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Should I Go Back to the Roots to Obtain My Food? Understanding Key Factors Driving U.S. Consumers' Preferences for Food Foraging over Buying and Growing Food

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Abstract: Alternative forms of food procurement have increased in consumer popularity since the occurrence of food price inflation and the ongoing recession in the U.S. The present study explores predictors such as food engagement, food-related COVID-19 concerns, and the importance of sustainable foraging practices as determinants for U.S. consumers' preferences for food foraging. Two scenarios are investigated, the preference for food foraging over growing food and food foraging over regular food buying. The study is based on an online consumer survey ($n = 401$) and used partial least square structural equation modeling (PLS-SEM) for the data analysis. Results indicate that food engagement is the strongest predictor for both foraging over buying and foraging over growing scenarios. However, food-related COVID-19 concern appears to only be relevant for the foraging over buying scenario and the importance of sustainable growing practices is only relevant for the foraging over growing scenario. These findings are important because they indicate the attitudinal triggers of food foraging and are therefore of relevance to foraging communities and managers in municipalities, food retail, and horticultural businesses who are associated with traditional and alternative forms of food procurement.

Keywords: food foraging; food engagement; food procurement; sustainability; PLS-SEM



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1. Introduction

Food is essential to everyday life and its procurement is practiced in various forms. These include restaurants, supermarkets, farmers markets or farm gate visits, delivery of food boxes, homes, and community gardening, as well as hunting and gathering [1–4]. The gathering of vegetables, fruits, nuts, roots, and wood from forests, cemeteries, allotments and community gardens, roadsides, and school and university grounds [5,6]. This form of gathering is commonly known as foraging, which has become increasingly popular since the rise of urban horticulture and the occurrence of the coronavirus pandemic [7,8]. Urban horticulture refers to the cultivation of fresh produce, herbs, and medicinal and ornamental plants around cities. These often use vertical farming systems, which do not require land and soil, such as hydroponics or aeroponics [9]. In the United States (U.S.), food foraging as a consumer trend encompasses offerings such as food foraging tours, cookbooks, foraging courses, maps, and apps, and takes place in rural and urban landscapes [10–13]. Food foraging is rooted in culture and tradition [14] and has individual and social benefits such as obtaining food, saving money, contributing to landscape design and use, food security, sustainability, health, and wellbeing [6]. Various U.S. foraging studies have pointed out the importance of food foraging for people who have migrated to the U.S. It has been reported that foraging is often a family tradition learned from parents or grandparents and

that childhood exposure is essential to the practice and knowledge of food foraging. In addition, foraging traditions and culture shape memories, identity, and a sense of cultural belonging [15,16]. Food foraging, as a practice, allows these foragers to adapt in the U.S., and simultaneously feel connected to their country of origin [17]. Forager's ethnicity and country of origin often determine which types of plant species are collected. Other studies have reported that migrants may give up on their foraging traditions for food or plants with medical value, as they experienced stigmatization and felt that foraging could prohibit their social integration [17,18].

Gathering wild edible plants is permitted in specific areas; however, it is forbidden in conservation areas, as food foraging may have adverse effects on ecosystems and endangered plant species [19].

In addition, in some U.S. states, food foraging is not permitted on publicly owned land [20]. The legality of food foraging depends on the individual state [7]. For instance, in cities such as New York and Chicago, municipalities are fairly strict and fine people for foraging activities in city parks. While in Seattle, municipalities appear to be more lenient [7,20]. The size of U.S. food foraging communities still remains unknown; however, they are reportedly quite diverse, which include urban dwellers, and people with low (under 25,000; 25,000–49,999), medium (50,000–74,999; 75,000–84,999), and high-annual household incomes (85,000–99,999; over 100,000) [10]. However, low-income groups, people in the 18–25 age group, foreign-born individuals, or those depending on food stamps appear to be strongly involved [10]. The most active states in terms of foraging are Colorado, Oregon, Kansas, New Hampshire, Idaho, Washington, Ohio, Maine, Wisconsin, and Indiana [10]. The webpage “Falling Fruit-Map the Urban Harvest” displays over 1 million locations across the U.S. where food foraging is permitted and encouraged [21]. In collaboration with the United States Department of Agriculture (USDA), almost 3200 species that are suitable for foraging are identified and presented on the webpage. The “Falling Fruit” project aims to build a local foraging community and culture while fostering knowledge about native plants [21].

Food foraging as a subject has been widely researched, encompassing economic, geographical, anthropological, sociological, ecological, and forestry studies [22–26]. Food foraging as a consumer behavior is yet to be explored more widely. Recent marketing studies have been dedicated to consumers' willingness to try edible wild plants, food foraging as a form of tourism, consumers' willingness to accept opportunity costs and risks of foraged food, as well as consumer behavior in gardening and non-gardening locations [1,11,13,26]. Other research has investigated food foraging in the context of pandemic preparedness [27]. One commonality of these studies is the emphasis on the importance of food foraging as a form of alternative food procurement, although the actual preferences of consumers in a comparative scenario have yet to be uncovered. Based on this research gap, the present study focuses on traditional buying, growing, and food foraging, and explores key factors determining consumer preferences for food foraging over buying food and growing food, respectively. In the remainder of this paper, a conceptual framework presenting attitudinal factors predicting these behaviors and hypotheses is presented (see Section 2). The section is followed by Section 3, presenting the PLS-SEM approach following Hair et al. (2022) [28], as well as the development and evaluation of the model (see Section 3). The final sections present and discuss the findings of this study, which are followed by best practice recommendations, limitations, and suggestions for future studies (see Sections 4 and 5).

2. Conceptual Framework

Attitudinal and behavioral factors thought to be relevant, namely food engagement, food-related COVID-19 concerns, and the importance of sustainable foraging practices, are presented in the following section. Each section includes the corresponding hypotheses building the conceptual framework (see Figure 1). The conceptual model is also the proposed model to be tested using Partial Least Squares Structural Equation Modelling

(PLS-SEM). The ovals represent the constructs to be measured (using multi-item scales) and the arrows represent the proposed hypothesized relationships between constructs.

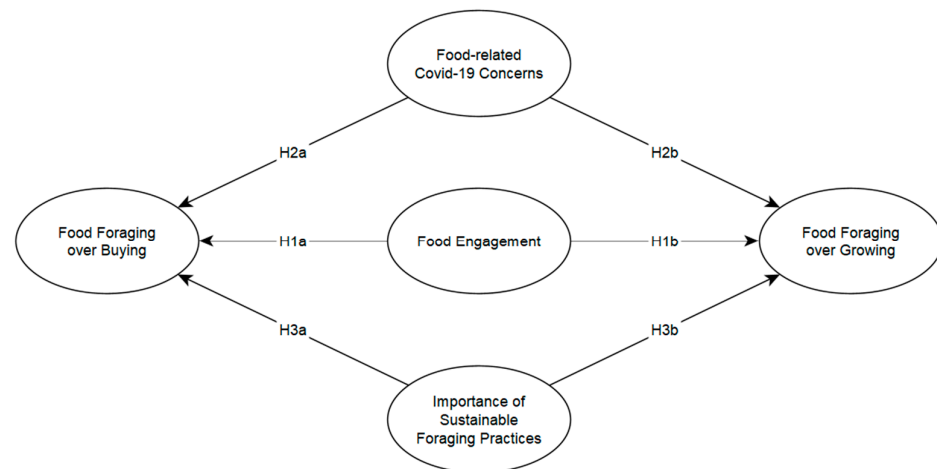


Figure 1. Conceptual model for U.S. consumers' preferences for food foraging over buying and growing.

2.1. Food Engagement

The extant literature highlights the importance of food engagement. Various food foraging papers have outlined that people who forage food are usually engaged in food-related activities [29,30]. This includes activities such as food processing, food preservation, home gardening, fishing, hunting, and keeping livestock [8,26]. Similar to food foraging, these activities require familiarity and knowledge of plants and animals as edible resources as a means for self-sufficiency [29,30]. Further studies have emphasized food knowledge and food engagement as means to counteract poor diet, food insecurity, and the importance of sharing indigenous food knowledge [29–33]. Food engagement is associated with tradition, culture, and ethnicity [28]. Therefore, the following hypotheses are proposed:

Hypothesis 1a (H1a). *The importance that U.S. consumers dedicate to food engagement positively impacts the preference for food foraging over buying.*

Hypothesis 1b (H1b). *The importance that U.S. consumers dedicate to food engagement impacts the preference for food foraging over growing.*

2.2. Food-Related COVID-19 Concerns

Since 2020, the recent body of literature on the coronavirus pandemic and its impact on communities, including food insecurity and food procurement, has been steadily developing [7]. Due to disruptions and distrust in food supply chains, consumers have gained interest in alternative ways forms of food procurement, including self-sufficiency and food foraging [7]. These alternative forms of food procurement allow consumers to avoid panic buying incidences [26], somewhat mitigate food insecurity, e.g., the use of food pantries and food stamps, and are in line with consumer trends in terms of healthy eating and gardening [34,35]. Amidst this background, the following hypotheses are proposed:

Hypothesis 2a (H2a). *U.S. consumers' food-related COVID-19 concerns positively impact their preference for food foraging over buying.*

Hypothesis 2b (H2b). *U.S. consumers' food-related COVID-19 concerns impact their preference for food foraging over growing.*

2.3. Importance of Sustainable Food Foraging Behavior

In addition to food and pandemic-related concerns, the sustainability and appropriateness of consumers' foraging practices have been actively discussed in recent studies [8,32–38]. Schunko et al. (2021) and Mina et al. (2023) contributed to an understanding of sustainable practices and policy advice for municipalities and consumers by systemizing the extant body of the literature [39,40]. These studies emphasized appropriate sustainable foraging practices that respect foraging communities and ecosystems alike, and motivation to sustainably forage [39,40]. Schunko et al. (2021) emphasized that the food collection of wild edible plants has multi-level ecological impacts, including individual plants, the plant population, the plant community, and the ecosystem [39]. The work illustrated how a change through foraging activities can impact plant growth, which has consequences for the plant population structure and the setup of plant communities, including their nutrition. Nutrient uptake and nutrient dynamics are common issues at the ecosystem level. Being attentive to all levels is important [39]. However, changes at the individual and population levels determine plant growth rates, plant survival, as well as their availability for foraging activities. Foraging plants that are not abundantly available is considered an unsustainable foraging practice [39]. Schunko et al. (2021) outlined that good practices involve foraging species that are commonly and widely available, foraging at multiple locations and harvesting pressures, plant knowledge and identification, avoiding damage to plant communities and plant parts, as well as issues of legality and interaction between foragers and the authorities [39]. Their work included best practice recommendations using equipment and tools, plant development stages, and the impact of weather conditions on harvesting [39]. Mina et al. (2023) presented cultural, economic, product-related, personal, and market-related reasons for being involved with sustainable foraging [40]. Based on the assumption that the importance of sustainable practices is aligned with food foraging preferences, the following hypotheses are proposed:

Hypothesis 3a (H3a). *The importance that U.S. consumers dedicate to sustainable food foraging behavior positively impacts the preference for food foraging over buying.*

Hypothesis 3b (H3b). *The importance that U.S. consumers dedicate to sustainable food foraging behavior positively impacts the preference for food foraging over growing.*

3. Material and Methods

The current research was exploratory in nature, and data used for the present analysis were procured through an online consumer survey distributed via Amazon Mechanical Turk (MTurk). MTurk is a crowd-sourcing platform connecting researchers with individuals who are employed to complete surveys and perform experimental work [41]. The platform was deemed appropriate, as individuals registered at the platform are diverse concerning their socio-demographic backgrounds and superior to other samples recruited through social media platforms [41,42]. To date, there has been no representative sampling frame for the U.S. foraging population available. Given that the recent body of the literature indicates forager diversity, MTurk as a platform employing a diverse range of workers was considered an appropriate source from which to draw the sample [41]. The data were collected in December 2022, and survey respondents were screened to be U.S. residents of at least 18 years of age. Further participation criteria were interest and experience with food foraging. A total of 417 responses were obtained; however, 16 responses had to be omitted as they were largely incomplete or otherwise unsuitable for data analysis due to speeding behavior. These survey respondents had filled in the survey far beyond the average completion time of 20 min. Finally, 401 responses were used for the partial least square structural equation modeling (PLS-SEM) analysis [28]. PLS-SEM is particularly flexible because it can accommodate scales of different types and/or different numbers of items, and does not require normally distributed responses [28,43]. Hair's ten-times rule, an approach to determine the minimum sample size, was applied, confirming that the

sample size was sufficient [28]. The literature on food foraging informed the development of the online survey [4,6,7,23,39]. Likert-type agreement scales (1 = strongly disagree to 7 = strongly agree) were used. Preferences for food foraging over buying and preferences for food foraging over growing were developed by the authors of the present study, using a scale anchored from 0 = preference for food foraging to 100 = preference for buying and growing. Before the survey launch, the content was pre-tested by 15 individuals on MTurk. This process allowed for the recognition of questions that may have needed rephrasing to ensure that the survey content was free from ambiguity. In addition, the pre-testing process established an average completion time and identified any problems with the survey flow. Litman and Robinson (2021) offered instructions and best practice recommendations for crowdsourcing research, and these were strictly followed [41].

The data analysis was facilitated in two steps. In step one, the program SPSS 28 was used to generate the descriptive statistics to give meaning to the socio-demographic profile of the research participants. In step two, SmartPLS 4 was used to analyze the measurement and the structural model. The PLS-SEM approach first analyzes the measurement model and focuses on the relationships between questions and proposed scales (latent variables), as well as the significant relationships between the respective latent variables [28]. The structural model aims to check the factor loadings of questions and their scales. Following Hair et al. (2022), factor loadings are required to be larger than the threshold value of 0.4 [28]. To understand whether item/scale convergence is achieved, the average variance extracted (AVE) is taken into consideration. It is recommended that AVE values are greater than 0.5 [43]. Cronbach's alphas and composite reliability are used to examine scale reliability. For both indicators, values should exceed the threshold value of 0.6 [28,43]. Finally, the verification of discriminant validity requires checking whether the Fornell–Larcker criterion is greater than the cross-loadings [44], as well as the heterotrait–monotrait ratio of correlations criterion (HTMT) [45]. HTMT values should be below the threshold value of 0.9 [28]. To exclude any incident of multicollinearity, the structural model's variance inflation factor (VIF) scores should be below 5 [28].

Step two of the SEM analysis tested the structural fit, explanatory power, and predictive relevance of the model. Model fit indices are expected, including goodness of fit and the normed fit index, where scores approaching 1 are desired, although specific thresholds and their interpretation are unclear, as cautioned by Hair et al. (2022) [28]. The Standardized Root Mean Square Residual indicates a better fit when smaller; it is acceptable if it is under 0.08 and problematic if it is over 0.10 [28]. Two further model tests include its predictive relevance, using the Stone–Geisser criterion, Q^2 is considered to have acceptable (>0), medium (~ 0.25), and strong (~ 0.50) predictive relevance [37]. Explanatory power (R^2) is considered weak (~ 0.25), moderate (~ 0.50), or substantial (~ 0.75). A satisfactory inner and outer model analysis precludes testing the proposed hypotheses, which tests the direction and statistical significance of the coefficients representing each hypothesized relationship. In PLS-SEM, this is achieved with bootstrapping procedures (10,000 samples) [28].

4. Results and Discussion

4.1. Sample Description

Table 1 depicts the demographics of the sample, including frequencies, percentages, and relative information from the most recent U.S. census for contrast. The sample consisted of 50.4% men and 49.6% women. Most survey participants were between 25 to 54 years old and held a bachelor's or postgraduate degree, spanning a wide annual income range from \$25,000 to \$100,000. The sample could be characterized as younger and more educated than U.S. standards. The majority of the respondents resided in the South (51.6%), followed by the Northeast (26.2%), Midwest (16%), and Western (6.2%) regions of the United States.

Table 1. Socio-demographic profile of survey respondents ($n = 401$).

| | Frequency | % | US Census % |
|--------------------------------|-----------|------|-------------|
| Age | | | |
| 18–24 | 32 | 8.0 | 12 |
| 25–34 | 205 | 51.1 | 18 |
| 35–44 | 70 | 17.5 | 16 |
| 45–54 | 68 | 17.0 | 16 |
| 55–64 | 25 | 6.2 | 17 |
| 65+ | 1 | 0.2 | 21 |
| Total | 401 | 100 | 100 |
| Education | | | |
| Did not finish high school | 3 | 0.7 | 11 |
| Finished high school | 28 | 7.0 | 27 |
| Attended University | 35 | 8.7 | 20 |
| Bachelor’s degree | 247 | 61.6 | 29 |
| Postgraduate degree | 88 | 21.9 | 13 |
| Total | 401 | 100 | 100 |
| Household Annual Income | | | |
| \$0 to \$24,999 | 23 | 5.7 | 18 |
| \$25,000 to \$49,999 | 98 | 24.4 | 20 |
| \$50,000 to \$74,999 | 165 | 41.1 | 18 |
| \$75,000 to \$99,999 | 94 | 23.4 | 13 |
| \$100,000 or higher | 21 | 5.2 | 31 |
| Total | 401 | 100 | 100 |
| Gender | | | |
| Male | 202 | 50.4 | 49 |
| Female | 199 | 49.6 | 51 |
| Total | 401 | 100 | 100 |
| Region | | | |
| Northeast | 105 | 26.2 | 17 |
| South | 207 | 51.6 | 38 |
| Midwest | 64 | 16 | 21 |
| West | 25 | 6.2 | 24 |
| Total | 401 | 100 | 100 |

4.2. Results of the Measurement Model Analysis

Table 2 reveals the satisfactory levels of both reliability and validity in the measurement model. Cronbach’s alpha and the composite reliability indicators were above the required minimum value of 0.6 [28]. Additionally, all AVEs were over 0.5, and factor loadings for all individual items exceeded 0.6 [28]. All values satisfied the criteria specified by Hair et al. (2022), indicating strong internal consistency and meeting the threshold value for latent variables [28].

Table 2. Scale loadings, reliabilities, and convergent validity.

| Scales and Items | Factor Loadings | Cronbach’s Alpha | Composite Reliability | Average Variance Extracted |
|---------------------------------------|-----------------|------------------|-----------------------|----------------------------|
| Food Engagement | | 0.838 | 0.884 | 0.605 |
| Going hunting/fishing to obtain food | 0.820 | | | |
| Keeping livestock to obtain food | 0.834 | | | |
| Collecting flowers or shells | 0.791 | | | |
| Growing food and flowers in my garden | 0.712 | | | |
| Food processing and preserving | 0.725 | | | |

Table 2. Cont.

| Scales and Items | Factor Loadings | Cronbach's Alpha | Composite Reliability | Average Variance Extracted |
|--|-----------------|------------------|-----------------------|----------------------------|
| Food-related COVID-19 Concerns | | 0.859 | 0.889 | 0.501 |
| Since COVID-19, I feel drawn towards self-sufficiency | 0.669 | | | |
| Since COVID-19, I am worried about high food prices for fruit and vegetables. | 0.664 | | | |
| Since COVID-19, I am worried about the availability of fruit and vegetables. | 0.683 | | | |
| Shortages in fruit and vegetables have led me to competitive and/or panic-buying behavior. | 0.772 | | | |
| Since COVID-19, I have been relying on food pantries | 0.747 | | | |
| Since COVID-19, I have been relying on SNAP benefits | 0.727 | | | |
| Since COVID-19, I have been growing more food in my garden | 0.691 | | | |
| Since COVID-19, I am committed to food processing and food preserving | 0.702 | | | |
| Importance of sustainable foraging practices | | 0.867 | 0.896 | 0.519 |
| Pruning or cutting plant parts | 0.684 | | | |
| Foraging when soil is wet | 0.781 | | | |
| Foraging earlier than necessary | 0.699 | | | |
| Premature harvest of fruit and nuts | 0.621 | | | |
| Observing plant communities | 0.809 | | | |
| Collecting rubbish | 0.703 | | | |
| Foraging at multiple locations | 0.771 | | | |
| Digging roots | 0.678 | | | |
| Food foraging over Buying | | 0.905 | 0.926 | 0.676 |
| Mushrooms | 0.812 | | | |
| Berries | 0.780 | | | |
| Nuts and seeds | 0.842 | | | |
| Roots | 0.868 | | | |
| Fruit from trees | 0.794 | | | |
| Herbs | 0.832 | | | |
| Food foraging over Growing | | 0.924 | 0.940 | 0.724 |
| Mushrooms | 0.808 | | | |
| Berries | 0.874 | | | |
| Nuts and seeds | 0.825 | | | |
| Roots | 0.863 | | | |
| Fruit from trees | 0.863 | | | |
| Herbs | 0.872 | | | |

Table 3 shows the Fornell–Larcker and HTMT ratios. All cross-loadings were less than the square root of the individual constructs' AVE. Except for one of the HTMT ratios, all were smaller than 0.90. The exception was the ratio between foraging versus growing and foraging versus buying, which was higher than recommended (HTMT: 0.924). However, this was not considered an issue, because the two constructs measure a very similar concept. Given that, the largest VIF was 2.615 and the average VIF was 2.449; multicollinearity was also not an issue as both values were below the recommended threshold of 5. Therefore, it can be said that, apart from the one notable exception, discriminant validity can be confirmed.

Table 3. Fornell–Larcker criterion and Heterotrait–Monotrait ratio.

| Fornell-Larcker Criterion | A | B | C | D | E |
|---|-------|-------|-------|-------|-------|
| (A) COVID-19 concerns | 0.708 | | | | |
| (B) Food engagement | 0.695 | 0.778 | | | |
| (C) Importance of sustainable foraging practice | 0.683 | 0.742 | 0.721 | | |
| (D) Foraging over buying | 0.421 | 0.474 | 0.411 | 0.822 | |
| (E) Foraging over growing | 0.357 | 0.412 | 0.399 | 0.848 | 0.851 |
| Heterotrait–Monotrait Ratio | A | B | C | D | E |
| (A) COVID-19 concerns | | | | | |
| (B) Food engagement | 0.803 | | | | |
| (C) Importance of sustainable foraging practice | 0.772 | 0.862 | | | |
| (D) Foraging over buying | 0.455 | 0.509 | 0.438 | | |
| (E) Foraging over growing | 0.377 | 0.448 | 0.434 | 0.924 | |

4.3. Structural Model

In this study, the indices for hypothesis testing fall within acceptable ranges, reflecting a well-structured model. The structural model yielded a Goodness of Fit of 0.390, a Normal Fit Index of 0.783, and a Standardized Root Mean Square Residual of 0.066. As noted by Hair et al. (2022), an SRMR below the threshold value of 0.08 suggests an adequate model fit [28]. When it comes to explanatory power, the constructs of the model led to an R^2 of 0.243 for the preference of Foraging over Buying, and an R^2 of 0.192 for the preference of Foraging over Growing. These values are indicative of the model's ability to account for 24.3% of the variance in the preference for Foraging over Buying and 19.2% of the variance for Foraging over Growing. While the values may be considered weak, the exploratory character of the research ensures that the results deliver adequate explanatory power. As for the predictive relevance, the Stone-Geisser criterion Q^2 was utilized. Hair et al. (2022) suggested that values above zero indicate good predictive relevance [28]. As these values were reported as being higher than zero and had an average Q^2 score of 0.194, the model had adequate predictive relevance.

4.4. Results from the Hypothesis Testing

The outcome of the hypothesis testing is presented in Table 4 and Figure 2. Table 4 provides a breakdown of the key statistical values, while Figure 2 illustrates the conceptual model results. It was found that the importance that U.S. consumers dedicate to food engagement positively impacts the preference for food foraging over buying and over growing, supporting hypotheses H1a and H1b. Like previous studies, the present studies emphasized the notion of consumers wanting to connect land, resources, and food production and processing to mitigate food insecurity and achieve food sovereignty [45–47]. The extant literature highlights the importance of formal and informal networks that actively practice foraging and food engagement [7]. Particular resources of knowledge and social media pages displaying food engagement increased in popularity among consumers [7]. Research on highly food-engaged consumers shows that feelings of belonging with self and group identity are important reasons for social media interaction [48]. Health, lifestyle, and a nature-related subculture are associated with food foraging and food engagement [48]. Overall, engagement with nature and food have proven to be significant predictors of motivation to food forage [17], but appear to be relevant when understanding preferences towards foraging as consumer behavior in a comparative context.

Table 4. Coefficients for Hypothesized Paths.

| Hypothesised Relationship | Coefficient | T Stat | <i>p</i> -Value |
|---|-------------|--------|-----------------|
| H1a: Food engagement → Foraging over Buying | 0.312 | 4.561 | 0.000 |
| H1b: Food engagement → Foraging over Growing | 0.224 | 2.764 | 0.006 |
| H2a: Food related COVID-19 Concerns → Foraging over Buying | 0.153 | 2.493 | 0.013 |
| H2b: Food related COVID-19 Concerns → Foraging over Growing | 0.079 | 1.115 | 0.265 |
| H3a: Importance of sustainable foraging practices → Foraging over Buying | 0.076 | 1.054 | 0.292 |
| H3b: Importance of sustainable foraging practices → Foraging over Growing | 0.179 | 2.211 | 0.027 |

Note: **Bold** when *p*-Value < 0.05.

Regarding food-related COVID-19 concerns, the findings were ambivalent. On the one hand, U.S. consumers' food-related COVID-19 concerns positively impact the preference for food foraging over buying, as outlined by H2a. The effect of the pandemic on food foraging over buying is aligned with the increased interest in alternative forms of food procurement, including self-sufficiency, and food foraging caused by disruptions and distrust in food supply chains [7]. On the other hand, such concerns have no impact on the preference of U.S. consumers for food foraging over growing, as outlined by H2b. As food growing is also aligned with self-sufficiency, it is a less dependent activity on the supply chains [7], and might also be considered an alternative form of food procurement [49]; food-related pandemic concerns did not have an impact on the predilection for food foraging

over growing on U.S. consumers. Overall, the findings may be explained by the work of Wells (2023), who explored pandemic-driven consumer behavior and food foraging [27]. Wells et al. (2023) and Dickins and Schalz (2020) indicated that, in situations where food choices are scarce or perceived as limited, the relative availability and acceptability of food options, including their methods of procurement, will be re-evaluated [27,50]. This re-evaluation considers the risks and rewards of food options and distribution channels. Food procurement during the coronavirus pandemic has been perceived to be riskier and more uncertain, requiring resourcefulness and alternative forms of procurement [27].

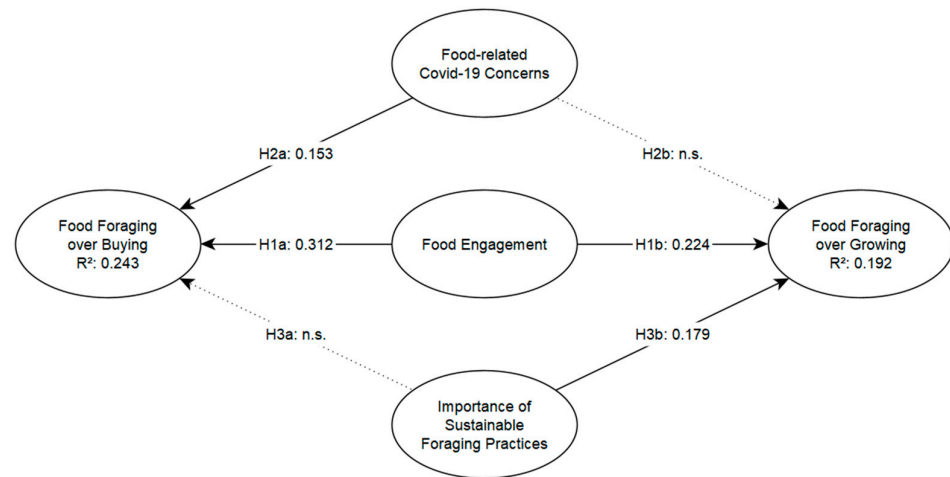


Figure 2. Conceptual Model Results. Note: not significant is abbreviated as n.s.

Similarly, sustainable practices produced mixed outcomes in the hypothesis testing. The importance that U.S. consumers dedicate to sustainable food foraging behavior positively impacts the preference for food foraging over growing, as outlined by H3b. The conscientious engagement in foraging, as outlined by Schunko et al. (2021) and Mina et al. (2023), could explain the positive preference for food foraging over growing, as it reflects a broader trend towards ethical consumption, a closer connection with nature, and a commitment to practices that respect both the ecosystem and the community [39,40]. In contrast, the significance that U.S. consumers dedicate to sustainable food foraging behavior has no impact on the preference for food foraging over buying, failing to support hypothesis H3a. The reasoning for this may be that, in a buying scenario, one may not see the relevance of sustainable foraging practices, as consumers buy from food retail settings, where food is coming from large-scale production and food processing, as well as international food chains instead of their local environment [26]. In addition, the recent body of literature shows food neophobia and distrust towards businesses selling foraged food items. This distrust stems from a lack of plant knowledge and concerns about food safety and transparency [26].

5. Conclusions

5.1. Suggestions for Practitioners

The present study focused on the predictor of U.S. consumer preferences for food foraging over buying and growing. The study highlighted food engagement as the strongest predictor for both scenarios. While food-related COVID-19 concerns only appeared to be relevant for the buying scenario, the importance of sustainable growing practices was only in the growing scenario.

The results of the present study are an addition to the extant literature on food foraging and are of relevance to municipalities, consumers, and managers in U.S. horticulture and gastronomy alike. Managers in gastronomy may use elements of food engagement to attract consumers and highlight ingredients or dishes that include foraged food. Elements of experiential marketing may be beneficial in that regard; creating events where

consumers have an opportunity to experience foraged products in person and on social media. Branded hashtags, food videos, and calls for action outlining that foraged items from local landscapes have been harvested by following sustainable practices are likely appealing to consumers with high levels of food engagement preferring alternative forms of food procurement [48]. In municipalities where foraging is legal, communities are called into action to provide advice and information concerning sustainable foraging practices and plant knowledge. Educating citizens and providing a code of conduct, such as those outlined by Schunko et al. (2021) and Mina et al. (2023) [39,40], are essential to protect land, resources, citizens, and legal boundaries. Given the diversity in landscapes and legality in the U.S., advice at the local level is crucial. Outlining the various levels of ecological impact may be beneficial, as this leads to sustainable practices and reduces pressures on ecosystems [39]. Collaborations with educational institutions should help to create information materials and educational offerings appealing to a diverse audience. Managers of community gardens or foraging tours may be other important stakeholders who are knowledgeable in how to accommodate the interests of migrants and diverse ethnic communities, and their interest in edible wild foods that are of cultural importance to them [51,52]. Against this background, food foraging activities are important for refugees and migrants for food security and social inclusion [17,18].

5.2. Limitations and Suggestions for Future Studies

In addition to these suggestions to practitioners, the authors of the present study would like to critically reflect on their work. While the conceptual model, hypotheses, and results are treated as predictive, the research is based on single time-period data collection. Strictly speaking, the predictions are associations with the direction of theoretically derived causation. Certainly, a longitudinal design or an experimental design could more firmly establish the direction of causation. Furthermore, the present study is built on a purposive sample stemming from a crowd-sourcing platform, so the representativeness of the results requires discussion. Generally, crowdsourcing samples are not comparable with representative samples of the U.S. population, but are superior to convenience samples such as samples generated on social media or by college students. However, food forager communities are diverse, and representative information is unavailable. A diverse sample, procured through MTurk, is appropriate. Future studies could focus on understanding foraging behavior in individual and group settings, as well as social media and media reporting of food foraging as a recent phenomenon relevant to ethics, food security, and food democracy. Media framing, such as emotional anchoring, could shape such an investigation—as foraged food is closely associated with values and emotion.

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