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# Nutrition and Nature: Means-End Theory in Crafting Sustainable and Health-Conscious Meal Kit Experiences

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**Abstract:** Meal kits have become increasingly popular as a convenient solution for consumers seeking to prepare high-quality meals at home, falling under the ready-to-cook category. The rising number of subscriptions and the growing presence of companies offering meal kit services illustrate the popularity of this industry. The aims of this study include (a) identifying consumer perceptions of the health and sustainability aspects of meal kit services; (b) exploring how these perceptions influence consumer satisfaction; (c) examining the influence of consumer satisfaction on the intention to repurchase meal kits and recommend them to others; and (d) investigating potential significant differences among meal kit users with dietary, health, and environmental concerns. This exploration encompasses the effects of meal kits' attributes on each group's perceived value, satisfaction, and behavioral intentions. The partial least squares technique was utilized to test the research model using SmartPLS 4. Results of the current study support findings of past research suggesting that consumer perceptions of sustainability and healthiness positively influence their satisfaction and consequently their behavioral intentions. The findings of this study also offer practical implications for meal kit companies. Since consumer satisfaction is significantly influenced by both perceived healthiness and sustainability, companies should re-consider their branding strategies by focusing more on environmentally friendly advertising that makes connections between their attributes.

**Keywords:** meal kit; sustainability; healthiness; consumer behavior



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## 1. Introduction

Since the emergence of COVID-19, dietary habits and the food sustainability of populations worldwide have been greatly influenced [1]. The advantages of online food delivery have become more prominent, making meal preparation easier for consumers and enabling food suppliers to maintain their businesses [2]. There are two different types of online food delivery services: (1) Ready-to-Eat, which requires no preparation or only moderate heat before consumption; and (2) ready-to-cook, which contains minimally prepared raw food items or prepackaged meals that need to be heated up and need some or all components to be fully cooked [3]. Meal kits, falling under the ready-to-cook category, offer consumers a convenient and straightforward way to prepare a range of restaurant-quality meals at home [4]. The popularity of meal kit services is evident through the growth in subscriptions to these services and the multitude of companies offering these services [5]. Global meal kit revenue is projected to exceed USD 25 million by 2027 [6]. Approximately one-seventeenth of Americans have subscribed to these services, with a striking 90% recommending the ones they use [7]. Key players like Blue Apron and HelloFresh have reported substantial increases in global sales, with HelloFresh doubling its U.S. customer base and experiencing a 66% revenue boost year-over-year [6]. Notably, the adoption of meal kits varies across generations, with 26% of Generation X and 29% of millennials trying them, compared to only 12% of baby boomers and older cohorts [8]. This diverse adoption pattern emphasizes the need to cater to distinct demographic preferences within the thriving meal kit market.

Customers are believed to enjoy various meal kits' benefits, including perfect portions, fresh ingredients, less wasted food, healthy options, less hassle, cost savings, and novelty [9]. In addition to providing the habit of cooking at home instead of ordering fast food, most meal kit services promote family-friendly and specialty diet options on menus such as organic, vegetarian, vegan, and low-calorie meals [6]. Efforts to promote healthy eating within family settings are on the rise [10], with interventions focusing on the home environment. They target reducing healthcare costs by encouraging healthier eating habits, specifically addressing preventive health measures [11]. Additionally, there is an emphasis on fostering adolescent food preparation skills, aiming to empower young individuals with the ability to prepare nutritious meals [12]. Lastly, these interventions promote healthier at-home food preparation by providing resources and support, fostering an environment conducive to sustaining nutritious cooking practices [13]. In line with prior research findings and the growing emphasis on fostering healthy behaviors, a current study by Conroy et al. (2023) [14] reinforces the importance of making healthy food choices as a key element in facilitating behavior change.

While meal kit delivery services have been debated for their environmental impact, particularly in terms of packaging waste [15], to fully grasp the sustainability of meal kit delivery services in comparison to traditional food procurement methods, it is essential to consider the entire food supply chain from production to consumption. This comprehensive perspective allows for a thorough assessment of their environmental impact. In addition to being a novel physical product, meal kits represent a disruptive force in the conventional grocery shopping experience for U.S. consumers, effecting systemic change. Recognized as transformative technology [16], meal kits introduce both direct changes to meals, such as pre-portioning and packaging ingredients, and indirect changes to the food supply chain, delivering food directly to households instead of relying on traditional grocery store retailing followed by consumer transportation. Contrary to common perception, research by Heard et al. (2019) [17] challenges the notion that meal kits have more adverse environmental effects. Their study suggests that meals sourced from grocery stores often exhibit higher life cycle environmental impacts than those from meal kits. Notably, meal kits have emerged as valuable tools for reducing food waste, supporting sustainable sourcing, and potentially lowering the carbon footprint compared to equivalent meals purchased from grocery stores [17]. These past studies have provided interesting insight into the more technical aspects of meal kits' sustainability, and healthiness; however, they have not truly assessed consumer perceptions of these aspects and the influence of those perceptions on purchase behavior.

The hospitality literature extensively explores the product attributes and perceived values associated with meal kits. Prevailing research on meal kit services has primarily delved into hedonic and functional values [18], as well as social and mental values [19]. Consumers' perceptions of product attributes play a crucial role, serving as reflections of their values, preferences, and purchasing frequency [20]. Relatedly, the decision-making process in choosing products or services is intimately connected to consumers' desired value, as these products contribute to the realization of their goals [21]. Consequently, consumers may choose meal kit services with the intention of leading a healthy and environmentally friendly lifestyle. Considering this, the present study establishes a conceptual framework by adopting the means-end theory. The aims of this study include (a) identifying consumer perceptions of the health and sustainability aspects of meal kit services; (b) exploring how these perceptions influence consumer satisfaction; (c) examining the influence of consumer satisfaction on the intention to repurchase meal kits and recommend them to others; and (d) investigating potential significant differences among meal kit users with dietary, health, and environmental concerns. This exploration encompasses the effects of meal kits' attributes on each group's perceived value, satisfaction, and behavioral intentions.

## 2. Literature Review

### *2.1. Meal Kits*

Between 2014 and 2018, sales in the food delivery industry in the United States increased significantly [22]. The dramatic growth of the food delivery industry is illustrated by the fact that the annual sales of this service exceeded USD 30 billion in 2015 [23]. However, the foodservice industry has encountered new barriers and difficulties since the COVID-19 pandemic. The pandemic has resulted in unique foodservice sector practices and has significantly changed household food behaviors. These issues, along with concerns about the health and safety of the dining experience, have resulted in changes in consumer behavior regarding dining out. In addition to healthcare, the food industry is recognized as one of the businesses that has been significantly impacted [24]. During the COVID-19 pandemic, individuals are actively pursuing nutritious food options and embracing precautionary ways to prevent viral transmission. Consequently, there has been a notable increase in the consumption of meal kits, online food orders, home meal replacements, takeout, and drive-through services [25]. Thus, certain segments of the dining service sector, such as chef-produced home meal kits, have emerged as new opportunities [26].

As noted previously, the food delivery service can be classified into two distinct categories: Ready-to-Eat (RTE) and ready-to-cook (RTC). RTE foods are those that can be consumed without any preparation or with minimal heating before consumption; on the other hand, RTC foods include prepared meals that only need to be reheated or partially prepared raw food ingredients that have been trimmed, shelled, peeled, cut, and washed [3]. However, Costa et al. (2001) [3] claim that RTC foods still require complete cooking of some or all of their components. One representative type of the RTC category is called 'meal kits', which refer to a subscription-based service that is commercially accessible, wherein households receive recipes and the required, predominantly fresh, pre-measured or pre-portioned ingredients. The meal kit concept posits that it mitigates the burden associated with determining dinner options and enables consumers to skip the process of meal planning and grocery shopping. In 2021, the cook-and-eat (also known as ready-to-cook) segment dominated the market for meal kit services, accounting for 60.7% of total revenue [6]. The dominance is attributable to the appeal of gourmet-style, home-cooked food among young people. Besides that, it allows meal kit users to cook new recipes and gourmet or chef-signature dishes without paying additional costs at restaurants.

### *2.2. Consumers' Perceptions of Sustainability and Healthiness*

Research studies have indicated that consumer needs can be satisfied by considering the various attributes of a product, both tangible and intangible [27]. These product attributes encompass benefits, functions, and other features. Thus, it is more valuable to focus on understanding why consumers choose products based on their specific attributes rather than solely comparing the products themselves [28]. Meal kits have gained considerable popularity as a type of food delivery service that offers RTC products [29]. According to Giuffrida (2019) [30] consumers believe that meal kits can provide high-quality food with fresh ingredients and gourmet recipes, resembling the taste of restaurant-quality dishes. In recent years, there has been a growing consumer demand for healthier eating options [31]. When considering this phenomenon, several meal kit companies use extensive marketing strategies to appeal to health-conscious consumers by emphasizing their use of organic, antibiotic-free, and environment-friendly products [32], alongside their offerings of low-calorie and diet-friendly alternatives. Not only can meal kits provide health-promoting diet options, but they can also contribute to a reduction in food waste and promote sustainable practices [33]. Additionally, findings show that "meal kits' streamlined and direct-to-consumer supply chains, reduced food waste, and lower last-mile transportation emissions appear to be sufficient to offset observed increases in packaging" ([17], p. 189). Ultimately, the decision of which meal kit service to choose will depend on consumers' personal preferences, such as being open to discovering new dishes, their dietary considerations, and their care for the environment. Along these lines, the last

three product attributes that act as stimuli and have an impact on customers' perceived values are "perceived sustainability" and "perceived healthiness".

The concept of "customer satisfaction" has been widely discussed in the field of marketing for many years. It is believed that satisfied customers can bring long-term advantages to companies, such as customer loyalty and sustained profitability [34]. Food can be a source of both satisfaction and dissatisfaction in daily life [35], but it can also contribute to overall satisfaction through cultural and social aspects, such as sharing meals with loved ones or experiencing new cuisines. People are increasingly concerned about whether their eating habits are unhealthy and may have negative effects on themselves and society, leading to attempts to change the way they eat. It may be used in cross-sectional and intervention studies to analyze several factors that influence how satisfied people are with their lives around food [35]. It may be helpful for those engaged in the food procurement process as well, giving them a way to track if their efforts are improving people's quality of life through how satisfied they are with their lives around food [35]. Thus, the following hypotheses were developed:

**H1.** *Perceived sustainability has a positive influence on consumers' satisfaction.*

**H2.** *Perceived healthiness has a positive influence on consumers' satisfaction.*

### *2.3. Consumers' Satisfaction and Their Behavioral Intentions*

Behavioral intention defines the degree to which an individual has consciously developed plans to take part in or refrain from any specific behavior in the future [36]. Based on the theory of reasoned action proposed by Ajzen and Fishbein (1975) [36], behavioral intention is regarded as the motivating aspect of volitional behavior and has a strong correlation with actual behavior [37]. While there remains an ongoing discussion on the extent of the relationship between behavioral intentions and actual behavior, there is a prevailing acceptance that behavioral intention serves as a viable predictor of future behavior [38]. Therefore, gaining a deep understanding of the factors influencing post-dining behavioral intentions, such as positive word-of-mouth about the meal experience, recommending it to others, and repeat purchases, can provide valuable insights for the food industry.

Furthermore, customer satisfaction is a key antecedent of post-purchase behavioral intentions, as it positively influences a customer's attitude towards a product or service, reinforcing their conscious effort to purchase it again in the future [39]. Since behavioral intention pertains to individuals' beliefs about their intended actions within a certain situation [36] and specific indicators of behavioral intentions include intention to recommend and repurchase [40], the current study focuses on assessing customers' positive behavioral intentions, which include repurchase and word-of-mouth toward meal kit experiences. Thus, the following hypotheses were developed:

**H3.** *Consumers' satisfaction with meal kits has a positive influence on their repurchase intentions about meal kits.*

**H4.** *Consumers' satisfaction with meal kits has a positive influence on their intentions to spread positive WOM about meal kits.*

### *2.4. Moderating Variables*

In this study, the means-end theory [41] served as a foundational theoretical framework to explain the impact of motivational factors on behavioral intentions specifically related to meal kits. The theory indicates that consumers' decision making in selecting products or services is intricately linked to the value they seek, considering the product or service as a means to attain their goals [21]. Consequently, a customer may prefer meal kits as a means to achieve a desired goal, such as the pursuit of a sustainable and health-conscious lifestyle.

The demand for environmentally friendly food has been steadily increasing over the past few decades [42]. Sustainable food consumption is defined as ensuring the access to and utilization of food for all present and future generations in ways that are economically, socially, and environmentally sustainable [43]. The marketability of sustainable food has led to a surge in demand for various green and eco-friendly foods [43]. Within this context, a specific consumer group known as Lifestyle of Health and Sustainability (LOHAS) consumers has emerged in the foodservice industry. LOHAS consumers focus on promoting a lifestyle that prioritizes health and sustainability by supporting the production of local and organic foods [44]. These consumers are not only environmentally conscious but also prioritize healthy food choices, preferring restaurants that adopt eco-friendly practices and provide naturally healthy food [45]. The results presented in the paper by Kim et al. (2012) [46] indicate that professionals in the food industry should prioritize promoting light and healthy food choices, utilizing organic ingredients, and employing healthy cooking methods. This emphasis is crucial for building customer trust, ultimately leading to an increased likelihood of customers revisiting and recommending the establishment through positive word-of-mouth. Hence, it would be beneficial to explore whether there are significant differences between groups of individuals with distinct concerns, such as dietary, health, and environmental considerations, and those who do not prioritize these aspects as much as LOHAS consumers. Investigating such variations could provide valuable insights into the specific needs and preferences of different consumer segments within the context of meal kits and sustainable food choices. This approach aligns with the means-end theory's emphasis on recognizing the intricate links between consumers' decision making and the values they seek, particularly concerning the pursuit of sustainable and health-conscious lifestyles. Thus, the following hypotheses were developed:

**H5.** *The relationship between (a) perceived sustainability and satisfaction, (b) perceived healthiness and satisfaction, (c) satisfaction and repurchase intention, (d) satisfaction and word-of-mouth will be stronger for consumers with dietary concerns.*

**H6.** *The relationship between (a) perceived sustainability and satisfaction, (b) perceived healthiness and satisfaction, (c) satisfaction and repurchase intention, and (d) satisfaction and word-of-mouth will be stronger for consumers with high health concerns.*

**H7.** *The relationship between (a) perceived sustainability and satisfaction, (b) perceived healthiness and satisfaction, (c) satisfaction and repurchase intention, and (d) satisfaction and word-of-mouth will be stronger for consumers with high environmental concerns.*

## 3. Materials and Methods

### *3.1. Data Collection and Analysis*

To assess the hypothesized model in Figure 1 above, a self-administered online survey questionnaire was distributed to an online panel of U.S.-based consumers affiliated with Prolific crowdsourcing marketplace. The Prolific platform was determined to be an appropriate sampling frame for multiple reasons. Using crowdsourcing communities such as Prolific to recruit participants offers potential strengths such as high reliability, low dropout, a fast response rate, and a diverse sample profile [47]. The average time to complete the questionnaire was 12 min and respondents were paid USD 2 for their time. To ensure the survey's validity, this study conducted a pilot survey with 75 respondents. The respondents' feedback and comments had been incorporated in the survey to enhance the instrument's readability. The main study employed self-selection sampling as the sampling method, since participants voluntarily chose to take part in this research. For data quality reasons, respondents who did not complete the survey or failed the response check questions were excluded from the final dataset. Consequently, a total of 188 valid responses were utilized for the further analysis. All the measures were rated using a 7-point Likert

scale (1 = "strongly disagree" and 7 = "strongly agree"). The partial least squares technique was utilized to test the research model using SmartPLS 4.

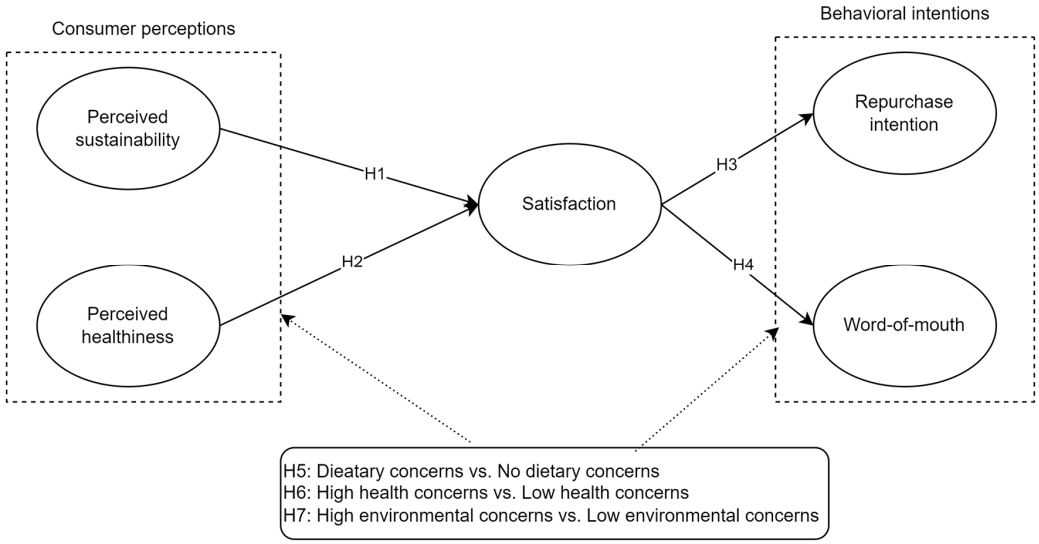


**Figure 1.** Research framework.

### *3.2. Measures*

A comprehensive literature review was conducted to develop the survey questionnaire. To measure 'perceived sustainability', four items were adopted from [48,49]. Four items were adopted from [18] to assess 'perceived healthiness'. To assess 'satisfaction', five items were adapted from [50]. The last section of the survey instrument was designed to measure consumers' intention to spread 'word-of-mouth' [51] using three items and 'repurchase intention' utilizing three items, each adapted from [51,52], respectively. The final part of the survey instrument was developed to collect information regarding participants' basic demographics: generation, gender, ethnicity, education level, and annual income.

## 4. Results

### *4.1. Characteristics of the Study Sample*

The descriptive results are summarized in Table 1. The results indicate that 52% of the respondents were female, with a majority (almost 60%) having at least a degree with 19% earning between USD 50,000 and USD 74,999.

**Table 1.** Descriptive Statistics.

| Demographic Characteristics | Frequency | % |
|---|---|---|
| Gender | | |
| Female | 98 | 52.12 |
| Male | 90 | 47.88 |
| Educational level | | |
| High school | 23 | 12.2 |
| Some college, but no degree | 51 | 27.1 |
| Associate's or technical degree | 24 | 12.8 |
| Bachelor's degree | 64 | 34.0 |
| Master's and above | 26 | 12.8 |
| Income range | | |
| Below USD 25,000 | 33 | 17.6 |
| USD 25,000–USD 49,999 | 40 | 21.3 |
| USD 50,000–USD 74,999 | 36 | 19.1 |
| USD 75,999–USD 99,999 | 24 | 12.8 |
| USD 100,000–USD 149,999 | 33 | 17.6 |
| USD 150,000 or more | 17 | 9.0 |
| Prefer not to say | 5 | 2.7 |

### *4.2. Measurement Model Assessment*

Partial least squares (PLS) was chosen in this study to evaluate the proposed hypotheses, given its efficacy in analyzing models with non-normal data. Additionally, Ali et al. (2018) [53] highlighted PLS as a superior tool for conducting a multi-group analysis (moderation) and theory validation, making it the preferred analytical method for this research.

Utilizing Kock's (2015)Kock's [54] methodology, this study assesses the potential common method bias. The results presented in Table 2 indicate that, following a comprehensive collinearity examination, the variance inflation factors (VIFs) within the internal models are below the 3.3 limit. This implies that, based on Kock's (2015) [54] criteria, the model is free from common method bias.

**Table 2.** Common Method Bias (Inner VIF).

| Variables | Inner VIF |
|---|---|
| Perceived sustainability value (PS) | 1.32 |
| Perceived healthiness value (PH) | 1.32 |
| Satisfaction (SA) | 1.00 |

Note. VIF = variance inflation factor.

The assessment of the measurement model hinges on the quality of individual constructs included in the model. The criteria for quality were evaluated through factor loadings, subsequently followed by the examination of construct reliability and construct validity. Factor loading, as defined by [55] (p. 299), pertains to "the extent to which each of the items in the correlation matrix correlated with the given principal component". In this study, one item in perceived sustainability value, one item in satisfaction, and one item in repurchase intention had factor loadings less than the recommended value of 0.70 [56] and were removed (see Table 3). According to Hair et al. (2023) [56], if the VIF value remains below 5, multicollinearity is not considered a concern. The VIF values for each indicator in this study remained beneath the suggested threshold. Reliability, defined as "the extent to which a measuring instrument is stable and consistent" [57] (p. 285), was assessed using Cronbach's alpha statistics and an average variance extracted (AVE) analysis. Both indicators demonstrated reliability statistics surpassing the required threshold of 0.70, as outlined by [56]. The findings for factor loading, VIF, Cronbach's alpha, composite reliability, and AVE are detailed in Table 3.

**Table 3.** Factor Loadings, Multicollinearity Statistics (VIF), and Construct Reliability Analysis.

| Variables | Factor Loadings | VIF | Cronbach's $\alpha$ | Composite Reliability | AVE |
|---|---|---|---|---|---|
| Perceived sustainability value (PS) | | | 0.827 | 0.896 | 0.743 |
| PS_1 | 0.885 | 2.634 | | | |
| PS_2 | 0.788 | 1.479 | | | |
| PS_4 | 0.909 | 2.57 | | | |
| Perceived healthiness value (PH) | | | 0.806 | 0.889 | 0.63 |
| PH_1 | 0.811 | 2.604 | | | |
| PH_2 | 0.796 | 2.661 | | | |
| PH_3 | 0.817 | 1.663 | | | |
| PH_4 | 0.748 | 1.408 | | | |
| Satisfaction (SA) | | | 0.901 | 0.931 | 0.772 |
| SA_2 | 0.828 | 2.111 | | | |
| SA_3 | 0.907 | 3.247 | | | |
| SA_4 | 0.878 | 3.262 | | | |
| SA_5 | 0.899 | 3.178 | | | |
| Repurchase intention (RI) | | | 0.894 | 0.934 | 0.825 |
| RI_1 | 0.897 | 2.376 | | | |
| RI_2 | 0.899 | 2.809 | | | |
| RI_3 | 0.929 | 3.599 | | | |
| Word-of-mouth (WO) | | | 0.783 | 0.873 | 0.697 |
| WO_1 | 0.877 | 1.879 | | | |
| WO_2 | 0.781 | 1.526 | | | |
| WO_3 | 0.844 | 1.638 | | | |

Note. VIF = variance inflation factor; AVE = average variance extracted.

Discriminant validity pertains to how distinct measures of different constructs are. If two or more concepts in the model are distinct, valid measures of each should not exhibit excessively high correlations [58]. The Heterotrait–Monotrait Ratio (HTMT) was employed to test discriminant validity. According to HTMT, discriminant validity is confirmed when the HTMT ratios for the constructs are below the specified threshold of 0.90 [59]. The HTMT ratios in this study met the threshold, as detailed in Table 4.

**Table 4.** Discriminant Validity (Heterotrait–Monotrait Ratio).

| Variables | PH | PS | RI | SA | WO |
|---|---|---|---|---|---|
| Perceived healthiness value (PH) | | | | | |
| Perceived sustainability value (PS) | 0.624 | | | | |
| Repurchase intention (RI) | 0.423 | 0.445 | | | |
| Satisfaction (SA) | 0.401 | 0.452 | 0.843 | | |
| Word-of-mouth (WO) | 0.480 | 0.575 | 0.81 | 0.802 | |

### *4.3. Structural Model and Multi-Group Analysis*

The structural results of the model with the standardized path coefficient are presented in Table 5. As a result of the structural model, the first four hypotheses were supported at $p < 0.05$. Results showed that 'perceived sustainability' ($\beta = 0.323$, $p < 0.01$) and 'perceived healthiness' ($\beta = 0.158$, $p < 0.05$) were found to have a significant and positive effect on satisfaction value. Moreover, perceived sustainability and healthiness explain 17% of variance in satisfaction ($R^2 = 0.174$). Satisfaction was also found to have a significant and positive effect on both repurchase intention ($\beta = 0.764$, $p < 0.01$) and word-of-mouth ($\beta = 0.681$, $p < 0.01$). Satisfaction value explains 58% of variance in repurchase intention ($R^2 = 0.582$) and 46% variance in word-of-mouth ($R^2 = 0.461$). To test the moderating role of dietary, health, and environmental concerns, this study used a permutation algorithm to check whether significant differences in constructs existed between the two groups (dietary vs. non-dietary, high health concerns vs. low health concerns, and high environmental vs. low environmental concerns).

**Table 5.** Results of Path Relationships.

| Path Relationships | β Coeff. | T-Statistics | *p* Values | Results |
|---|---|---|---|---|
| H1: Perceived sustainability value → Satisfaction | 0.323 | 4.145 | 0.000 * | Supported |
| H2: Perceived healthiness value → Satisfaction | 0.158 | 2.145 | 0.032 ** | Supported |
| H3: Satisfaction → Repurchase intention | 0.764 | 25.388 | 0.000 * | Supported |
| H4: Satisfaction → Word-of-mouth | 0.681 | 14.78 | 0.000 * | Supported |

* $p < 0.01$. ** $p < 0.05$.

To test Hypotheses 5a–d, this study sample was divided into two groups: dietary concerns (n = 61) and non-dietary concerns (n = 127). To assess the hypothesized moderating effects of health concerns (Hypotheses 6a–d) and environmental concerns (Hypotheses 7a–d), prior to running the multi-group analyses, two separate two-step cluster analyses were conducted [60] to determine the grouping of respondents based on those factors. The first analysis revealed two groups based on heath concerns, and the first group comprised 107 (56.9%) respondents and was labeled 'low'; the second group comprised 81 (43.1%) respondents and was labeled 'high'. The second analysis revealed two groups based on environmental concerns, and the first group comprised 75 (39.9%) respondents and was labeled 'low'; the second group comprised 113 (60.1%) respondents and was labeled 'high'. To ensure that the measurement model provides meaningful results for the moderation analyses, several tests for multiple measurement invariance were performed to assess metric invariance in the measurement model. According to Henseler et al. (2016) [59], compositional invariance was not established for both dietary and health concerns' moderations; hence, the structural model was considered as not suitable for conducting the multi-group

analysis. The multi-group analysis results of environmental concerns showed that there were no statistically significant differences found between groups. Hence, Hypotheses 7a–d were not supported.

## 5. Discussion

In this study, the means-end theory [41] was used as a fundamental theoretical framework to analyze the influence of motivational factors on behavioral intentions, particularly in the context of meal kits. This theory posits that consumers' decision-making processes in choosing products or services are closely tied to the values they prioritize, viewing the product or service as a means to fulfill their objectives [21]. Therefore, consumers may opt for meal kits as a strategy to accomplish specific goals, such as striving for a sustainable and health-conscious lifestyle. The primary objective of this study was to investigate potential disparities among individuals with varying concerns, including dietary, health, and environmental considerations, in contrast to those who do not prioritize these aspects as prominently as LOHAS consumers. This approach is in line with the means-end theory's focus on acknowledging the intricate connections between consumers' decision-making processes and the values they uphold, particularly regarding the pursuit of sustainable and health-conscious lifestyles. With the increasing demand for meal kits in today's foodservice industry, researchers need to identify the key drivers that lead LOHAS consumers to choose them. Results of the current study support findings of past research suggesting that consumer perceptions of sustainability and healthiness positively influence their satisfaction and consequently their behavioral intentions (i.e., H1–H4). However, given the low predictability of the structural model, particularly the relationships between perceived sustainability, perceived healthiness, and satisfaction, it is apparent that there are other aspects of the meal kit experience that are more influential on consumer satisfaction. Future studies should further consider aspects that have been highlighted by Cho et al. (2020) [18], such as menu variety, novelty, food quality, and convenience, along with sustainability and healthiness, to determine which items are most impactful on consumer satisfaction and behavioral intentions. Future studies may also consider a longitudinal approach to determine if the influence of various aspects of the meal kit experience on consumer satisfaction/behavioral intention changes over time.

As such, the findings of this study also offer practical implications for meal kit companies. Since consumer satisfaction is significantly influenced by both perceived healthiness and sustainability, companies should re-consider their branding strategies by focusing more on environmentally friendly advertising that makes connections between their attributes. By highlighting the use of sustainable ingredients and ethical farming methods, meal kit companies can further enhance their social value and appeal to environmentally conscious customers. By providing consumers with clear and accessible information about the origins of ingredients and the overall production process, companies can cultivate a sense of trust. This transparency not only aligns with the growing consumer demand for sustainability but also reinforces the perceived healthiness of the meal kit offerings. Furthermore, weaving these environmentally conscious practices into the brand narrative can be a powerful storytelling tool. Companies can leverage their commitment to sustainability as a distinctive feature in marketing materials and promotional campaigns. This not only differentiates them in a competitive market but also resonates with consumers who prioritize both health-conscious choices and sustainable lifestyles.

## 6. Conclusions

Previous research on meal kits has primarily examined their environmental and dietary attributes, offering valuable insights into their sustainability and healthiness from a technical standpoint. However, these studies have often overlooked an essential aspect: consumer perceptions and their influence on purchasing behavior. In contrast, this study focuses specifically on understanding how consumers' perceived healthiness and sustainability affect their satisfaction with meal kits. To target meal kit users who exclusively

prefer ready-to-cook options, we employed convenience sampling from an online consumer panel. While convenience sampling is known for its ability to capture geographically representative samples, future studies should consider employing more rigorous and scientific sampling methods to enhance the robustness of the findings. Moreover, our dataset's limited representativeness, compounded by our narrow focus on meal kit subscribers, especially those associated with specific brands, presents challenges in generalizing our findings to a broader population. Addressing these limitations in future research will be crucial for obtaining a more comprehensive understanding of consumer perceptions and behaviors regarding meal kits. Despite these limitations, our study offers valuable insights for meal kit companies aiming to enhance consumer satisfaction and loyalty. By emphasizing their sustainability efforts and promoting transparent sourcing practices, companies can align themselves with the values of environmentally conscious consumers, thereby strengthening their brand image and competitiveness in the market.

LOHAS consumers has emerged in the foodservice industry, emphasizing health and sustainability by supporting local, organic, and low-carbon foods. LOHAS consumers are environmentally conscious and prefer eco-friendly practices and naturally healthy food. Prior research emphasizes the importance of promoting light, healthy food choices, organic ingredients, and healthy cooking methods to build customer trust and encourage positive word-of-mouth. This study investigated differences among consumer groups based on their dietary preferences, health priorities, and environmental concerns to provide valuable insights into the preferences of different consumer segments regarding meal kits and sustainable food choices. Although the multi-group analyses indicated concerns with compositional invariance for two sets of groups, while showing no significant differences between the third group, future studies should consider focusing specifically on particular groups of consumers (i.e., specific dietary concerns—vegan only, gluten-free only, keto only, etc.). The current study sought to look at dietary concerns from a general standpoint, rather than a targeted approach, and the results indicate that this may not have been the most effective approach. This is particularly true when considering the convenience sampling technique, the breakdown of the sample size, and the number of respondents who fell into the different groups; by focusing on specific groups, future studies can target particular dietary concerns, environmental consciousness, etc., and determine which aspects of the overall meal kit experience are most influential on satisfaction and behavioral intention. As this industry continues to grow, research on consumer perceptions of the various product attributes will increasingly be of importance to companies as they work toward targeting the right consumers.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Data available upon request.

**Conflicts of Interest:** The authors declare no conflicts of interest.

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