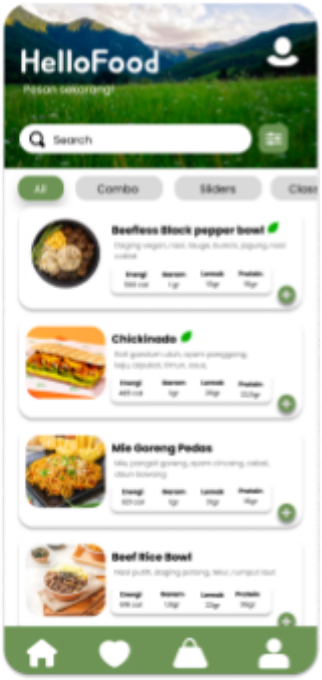
Indonesian (used as the stimuli)

English

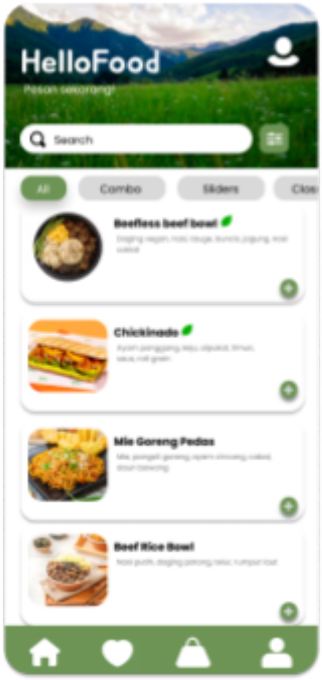
Figure 5

Product page

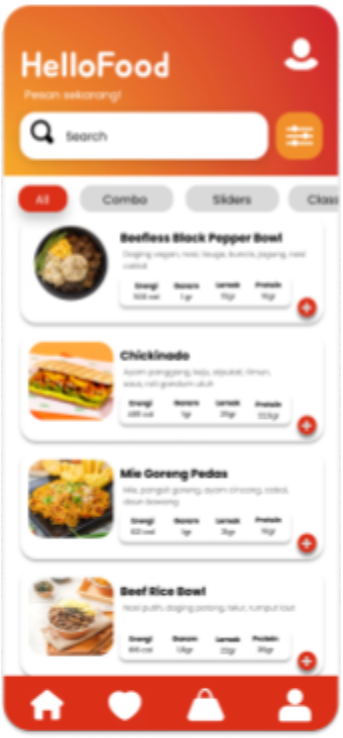
Condition 1



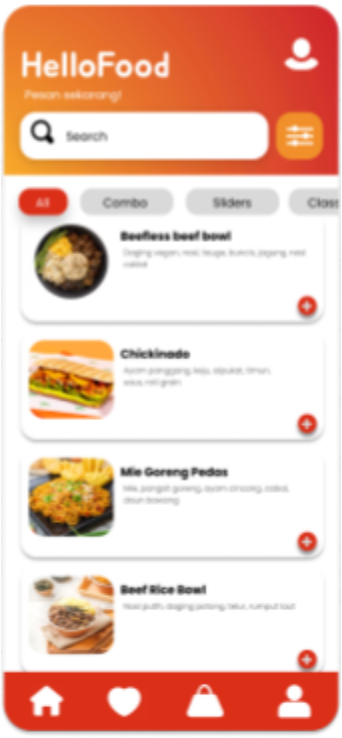
Condition 2



Condition 3



Condition 4



3.5 Main Experiment Procedures

This study received ethical approval from the Ethics Committee at the University of Twente (request number: 240425). The data collection was conducted using a quantitative online questionnaire in which the details can be found on Appendix C. The main experiment began with participants receiving a brief introduction to the research, intentionally vague to avoid biases. They were then presented with consent questions and asked for their agreement before proceeding with the test. Participants were randomly assigned to the four conditions and were shown scenarios to establish a uniform context setting for each condition.

In the condition with nudges, participants were directed straight to the product page without prior information about the research's intention. They were required to pick three items from a total of eight items. After completing the task, participants filled out a questionnaire regarding the chosen food items, health consciousness, knowledge, perceived restorativeness, manipulation check, and awareness of the intervention's intention. The same workflow was followed in the control condition, with the only difference in the stimuli.

For participants assigned to the conditions with boosting, the dietary guide information was presented before the shopping task. After reviewing the dietary guide, participants proceeded to the shopping task with the same mechanism as the nudging condition. Following the task, participants filled out a questionnaire similar to the nudging condition. After finishing the survey, participants were debriefed and asked for their consent once again before submitting their answers for every condition.

3.6 Measure

3.6.1 Consumers' Healthy Food Purchase Intention

The measurement was based on the 'add to cart' task assigned to participants. Participants could select only three items from the entire menu, which included both healthy and unhealthy options. Out of the eight items displayed, four were considered healthier and these healthy options were scored differently. This measure is to align with the hypothesis, which posited a positive correlation between purchase intention and nudging compared to the absence of nudging (Grüne‐Yanoff & Hertwig, 2017). It was anticipated that conditions with no nudges, would yield lower healthy purchase intention compared to the nudging condition. To calculate the mean score of healthy food purchase intention, the three items chosen by each participant were first calculated as a whole. Healthy items were given a value of 1, while unhealthy items were valued 0, thus the maximum value is 3 if all the chosen items are healthy and will be less than 3 if unhealthy items were chosen.

3.6.2 Awareness of the Intervention Intention

To better understand the impact of nudges and boosts on participants' awareness of the intervention intention, further examination was conducted. Participants were asked what they thought the purpose of the interface design was in this research. They had to choose one of three answers, with the correct answer being related to health. The other two options, assessing visual appeal and convenience, were included as potential factors influencing food choices aside from health (Onwezen et al., 2019). This was done to measure H1, whether participants acknowledged the purpose of the intervention and to check whether participants in the boosting condition were

more aware of the intervention's intention than those in the nudging condition, based on the dimension of normative implication in boosting and nudging (Grüne‐Yanoff & Hertwig, 2017). The correct answer was given a value of 1, while incorrect answers were given a value of 0

3.6.3 Consumers' Dietary Knowledge (Competence)

Conversely from the previous construct, this measure aimed to assess the intervention target of boosting, which is competence. Participants were asked questions to test their knowledge based on the intervention, requiring them to choose the right or wrong answer regarding which item is deemed healthier or which dietary information is accurate. This variable was assessed by calculating the total score of correct and incorrect answers of all 4 knowledge questions. Correct answers received a value of 1, whereas incorrect answers were assigned a value of 0. This resulted in a perfect score of 4 if all answers were correct or less than 4 if incorrectly answered. In line with the H4, participants exposed to the boost condition were expected to possess higher knowledge, indicating their competence in making food choices. This construct aimed to examine whether the reversibility dimension of the boost would be retained compared to the nudging condition (Grüne‐Yanoff & Hertwig, 2017). It was anticipated that participants exposed to the boosting condition would retain knowledge persistently, even after the stimuli were no longer available.

3.6.4 Perceived Restorativeness

This measure was conducted to evaluate whether conditions with nature visual cue nudges have a restorative effect. This aligns with previous studies indicating that perceived restorativeness from seeing nature nudges impacts healthy eating behavior (Kim & Magnini,

2016; Pentikäinen et al., 2022). These constructs were designed to address the causal pathways dimension of nudges, focusing on harnessing cognitive deficiencies as the intervention's focal point and based on assumptions about cognitive architecture that heavily lean towards System 1 processes (Grüne‐Yanoff & Hertwig, 2017). It was expected that in the condition without nature nudges, the results would not be as significant.

The scale was based on the Attention Restoration Theory by Kaplan and Kaplan (1989), which considers restorative aspects such as being away, coherence, fascination, and compatibility. It included statements adapted from Kim et al. (2017) such as “the interface design of the OFD app is visually stimulating,” “the interface design of OFD apps is well structured,” and “the OFD app design serves my purpose.” These were rated on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). A reliability analysis was performed, revealing a reliable internal consistency with a Cronbach’s Alpha of $\alpha = .81$, which surpasses the acceptable threshold of $\alpha = .70$.

3.6.5 Manipulation Check

Each participant was asked follow-up questions to assess the manipulation they received. They indicated whether they saw the nature nudges elements, such as the banner and nature symbol, with responses of "yes" (1) or "no" (0). Similar to nudging, participants in the boosting condition also received questions about whether they saw the stimuli of the dietary guide boost and nutritional information. The success of the manipulation was determined by calculating the number of correct versus incorrect answers, with a higher number of correct answers indicating successful manipulation.

3.6.6 Consumers' Perceived Knowledge on Healthy Choices

This measure contributed additional findings to examine participants' perceived knowledge of the healthfulness of foods in each condition. It was conducted to determine if there were notable distinctions between each condition and to examine whether boosts had a greater influence on perceived knowledge compared to no boosts. This was tested using the dietary knowledge questionnaire by Parmenter & Wardle (1999) and Roininen et al. (1999), which was adjusted to examine participants' understanding of dietary recommendations. Statements used included "From the task, now I know what current dietary recommendations are," "From the task, now I can choose between different foods to identify the healthiest ones," and "From the task, I can select foods that have a positive impact on my health." These were evaluated on a scale from 1 (strongly disagree) to 7 (strongly agree). A reliability analysis was performed, revealing a reliable internal consistency with a Cronbach's Alpha of $\alpha = .89$, exceeding the acceptable threshold of $\alpha = .70$. Ultimately, the correlation between perceived knowledge and actual knowledge, assessed through the knowledge questions, was examined.

3.6.7 Consumers' Health Consciousness

To measure the moderating variable, the Health Self-Consciousness Scale (HCSC) by Gould (1990) was used, including statements like "I reflect on my health a lot," "I am very self-conscious about my health," and "I am generally attentive to my inner feelings about my health" (Gould, 1990, p. 230). The assessment utilized a scale ranging from 1 (strongly disagree) to 7 (strongly agree) for evaluation. A reliability analysis was performed based on the main experiment data. The result revealed a reliable internal consistency with a Cronbach's Alpha of $\alpha = .77$, exceeding the acceptable threshold of $\alpha = .70$.

3.7 Data Analysis Plan

In this study, several types of measures were used, including a healthy shopping task to measure purchase intention, objective answers to assess competence and awareness of intervention intention, and a manipulation check. Additionally, a 7-point Likert scale was employed to measure perceived restorativeness, perceived knowledge, and the moderating variable of health consciousness. Consequently, the data analysis plan differed for each construct, and all analyses were performed using SPSS.

Firstly, the manipulation check variable was analyzed using descriptive statistics to determine if participants noticed the stimuli. Frequency tests measured recall accuracy to see if participants remembered seeing the stimuli. Furthermore, a two-way ANOVA was conducted to analyze the main and interaction effects on healthy purchase intention, perceived restorativeness, competence, and perceived knowledge. Following this, a correlation analysis were done to further explore the relationship between several variables including competence, perceived restorativeness, and awareness of intervention intention to healthy purchase intention, as well as perceived knowledge with competence. Lastly, a two-way ANOVA was also conducted to measure the moderating variable of health consciousness. Before this, the median was calculated to group participants into high and low health consciousness categories.

4. Result

4.1 Manipulation Check

Before doing the main analysis, a manipulation check was done of each condition to ensure that participants were aware of the stimuli. The distribution of participants across the different experimental conditions was fairly even. The combined condition had 41 participants (24.0%), the condition with only nature nudges had 46 participants (26.9%), the condition with only dietary guide boosts had 42 participants (24.6%), and the control condition had 41 participants (24.0%). These findings indicate that the survey distribution was balanced across all experimental conditions, enhancing the internal validity of the study by ensuring that each condition was equally represented.

4.1.1 Condition with Nudging

Participants assigned to the nudging condition included 87 people, including both Condition 1 and Condition 2. The results show that 36 participants (41.38%) correctly identified both of nature nudges including a banner and symbol. Additionally, 30 participants (34.48%) claimed to only saw one stimulus, which indicated that they had some level of awareness but did not fully aware of the stimuli. Meanwhile, 21 participants (24.14%) chose the option of seeing neither stimuli. From this finding, it can be concluded that the experiment was moderately successful, as at least 66% of participants displayed some level of awareness of the stimuli.

4.1.2 Condition with Boosting

There were 83 participants within conditions with boosting namely Condition 1 and 3. They needed to indicate whether or not they saw the boosting stimuli including dietary information screen and nutritional information under food or beverages items. The results show that 32 participants (38.55%) correctly identified the stimuli, indicating a clear understanding of the boost intervention. Subsequently, 41 participants (49.40%) identified only one boosting stimulus, suggesting they had partial awareness of the stimuli. However, 10 participants (12.05%) claimed that they did not see any of the stimuli given. Thus, the majority of participants (87.95%) achieved either full or partial correctness, indicating that the boosting intervention was successful.

4.2 Main Analyses

4.2.1. Effects on Purchase Intention

Main Effects – A two-way ANOVA was performed to see if there was a significant difference for each condition depicted by the mean difference illustrated in Table 3. This measurement is addressed to H2 and H5 which is expected that a condition with nudges will influence immediate purchase intention compared to a condition without nudges. However, the finding indicated that the main effect of nudging was not statistically significant $F(1,166) = 0.12$, $p = 0.73$, $n^2 = 0.01$. This suggests that the presence or absence of nature nudges does not significantly influence healthy purchase intentions.

Furthermore, the effect of boosting on healthy purchase intention was statistically significant $F(1, 166) = 14.96$, $p < 0.001$, $n^2 = 0.08$. This indicates that participants exposed to the

dietary guide boost showed a significantly higher intention to make healthy purchases compared to those who were not exposed to this intervention. As boosting was meant to equip individuals with competence rather than influencing immediate behavior, the result showed a significantly higher purchase intention within the condition. However, more examination needs to be done to see whether the higher number of healthy purchase intentions is correlated with participants' competence as the theory claims. Therefore, by reflecting on the finding, it can be inferred that H2 is rejected.

Table 3

Mean comparison of Healthy purchase intention by condition

Nudging	Boosting	Mean	Std. Deviation	N
Present	Present	2.17	0.80	41
	Absent	1.67	0.90	46
	Total	1.91	0.88	87
Absent	Present	2.14	0.93	42
	Absent	1.61	0.83	41
	Total	1.88	0.92	83
Total	Present	2.16	0.86	83
	Absent	1.64	0.86	87
	Total	1.89	0.90	170

Interaction Effects – The interaction effect was also observed to check whether dietary guide boosts strengthen or weaken the relationship between nature nudges and healthy purchase intention, however the analysis indicates that there was no significant interaction $F(1,166) = 0.19$, $p = 0.89$, $n^2 < 0.01$. These results suggest that the effect of combining nudges and boosts on

enhancing healthy purchase intention is not different from the individual effects of each intervention, hence, H5 is not supported.

4.2.2. Effects on the Awareness of the Intervention Intention

Main Effects – A Chi-Square test was conducted to measure participants' awareness of the intervention's objective across conditions. Each response was scored as 1 for a correct answer and 0 for an incorrect answer. This resulted in a mean difference of awareness to the intervention intention, as shown in Table 4 among different conditions. The results revealed significant findings regarding the impact of intervention strategies on awareness of intervention intention with higher mean difference in conditions with boosting. $\chi^2(3,170) = 31.696$, $p < .001$. This indicates that the type of intervention strategy had a statistically significant impact on participants' awareness. Specifically, the presence or absence of boosting had a strong impact, shown by a significantly higher means (52%) compared to the nudging condition (9%), combined condition (46%), and control condition (12%). Conversely, the nudging and control condition revealed significantly higher means in false answers indicating participants being unaware of the intervention intention. Therefore, H1 is supported with a notable significance in the condition with boosting.

Table 4

Mean comparison of awareness of intervention intention by condition

	Condition 1 (Combined condition)		Condition 2 (Nudging condition)		Condition 3 (Boosting condition)		Condition 4 (Control Condition)	
	N	%	N	%	N	%	N	%
Total	41	100%	46	100%	42	100%	41	100%
Unaware	22	54%	42	91%	20	48%	36	88%
Aware	19	46%	4	9%	22	52%	5	12%

Correlation analysis - Additionally, a Pearson correlation analysis was conducted to examine the relationship between awareness of intervention and healthy purchase intention. The analysis revealed a correlation coefficient of $r = 0.336$, $p < 0.001$. This indicates a moderate positive correlation between awareness and healthy purchase intention. Therefore, it can be concluded that as awareness of the intervention increases, the intention to make healthy purchases tends to increase as well.

4.2.3. Effects on Perceived Restorativeness

Main Effects – The variable of perceived restorativeness was measured through 7-point Likert scales by three constructs, which then was analyzed by conducting a two-way ANOVA. This addressed H3, which stated that nature nudges would affect higher perceived restorativeness compared to the absence of the stimuli. Despite some mean differences as seen in Table 5 observed across conditions, these differences were not statistically significant. The results indicated that there was no significant main effect of either nudging $F(1,166) = 0.16$, $p = 0.9$, $n^2 < 0.01$ or boosting $F(1,166)= 3.64$, $p = 0.06$, $n^2 = 0.21$ on perceived restorativeness.

Table 5

Mean comparison of perceived restorativeness by condition

Nudging	**Boosting**	Mean	Std. Deviation	N
Present	Present	5.86	0.87	46
	Absent	5.54	0.88	41
	Total	5.69	0.88	87
Absent	Present	5.79	0.73	41
	Absent	5.58	1.13	42
	Total	5.68	0.95	83
Total	Present	5.82	0.80	87
	Absent	5.56	1.00	83
	Total	5.69	0.91	170

Interaction Effects – Furthermore, the interaction between nudging and boosting was not statistically significant $F(1,166) = 0.17$, $p = 0.68$, n^2=0.01 indicating that the combined effects of these strategies did not significantly influence perceived restorativeness. As the finding did not show significant difference in every condition, it can be inferred that the H3 is rejected.

Correlation Analysis – Despite the insignificant result of the two-way ANOVA, a further exploratory analysis was done using Pearson correlation analysis to examine the relationship between perceived restorativeness and healthy purchase intention. The results showed a Pearson correlation coefficient of $r = 0.084$, $p = 0.27$. This finding indicates a very weak positive correlation between the two variables, and is statistically insignificant. Therefore, it suggests that perceived restorativeness does not have a meaningful linear relationship with healthy purchase intention in this current study.

4.2.4 Effects on the Competence of Choosing Healthier Food

Main Effects – Similarly to the previous dependent variables, a two-way ANOVA was also conducted to explore the effect of different conditions on participants' competence in making healthy food choices in order to examine H4. It was posited that boosting simple dietary guides on the OFD app platforms would result in higher competence (knowledge) compared to conditions without boosting. The analysis reveals significant mean differences as shown in Table 6. This resulted in a significant main effect of dietary guide boosts on competence among participants $F(1,166) = 6.11$, $p = 0.01$, $n^2 = 0.36$. Furthermore, the main effect of nature nudges intervention was not statistically significant $F(1,166) = 0.06$, $p = 0.8$, $n^2 < 0.01$ as expected from what it was hypothesized, therefore, H4 is supported.

Table 6

Mean comparison of competence by condition

Nudging	**Boosting**	Mean	Std. Deviation	N
Present	Present	2.66	0.69	46
	Absent	2.41	0.83	41
	Total	2.53	0.78	87
Absent	Present	2.69	0.90	41
	Absent	2.32	0.82	42
	Total	2.51	0.87	83
Total	Present	2.67	0.80	83
	Absent	2.37	0.82	87
	Total	2.52	0.82	170

Interaction Effects – An interaction effect between nature nudges and dietary guide boost was also observed, resulting that there was no significant interaction effect $F(1,166) = 0.26$, $p = 0.61$, $n^2 = 0.02$. When dietary guide boosts were present, competence value tended to be higher

regardless of the presence of nudging. Thus, it can be concluded that boosts alone could play a significant role in enhancing the competence of the users of the OFD app, and the role of nature nudges in enhancing competence was insignificant, hence the H6 is rejected.

Correlation analysis – An additional analysis, Pearson correlation analysis, was conducted to examine if competence has a positive correlation with healthy purchase intention. The results showed a Pearson correlation coefficient of $r = 0.22$, $p = 0.004$. This correlation coefficient suggests a moderate positive correlation between competence and healthy purchase intention, indicating that as competence increases, healthy purchase intention tends to increase as well.

Subsequently, as it was posited that cognitive function may increase due to higher perceived restorativeness, a Pearson correlation analysis was performed to further explore the relationship between competence and perceived restorativeness. The results indicated $r = 0.19$, $p = 0.01$. These findings suggest a weak but statistically significant positive correlation between competence and restorativeness, meaning that an increase in perceived restorativeness is associated with a slight increase in competence level.

4.2.5 Additional finding: Perceived Knowledge of Healthy Food Choices

This analysis was done in order to support the competence (knowledge) variable, whether the participants have a different perceived knowledge with the variable competence. First of all, the finding showed alignment with competence and it indicates a significant main effect boosting interventions $F(1,166) = 10.95$, $p = 0.001$, $n^2 = 0.62$ on participants' perceived knowledge. However in the nudging condition, as expected there was no significant difference found $F(1,166) = 1.59$, $p = 0.21$, $n^2 = 0.09$. Specifically, the presence or absence of boosting

significantly impacted participants' perceptions of their knowledge levels, while the main effect of nudging did not reach statistical significance.

Correlation analysis – Moreover, the Pearson correlation analysis between perceived knowledge and competence or the real knowledge yields a correlation coefficient of $r = 0.15$, $p = 0.05$. This correlation coefficient suggests a weak positive correlation between perceived knowledge and competence. The positive correlation coefficient indicates that as perceived knowledge increases, competence tends to increase as well. However, the correlation is weak.

4.3 Moderating Effect: Consumers' Health Consciousness

In analyzing the moderating effect of consumers' health consciousness, several steps were undertaken. Firstly, the median score of the variable health consciousness was calculated and was found to be 6. Subsequently, two groups were formed, indicating high and low health consciousness groups of people. Additionally, a two-way ANOVA was conducted to examine the interaction effects.

The main effect of the health consciousness group was significant, $F(1,162) = 4.943$, $p = 0.028$, $n^2 = 0.03$, indicating that individuals with higher health consciousness had significantly higher healthy purchase intentions compared to those with lower health consciousness. However, the interaction between nudge and the health consciousness group was not significant, $F(1,162) = 0.948$, $p = 0.332$, $n^2 = 0.006$. Similarly, the interaction between boost and health consciousness groups was not significant, $F(1,162) = 0.749$, $p = 0.388$, $n^2 = 0.005$. From this analysis, H7 was not supported.

Table 7

Pearson's correlation tests among dependent variables

Variables	Correlation Coefficient (*r*)	*p*
Awareness of Intervention - Healthy purchase Intention	0.34	< 0.001
Perceived Restorativeness - Healthy purchase Intention	0.08	0.27
Perceived Restorativeness - Competence	0.19	0.01
Competence - Healthy purchase Intention	0.22	0.004
Perceived Knowledge - Competence	0.15	0.05
Perceived Knowledge - Healthy purchase Intention	0.34	< 0.001

4.4 Overview Hypotheses

After all the analyses have been completed, the overview of tested hypotheses are presented in Table 8.

Table 8

Overview Hypotheses

Hypothesis		Result
H1	People are more aware of the intention behind boosting interventions but are less aware of the intention behind nudging interventions.	Supported
H2	Exposure to nature nudges on the OFD app platform interface will influence individuals' purchase intention toward healthy food as opposed to the absence of nature nudges.	Rejected
H3	Exposure to nature nudges on the OFD app platform positively will influence perceived restorativeness, as opposed to the absence of nature nudges.	Rejected
H4	Dietary guides boosts on the OFD app platforms will result in competence (knowledge) of how to make healthy food choices as opposed to the absence of dietary guides boosts.	Supported
H5	When nature nudges and dietary guide boosts are presented together, they influence purchase intention in making healthy food choices more effectively than presenting only single or neither approach.	Rejected
H6	When nature nudges and dietary guides boosts are presented together, they enhance competence more effectively than presenting only single independently or neither approach.	Rejected
H7	The nature nudges and dietary guides boosts are expected to be more effective on people with a high level of health consciousness as opposed to a low level of health consciousness in terms of influencing healthy purchase intention.	Rejected

5. Discussion

5.1 Main Findings

This study aims to examine the effects of nature nudges and dietary guide boosts on influencing healthy food choices, particularly within the context of online food delivery (OFD) apps in Indonesia. Additionally, it seeks to explore how these two approaches differ in their effectiveness. A notable gap in previous research is the lack of comprehensive comparisons between these approaches, especially in the context of their combined interventions effects. This research addresses this gap by investigating whether integrating nature nudges and dietary guide boosts can more effectively promote healthy eating habits, supporting the notion of how policymakers should consider the most appropriate approaches depending on contexts (Grüne‐Yanoff & Hertwig, 2017; Rouyard et al., 2022). Prior research shows that nature nudges positively influence healthy diets in physical environments (Pentikäinen et al., 2022; Kim & Magnini, 2016), while informational boosts enhance generalized competence to support decision-making in health domains (Rouyard et al., 2022). However, this study uniquely explores and compares the effects of nudges and boosts in digital environments for promoting healthy food choices.

5.1.1 Effects of Nature Nudges

From H2, it was hypothesized that nature nudges would drive immediate purchase intentions among participants. Although the average number of healthy choices in the nature nudges condition was higher than in the control condition, the stimuli did not show significant effects when compared to the conditions with dietary guide boosts. Although primes in a form of

visual cues are suggested as a way to alter people's options which is commonly used as a nudging approach (Blumenthal-Barby & Burroughs (2012), this current study did not find significant effects when using nature nudges. This also contrasts with previous research findings, where nature nudges could influence healthy choices, although most of these studies were conducted in physical environments (Kim & Magnini, 2016; Michels et al., 2022; Pentikäinen et al., 2022; Twedt et al., 2019). This suggests that merely altering the choice architecture through visual cues might not be sufficient to drive immediate behavior change in digital environments.

One of the reasons to consider is that digital nudges requiring more engaging and interactive elements to be effective (Weinmann et al., 2016). In physical stores, visual cues can create an immersive environment that is harder to replicate online. However, people may experience "banner blindness" in online settings, where users consciously or subconsciously ignore banner-like elements on web pages due to a reason such as trying to find out only relevant information for them at the moment (Benway, 1998). This phenomenon might have led participants to overlook or underappreciated the nature nudges presented to them, specifically the nature banner and symbol that presented to the participants. Moreover, this lack of significance may be due to the nature images in the pre-test being evaluated for their perceived naturalness instead of their perceived healthiness.

Similar to the stimuli effects on purchase intention, nature nudges was perceived to enhance perceived restorativeness. However the result suggested that the digital representation of nature does not effectively evoke the same restorative benefits as physical or immersive experiences of nature (Twedt et al., 2019). The current findings suggest that nature nudges alone may not be sufficient to elicit a restorative effect in an online food delivery context. The effectiveness of nature might be more pronounced in natural settings or when individuals have

direct exposure to nature compared to experiencing it virtually (Mayer et al., 2009). Hence, this might not translate effectively to an online platform such as an app in the current study context.

Although it was expected that perceived restorativeness would be significant in both nudging and combined conditions, the findings did not support this hypothesis. This underscores the complexity of replicating the effects of physical environments on digital platforms. Subsequently, as expected, the nudging condition did not raise participants' awareness that the intervention aimed to promote healthier food choices. This proves the point that nudges lie under libertarian paternalism, which is meant to steer people's choices subconsciously (Hertwig & Ryall, 2019).

5.1.2 Effects of Dietary Guide Boosts

Although, according to Hertwig and Yanof (2017), in the dimensions of boosting and nudging, boosts are not primarily aimed at behavior change but rather at enhancing competence, the direct test on the dependent variable of purchase intention showed that conditions with dietary guide boosts had significant results. Hertwig and Grüne-Yanoff (2017) emphasize that boosting aims to improve individuals' competencies, leading to better decision-making outcomes. Therefore, a correlation test was also conducted to examine whether the level of competence influences purchase intention. The results of this assessment showed a moderate positive correlation coefficient between competence and healthy purchase intention. This also aligns with the notion that boosting provides tools and knowledge to improve decision-making skills (Rouyard, 2022). Thus, the so-called dietary guide boost here played a role as a tool that equipped participants with competence in choosing healthy food options on the OFD app context.

Moreover, the current research finding is also aligned with the notion of boosts as an approach to behavior change that promotes transparency, hence people are expected to be aware of the objective of boosting intervention (Grüne‐Yanoff & Hertwig, 2015). The result supports this notion as in boosting conditions, participants were significantly aware that the intention of the intervention was to promote healthy food choices. This finding is also align with the SH research nature which boosting belongs to that supports the idea that by providing simple heuristics will in turn increase understanding of the intervention (Gigerenzer and Gaissmaier, 2011).

5.1.3 Effects of Combined Intervention

The interaction effect between nudging and boosting on healthy purchase intentions was not statistically significant, suggesting that the combination of these interventions does not produce a significant effect beyond their individual impacts. This answers the research question, which aimed to determine which of the behavioral change approaches could significantly promote healthy eating behavior in the OFD context. It turns out that dietary guide boosts had a more significant impact on promoting a healthier diet. The presence of nudges did not significantly enhance the effect of boosting in influencing healthy eating.

Additionally, the perceived restorativeness effect, expected in the condition with nature nudges also did not show significant results in the combined intervention. This indicates that combining nudges and boosts does not enhance perceived restorativeness beyond the individual effects of each strategy. However, despite the non-significant interaction effects, a correlation analysis between perceived restorativeness and competence showed a significant positive relationship. As restorativeness was expected to influence participants' competence, this

highlight an independent effect of perceived restorativeness since the interaction effect of nature nudges and dietary guide boosts did not enhance competence level of the participants. This finding may be due to the fact that boosts are designed to provide individuals with the necessary tools and knowledge to make better decisions, which may independently improve their competence without harnessing individuals' cognitive deficiency (Hertwig & Grüne-Yanoff, 2017).

Lastly, the interaction effect was similarly non-significant in the combined intervention for the awareness of intervention intention. While boosts significantly increased awareness, adding nudges actually made the effect of boosting non-significant. This aligns with the perspective that boosts primarily operate by enhancing explicit knowledge and skills, whereas nudges function more subtly and subconsciously (Thaler & Sunstein, 2008).

5.1.4 The Moderation Effect of Health Consciousness

Although previous studies which argued that individuals with higher health consciousness will pay more attention to healthy attributes such as visual cues or health claims of a product (Mai & Hoffmann, 2012, Schuldt, 2013), this current research did not align with those findings. The interventions designed to promote healthy purchase intentions through nature nudges and dietary guides did not have a different impact on individuals with different levels of health consciousness. In other words, health consciousness did not moderate the effect of nudging nor boosting.

5.2 Limitations

Several factors may serve as the limitations of this current study. Firstly, the manipulation check showed that participants did not fully recognize the stimuli in either the nudging or boosting conditions. This partial recognition raises questions about the effectiveness of the manipulation. While the interventions had some level of impact, their effectiveness could be limited by participants' awareness. However, it is argued that nudges are supposed to work under the unawareness of individuals with the stimuli, or even still significant even participants were warned that they were being nudged (Marchiori et al., 2017). Hence, this justifies the inclusion of the data regardless of the awareness of the participants to the stimuli.

Additionally, in terms of boosting, despite the intervention's emphasis on transparency, some participants only partially recognized or did not recognize the stimuli. This needs further investigation to understand the reasons behind this partial recognition. Nonetheless, the main effects of competence, the primary dependent variable for the boosting intervention, showed significant improvements compared to the condition without boosting. Therefore, the main effects still notably support that the boosting intervention in this context was effective.

Lastly, one limitation of this study was that the stimuli were not presented in real interactive app mockups. This was due to technical constraints that prevented the mockups from being compatible with various types of mobile phones. Although the mockups were made through a real developing software for mobile app, it could not be operated the way it was planned. Instead, the stimuli were embedded in the research questionnaire, which made the participants' food shopping experience less realistic.

5.3 Practical Implication

While price sensitivity is a significant aspect of consumer behavior in OFD apps (Eu & Sameeha, 2021), this current research suggests that health policy initiatives should extend beyond pricing strategies to promote healthier eating habits. Specifically, OFD apps in Indonesia have primarily focused on promoting food merchants through partnerships but have overlooked strategies to promote healthier choices to their users. Based on the researcher's observation, although the top two most used OFD apps in Indonesia feature a healthy food section, this feature is hidden lower in the interface. Additionally, the foods promoted in this section are not curated by professionals but are instead based on keyword matching. This approach can be risky, as items containing keywords like "fruit" may be included even if they are dishes with fruits as a base but side with sugar, syrups, and other sweet toppings, thus misleading users into believing they are choosing healthier options. Hence, this research gave another option for users of OFD app to opt in choosing healthier options. Especially with the notable effects of dietary guide boost, this kind of intervention could be an option to be deployed in an OFD environment.

Despite the popularity of OFD apps in Indonesia, there is currently no standardized health policy that regulates information or choice environment strategies within these platforms. This absence highlights a critical gap in health policy that needs to be addressed. Although nutritional information was mandated for food consumer goods products, through National Agency of Drug and Food Control's Regulation No. 26 of 2021, however its implementation is limited and has not been implemented for ready or take-away meals. Although it is possible yet takes time to get there, the implementation of this current research might be an alternative of nutrition facts.

The findings from this study show that a simple heuristic campaign can significantly boost individuals' competency in selecting healthier foods within an OFD environment. This

aligns with the objectives of the Indonesian Ministry of Health Regulation PMK No. 41, which emphasizes the importance of balanced nutrition for the population. Educational campaigns that inform users about the benefits of healthy eating and how to make healthier choices can empower consumers and lead to better dietary habits. Moreover, the study also found that the current choice architecture in OFD apps could be improved, as the nature nudges did not produce significant results. This suggests that the design and presentation of choices in these apps need to be reevaluated to find more effective nudging strategies.

5.4 Theoretical Implication

This study contributes to the literature by providing a real experiment that compares nudging and boosting specifically in the digital realm. It is still scarce to find studies that compare and combine these two approaches, especially in the context of promoting healthy eating. this study carefully assessed the dimensions of nudging and boosting and tested these dimensions as the dependent variables (Hertwig & Grüne-Yanoff, 2017).

For the intervention target, nudging aims to drive immediate behavior, which in the context of this study refers to participants' purchase intentions. However, the study did not find this strategy to be significant in steering people's choices as intended. On the other hand, dietary guide boosts successfully increased the initial target of competencies, which in turn had a positive impact on purchase intentions. This study also has normative implications which was found that participants in the nudging condition were not significantly aware of the intervention's objective to steer them towards choosing healthier food, whereas those in the boosting condition were aware. As proponents of boosting argue that it can serve as an alternative to nudges by

promoting transparency and empowering individuals to make better choices through tools and education, rather than exploiting cognitive deficiencies (Hertwig & Ryall, 2019).

Lastly, this current research findings related to nature, add to the growing body of literature on the psychological effects of health interventions. In this context, nature nudges did not enhance the impact of dietary guide boosts. This might be due to the insignificant findings related to perceived restorativeness. The lack of significant outcomes suggests that more immersive or direct nature experiences might be necessary for achieving desired psychological benefits. Thus, nature nudges are not effective in influencing healthy eating behavior or enhancing the effectiveness of dietary guide boosts in a digital context, specifically within OFD apps.

5.5 Conclusion

This study explored the effectiveness of nature nudges and dietary guide boosts in promoting healthy purchase intentions within online food delivery (OFD) platforms. The findings revealed that nature nudges nudes did not significantly influence purchase intentions or perceived restorativeness, likely due to the challenges of replicating immersive physical environments online and the possibility of the stimuli of being ignored due to the digital nature of the intervention context. In contrast, dietary guide boosts had a significant impact on participants' competence that leads to significant healthy purchase intention. Boosting intervention has also enhanced participants' awareness of the intervention's goals answering the current issue of the nudging nature of libertarian paternalism.

The research underscores the importance of health consciousness as a moderator, showing that individuals with higher health consciousness are more inclined to make healthier

choices regardless of the intervention. Moreover, the findings suggest that OFD apps could incorporate informational campaigns using simple heuristics to promote healthier eating habits. The study also highlights the distinct mechanisms of nudges and boosts, advocating for more interactive and engaging digital interventions to effectively influence behavior in digital environments.

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Appendix A: Pre-test material

General card-sorting & FGD board:

https://miro.com/app/board/uXjVKbk8qiU=/?share_link_id=16584923962

Figure 6

Task 1 pre-test material: nature images

Low visual appeal

Medium visual appeal

High visual appeal

Figure 7

Task 2 pre-test material: natural symbols

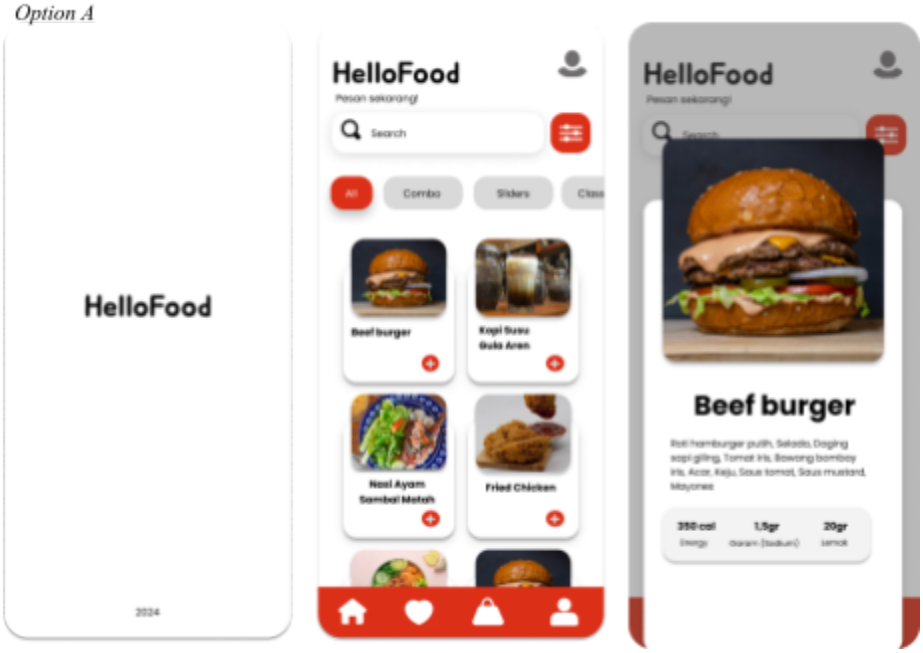
Figure 8

Task 3 pre-test material: dietary guide screen

Figure 9

Task 4 pre-test material: nutritional information screen

Option A



Option B

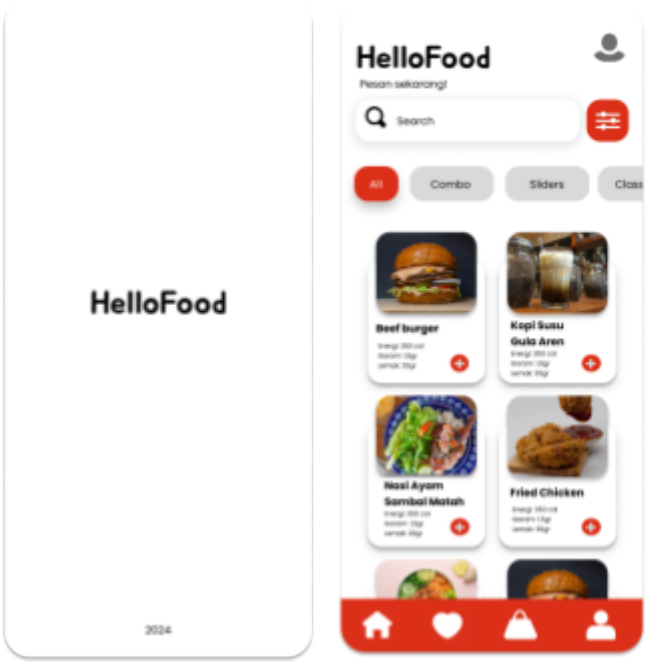


Figure 10

Task 5 pre-test material: food & beverages items

Mains

Drinks

Snacks/Dessert





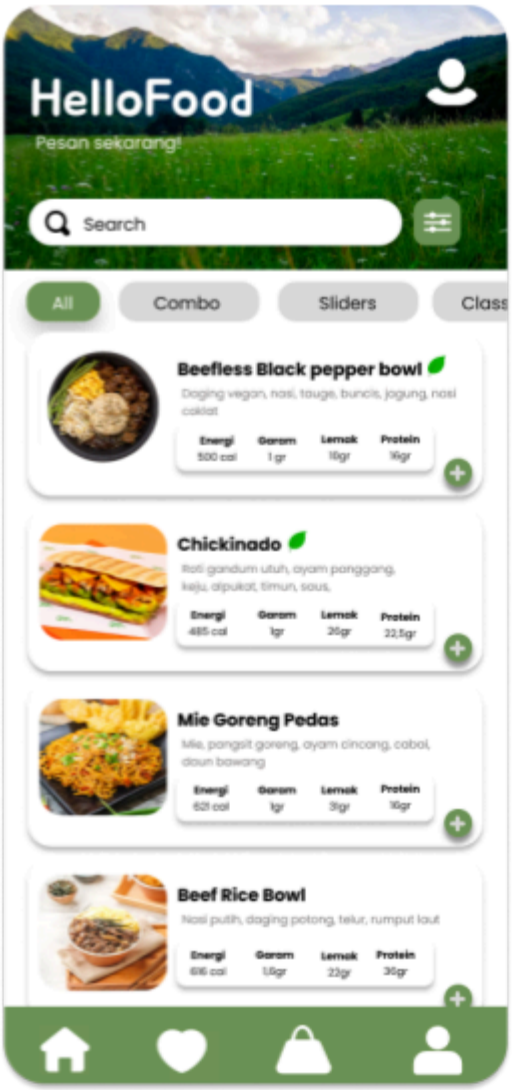


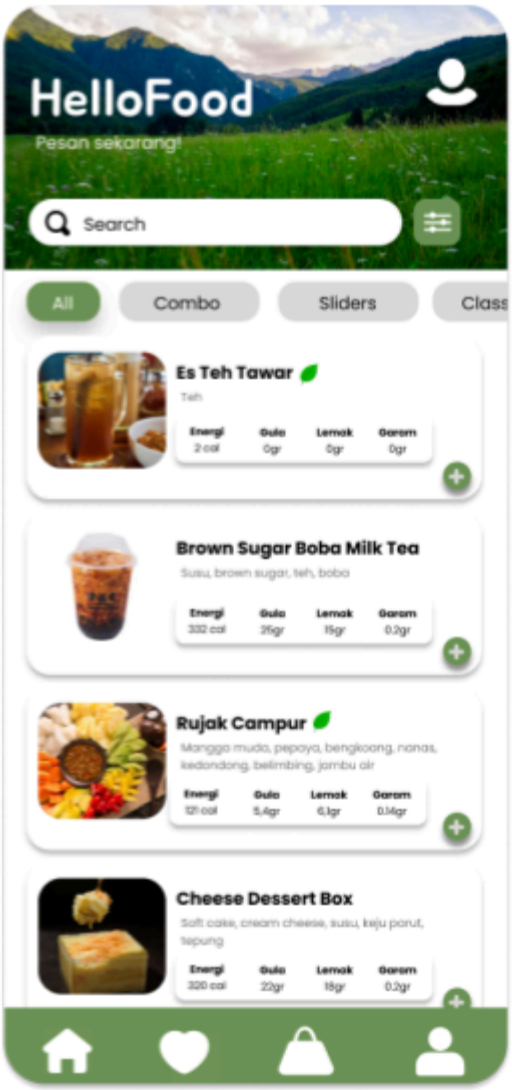

Appendix B: Stimulus Material

Figure 11

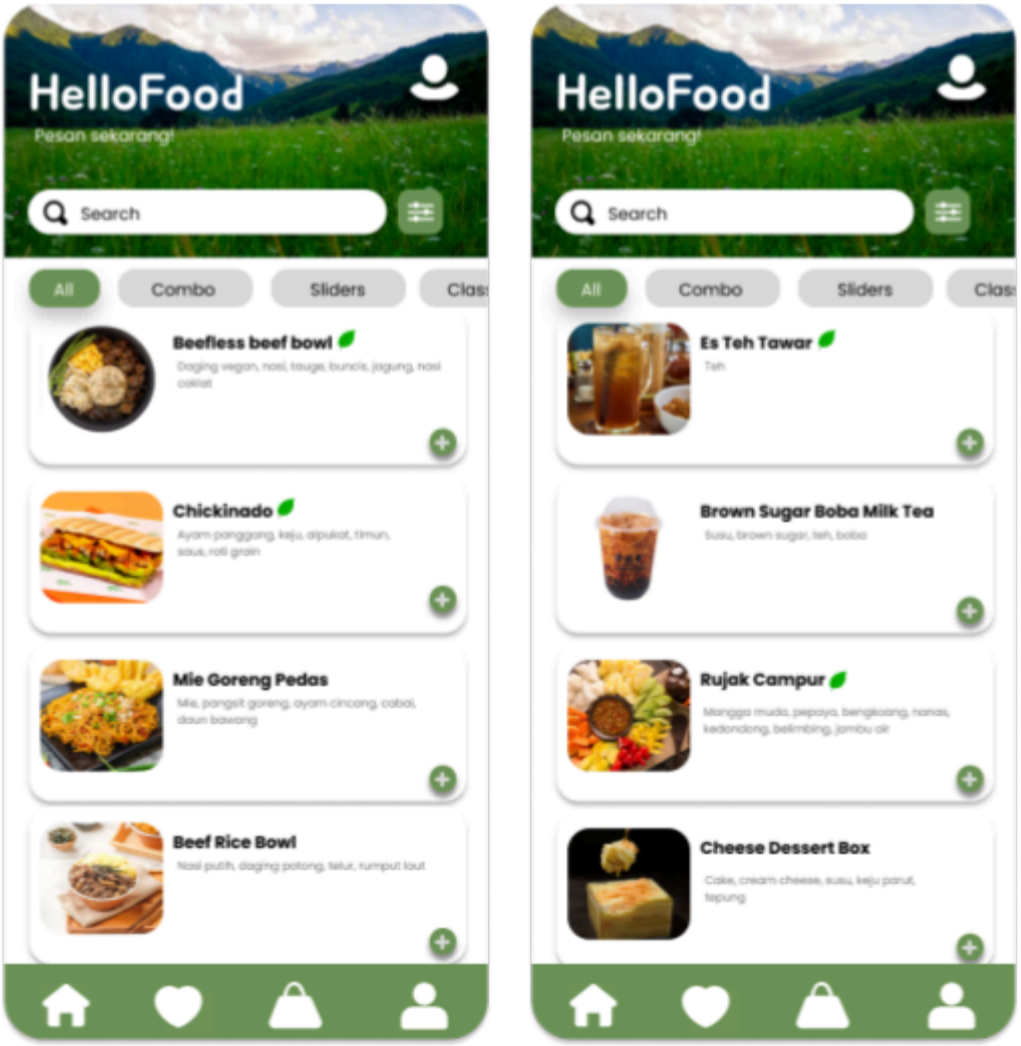
Flow of stimuli

Product page of condition 1

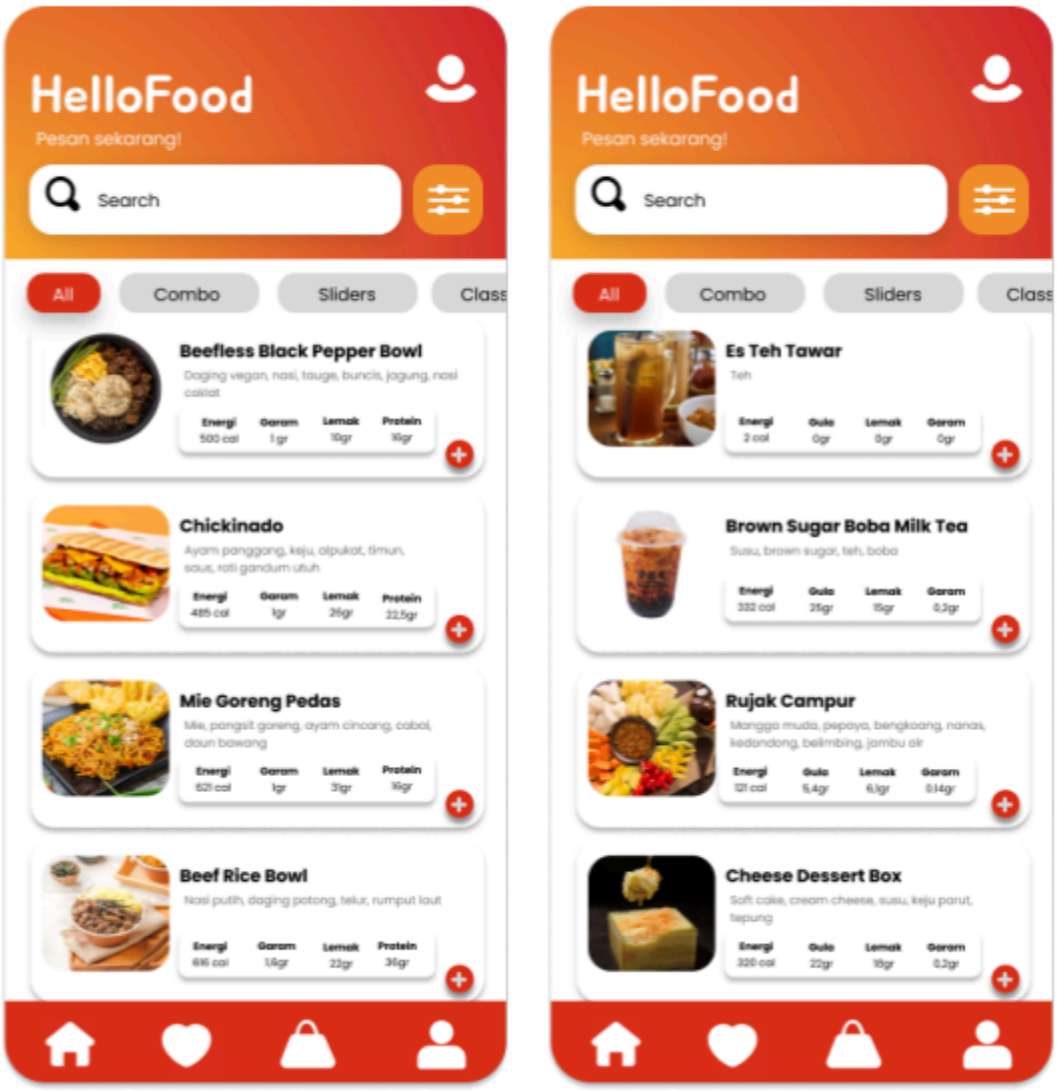




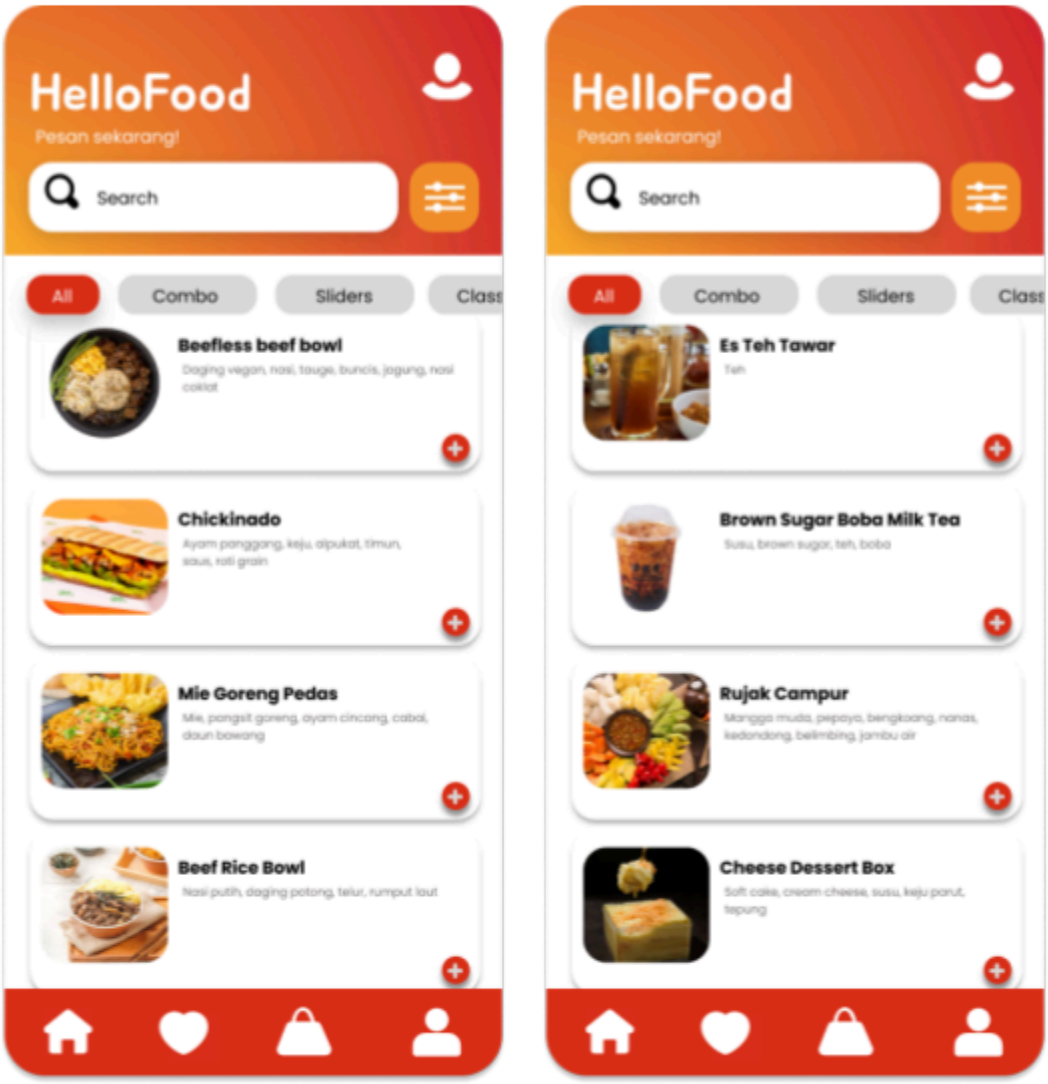
Product page of condition 2



Product page of condition 3



Product page condition 4



Appendix C: Survey Questions

Dear Participant,

Thank you for considering participating in this research. My name is Safira Rivani, and I am currently pursuing a Master's degree in Communication Science at University of Twente.

Within this study, you will be asked to perform a shopping task by choosing one item from the menu list and you will need to answer the questions after. This survey takes up approximately 5-8 minutes to be done.
Potential Risks: There are no physical, legal, or economic risks associated with participating in this study.
Your participation is voluntary, and you may withdraw at any time.
Confidentiality of Data: Your privacy will be protected to the best of our ability.
No confidential information or personal data will be disclosed in any identifiable form.
The research data will be handled anonymously.
Reward: Participants will be randomly selected to receive a MAP voucher worth 200 thousand rupiah per person if they fill out the survey completely and provide personal data in the form of a Whatsapp number or personal email.
Ethical Approval: This research has been reviewed and approved by the ethics committee of the Faculty of Behavioral and Management Sciences of the University of Twente.
Contact Details: If you have questions or concerns about this study or data privacy, please contact the researcher at the email address safirarivani@student.utwente.nl or the Secretary of the Ethics Committee of the Faculty of Behavioral, Management and Social Sciences at the University of Twente at the email address ethicscommittee-hss@utwente.nl

Thank you once again for considering participation in this study.

Sincerely,
Safira Rivani

Consent Form

I am 18 years or older

- (●) Yes, I am over 18 years old
- ( ) No, I am not 18 years or older (you can stop filling out the survey here)

Do you give your consent to take part in this survey?

- ( ) Yes, I agree to participate in this research
- ( ) No, I did not give consent.

I have used an online food delivery service application in Indonesia

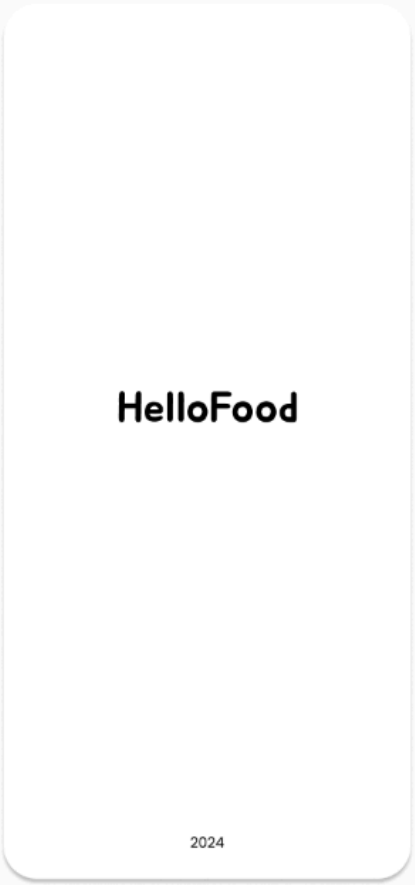
- ( ) Yes, I have used online food delivery service applications in Indonesia
- ( ) No, I have never used an online food delivery service application in Indonesia (you can stop filling out the survey here)

If you agree, please enter an active Whatsapp/email number for digital voucher distribution. This information will be kept separate from research data to maintain the confidentiality of participant data.

Shown Stimuli & Scenario

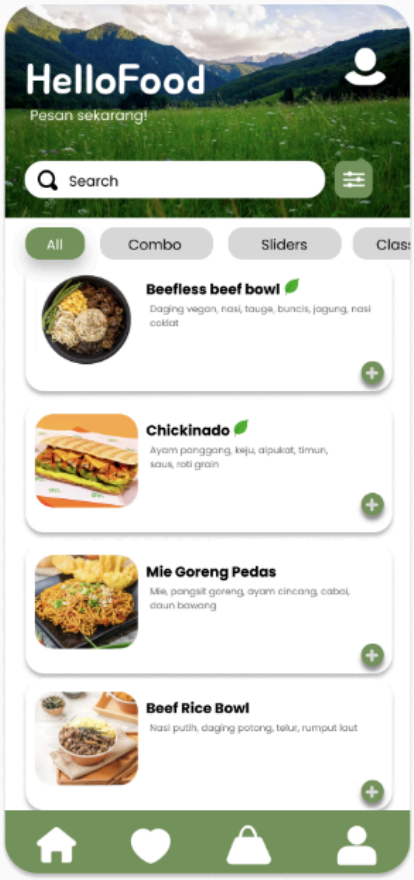
Imagine that it is time for your meal, and you are going to buy some food for yourself to eat. You open the online food ordering application to order the food and drinks you want. You will choose **three items** from the food list for your own consumption.

You open an online food ordering app

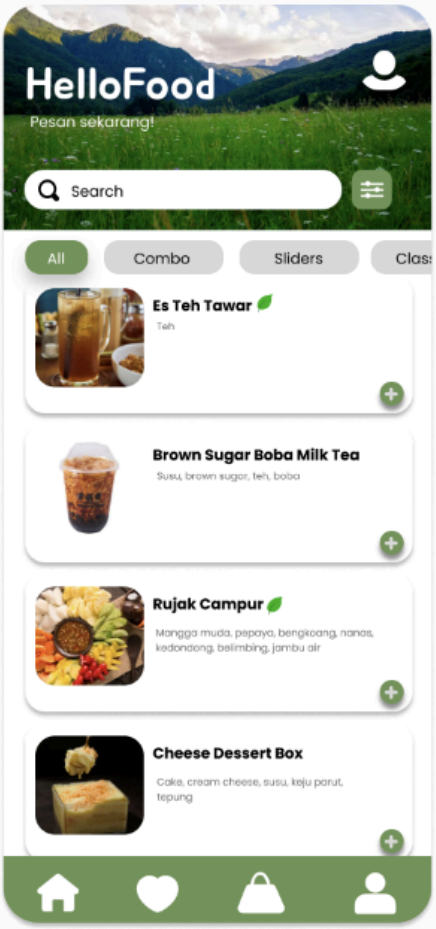


Now you are directed to the cart menu screen below (1/2).

Specify **three items** you want to order!



(2/2)



Purchase Intention Questions

The first item you select


Beefless Black Pepper Bowl


Chikinado


Mie Goreng Pedas


Beef bowl


Es Teh Tawar


Brown Sugar Boba Milk Tea


Rujak Buah Campur


Say Cheese Dessertbox

The second item you select


Beefless Black Pepper Bowl


Chikinado


Mie Goreng Pedas


Beef bowl


Es Teh Tawar


Brown Sugar Boba Milk Tea


Rujak Buah Campur


Say Cheese Dessertbox

The third item you select


Beefless Black Pepper Bowl


Chikinado


Mie Goreng Pedas


Beef bowl


Es Teh Tawar


Brown Sugar Boba Milk Tea


Rujak Buah Campur


Say Cheese Dessertbox

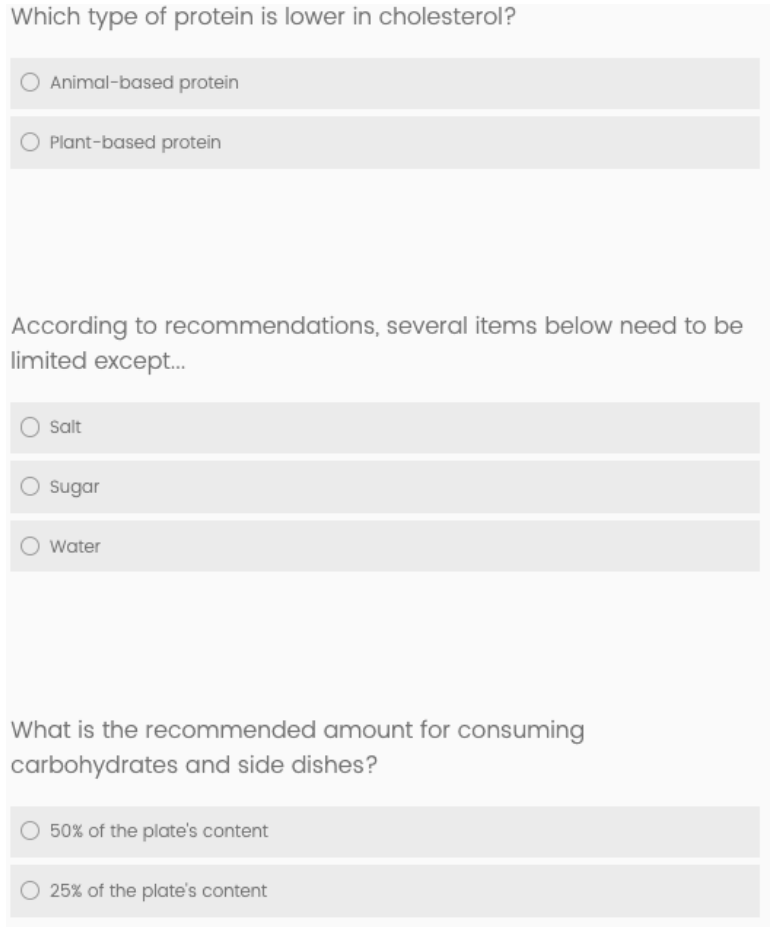
Awareness of Intervention Intention Statement

In my opinion, the app designs I saw were created to...

- increase visual appeal in the eyes of consumers.
- encourage consumers to make healthier food choices.
- increase convenience in ordering food.

Perceived Restorativeness Statements

Competence (Knowledge) Questions



Manipulation Check

Which design elements did you see?

- ○ Banner depicting nature at the top of the product page
- ○ Leaf symbol next to food/beverages items
- ○ I saw both of these items
- ○ I did not see any of these items

Which design elements did you see?

- ○ Balanced Nutrition Guide Screen
- ○ Nutrition information under the food menu
- ○ I saw both of these items
- ○ I did not see any of these items

Perceived Knowledge Statements

Health Consciousness Statements

Demographical Questions

What is your age (e.g., 23)

What gender do you identify with?

- ○ Male
- ○ Female
- ○ Prefer not to disclose

What is the highest level of education you have completed?

- ○ Never been in formal education
- ○ Elementary School (SD/MI/Equivalent)
- ○ Junior High School (SMP/MTS/Equivalent)
- ○ High School (SMA/SMK/MA/STM/equivalent)
- ○ Diploma
- ○ Bachelor
- ○ Master's degree or equivalent level.
- ○ Doctoral degree
- ○ Others

Debriefing

Thank you for your participation in this survey. From the shopping task, you were given a stimulus in the form of an online food ordering service application interface design, and researcher will examine whether the design encourages you to choose healthier items.

Do you agree that we will use your answers for this research analysis?

- ○ Yes, I agree
- ○ No, I do not agree (you can stop here)