

The Intersection of Culture, Eating Habits and Eating Competence Among U.S.-born vs
Immigrant Southeast Asian College Students

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Abstract

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Food Systems, Nutrition, and Health

Southeast Asian (SEA) countries have a shared culture that is distinct from the vaguely defined “Asian culture,” a nuance that is lost in U.S.-based research that reports racial demographic groups as opposed to ethnic ones. SEA cultures share characteristics in their relationship to food and mealtimes, and understanding these cultural influences on eating habits can better inform nutrition interventions and barriers to eating competence (EC) among SEA Americans. EC emphasizes positive attitudes, internal cues, food enjoyment, and meal planning without restrictive rules. This mixed methods analysis examines the association between culture, eating habits, and EC among U.S.-born (n=77) versus immigrant (n=36) SEA undergraduate college students in the U.S. We hypothesized that EC would be higher in the immigrant SEA population due to aspects of traditional food culture that may align with the Satter Eating Competence

Model (ecSatter). EC was measured via the Satter Eating Competence Inventory (ecSI 2.0™) and perceived influence of culture was analyzed through written responses to the question, “How does your culture and/or upbringing inform what and how you eat?”. Results showed no statistically significant difference in ecSI 2.0™ scores between the U.S.-born and immigrant SEA groups ($p=0.8302$). However, qualitative analysis revealed insights into SEA culture and wider “Asian culture” on food. These insights include an emphasis on balanced meals, rice as a staple grain, traditional food as inherently “healthy,” and aspects of SEA culture that align with EC. While there may be features of SEA food culture that promote (or hinder) EC, future research is needed to further explore how EC appears in SEA cultures.

1. Introduction

Southeast Asia (SEA) refers to a region in Asia that encompasses the countries of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, and Vietnam. Other than Timor-Leste, the other 10 countries of SEA are member states of the Association of Southeast Asian Nations (ASEAN), an economic and political alliance that holds a mission statement of “One Vision, One Identity, One Community.”¹

SEA migration to the United States (U.S.) has been influenced by economic opportunity, political influences, and violence. Filipinos started immigrating to the U.S. in the 18th century, with major immigration as agricultural workers starting in 1906.² The first large wave of Thai immigration came in the 1960s and 1970s with the U.S. military establishing its presence and influence in Thailand, resulting in Thai people seeking education in the U.S.³ Immigration from Cambodia, Laos, and Vietnam in the 1970s occurred in the aftermath of the Khmer Rouge genocide, bombings in Laos, and the Vietnam War.⁴ Today, SEA Americans make up 14% of the Asian American population.⁴

1.1 Southeast Asians: A Distinct Culture In and Out of the U.S.

SEA countries have a shared culture that is distinct from the vaguely defined “Asian culture,” a nuance that is lost in research that reports racial demographic groups as opposed to ethnic ones. In the U.S., research that identifies “Asian” as one racial category contributes to the idea of a homogenized culture, ignoring that at least three subregions of Asia – East Asia, South Asia, and SEA – have cultures that may overlap, but ultimately hold histories, values, and traditions that are unique to their respective subregion.^{5,6} In one aspect, SEA cultures follow a bilateral kinship system, meaning that both sides of a family or marriage – both the father’s and the mother’s – are considered important in personal and financial terms.⁷ This is in contrast with Chinese and Indian culture, which has a patriarchal kinship system.^{8,9} Cultural diversity is also in itself a trait of SEA culture, with many SEA countries being multiethnic and influenced by a variety of religions, including Islam, Buddhism, and Catholicism.⁷

Looking at the U.S. Census Bureau’s definitions of racial categories over time demonstrates how the U.S. has restricted, then expanded, demographics related to Asian Americans. In the 1870s, the first demographic category of “Chinese” was added in addition to “White,” “Black,” and “Indian” (referring to Native American peoples).¹⁰ Different ethnicities were lumped together with Chinese on the census, including Filipino, Japanese, and Indian, until the category of “Asian or Pacific Islander” was introduced around 1990.¹⁰ What the U.S. Census Bureau qualifies as “Asian” has changed over the years, and it was only in the 2024 update that Central Asians were added to the “Asian” category, broadening it further.¹¹ Despite this more inclusive definition, societal perception of who falls into the “Asian” category is narrow. Non-Asian Americans, and even a portion of Asian Americans, tend to largely associate the term “Asian” with East Asians (Chinese, Japanese, Korean).^{12,13}

Equating all Asian Americans as East Asian hides disparities experienced by SEA Americans. For example, Asian Americans as a whole are reported as being the highest earning

racial group; however, when examining breakdown by ethnicity, SEA ethnicities often fall below the median household income.^{5,6} Looking at nutrition-related chronic diseases, the prevalence of type 2 diabetes is higher among SEA ethnicities compared to East Asian ethnicities.¹⁴ In terms of mental health, Filipino Americans have been found to have a statistically higher prevalence of mental illness or substance use disorder compared to Chinese or Asian Indian Americans.¹⁵ Considering refugee status and how that impacts immigration from certain SEA countries, SEA refugees are shown to be particularly impacted by physical (hypertension, hypercholesterolemia, chronic pain) and mental health problems (PTSD, depression).¹⁶

1.2 Southeast Asian Food Culture

SEA cultures express a deep appreciation for food, mealtimes, and rice as a staple grain.^{17,18} SEA food is known to incorporate a balance of sweet, sour, salt, and spice, along with a variety of fresh herbs.¹⁹ Common spices include chilies, lemongrass, and shrimp paste, with herbs such as Thai basil, cilantro, and mint being utilized; coconut milk is also a popular ingredient.¹⁹ A typical SEA meal consists of rice and a number of other dishes, such as soups, vegetables (fresh, pickled, steamed, stir-fried), protein (fish, meat, tofu, eggs), and condiments (fish sauce being common.)^{17,20,21} This format promotes the inclusion of a variety of foods during mealtimes. Other aspects of SEA culture, such as having multiple generations living under one roof or viewing food shopping as an important social activity, may be associated with “healthier dietary behaviors.”²²

While SEA cultures do consider the effect of diet on one’s health, studies have found that eating for pleasure was also highly valued in SEA cultures.²³ Additionally, some SEA groups may describe their traditional foods as being inherently “healthy,” indicating that there is a lack of worry or restriction of intake when eating traditional foods.²⁴ Studies have found that U.S.-born, 2nd generation SEA immigrants retain less of their parent’s traditional food patterns compared to their 1st generation peers.^{25,26} Proximity to one’s ethnic community in the U.S., or greater association with one’s ethnic peers during college, are drivers in maintaining more traditional foodways.²⁶ Thus, promoting SEA food culture may be beneficial to U.S.-born SEA Americans in promoting healthy eating habits and attitudes.²⁷

1.3 Eating Competence

Eating competence (EC) emphasizes positive attitudes, internal cues, food enjoyment, and meal planning without restrictive food selection rules. The Satter Eating Competence Model (ecSatter) is an evidence- and practice-based way of understanding EC and is described by these four domains: eating attitudes, food acceptance, internal regulation, and contextual skills.²⁸ These domains overlap and thus may theoretically influence each other. *Eating attitudes* is characterized by having a “positive, relaxed, and flexible” way of eating.²⁸ *Food acceptance* is characterized by maintaining one’s nutritional status through an intrinsic inclination for consuming a variety of foods; feeling comfortable with eating one’s preferred food while also being able to adapt to less-preferred foods when necessary; or to be curious in experimenting

with new foods.²⁸ *Internal regulation* is characterized by one's ability to be attuned to hunger and satiety cues that help maintain energy balance.²⁸ Finally, *contextual skills* is characterized by structure and planning around mealtimes in a way that is relaxed and positive.²⁸ Together, the domains of ecSatter work to support not only nutritional health but a healthy relationship with food and oneself.²⁸

The Satter Eating Competence Inventory (ecSI 2.0™) is a validated instrument used to measure EC, and is available in English in addition to Arabic, Finnish, German, Japanese, Spanish, Estonian, Dutch, Italian, French Canadian, French and Brazilian Portuguese, and Swedish.^{29,30} Using the ecSI 2.0™, EC has previously been studied in the American and Brazilian college student population.^{31,32} However, there is limited knowledge of EC among SEA college students, or of EC in U.S.-born and immigrant SEA populations. The primary aim of this exploratory research was to answer the following question: How does cultural background intersect with eating habits and EC among U.S.-born versus immigrant SEA college students in the U.S.? We hypothesized that EC would be higher among immigrant SEA college students compared to their U.S.-born counterparts, due to aspects of SEA food culture that may align with ecSatter. Additionally, we hypothesized that responses from immigrant SEA students would be more likely to code for EC domains than U.S.-born SEA students. The secondary aim of this study was to assess the frequency of certain inductive codes in relation to EC. We hypothesized that the codes “Cultural food preference,” “SEA food culture,” “Rice,” and “Balance” would occur with higher frequency among participants that scored as eating competent.

1.4 Positionality Statement

The primary author of this study is a 2nd generation Vietnamese and Mexican immigrant who has extensive knowledge and understanding of Vietnamese food culture and to an extent, broader SEA food culture. Their motivation is to encourage further research into SEA Americans as a unique population, not to show bias to any one culture. They are committed to studying nutrition through the lens of cultural humility.

2. Methods

2.1 Participants and Data Collection

This study was a secondary analysis of the Lifecourse Eating and Feeding Registry Survey, an online survey with self-reported measures of daily hassles and uplifts, weight perception, diet quality, and EC as measured by the ecSI 2.0™. Qualitative questions with text box entries were included on the topics of culture and tailoring one's diet for various reasons. The study was offered to U.S. undergraduate college students registered in elective nutrition courses (including students from a variety of academic majors) at the University of Washington in Spring and Autumn quarters of 2023. A total of 1244 students were invited to participate. The survey was administered using REDCap (Research Electronic Data Capture).^{33,34} The Human Subjects Division at the university determined that this study was exempt from full IRB review.

Our analysis included responses to socio-demographic information, EC as assessed by the ecSI 2.0™, and a text entry response to the question, “How does your culture and/or upbringing inform what and how you eat?” To capture the SEA population of students, we included 114 participants that selected “Southeast Asian” as their race or origin (Bruneian, Cambodian, Indonesian, Laotian, Malaysian, Burmese, Filipino, Singaporean, Thai, Timorese, or Vietnamese), and 20 participants that selected “More than one race or origin” with a write-in that included “Southeast Asia(n)” or a specific SEA ethnicity (see Figure 1). Participants were assigned as U.S.-born or immigrant by their answer to the question, “Where were you born?” After duplicate entries and answers with missing values were removed, a total of 113 participants were included for analysis. Of the 113 participants, 77 were U.S.-born and 36 were immigrants.

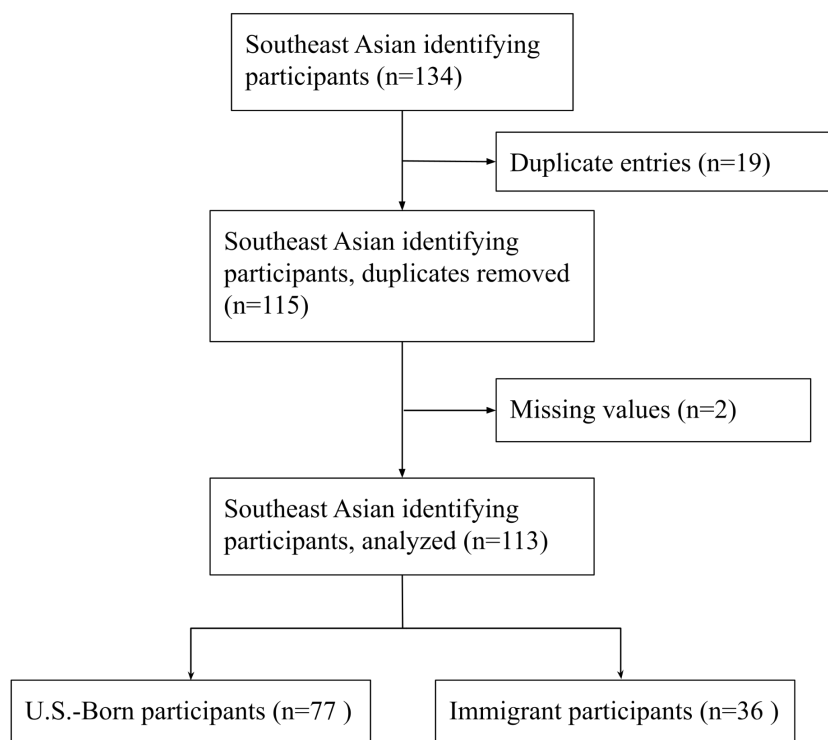


Figure 1. Flowchart of participant selection for analysis

2.2 Data Analysis

Quantitative analysis was done on participants’ answers to the ecSI 2.0™, which was totaled to give a numerical score for EC. A total ecSI 2.0™ score of 32 or higher is considered eating competent; a total score of less than 32 is considered not eating competent.^{35,36} A Student’s t-Test was conducted to compare ecSI 2.0™ between U.S.-born and immigrant SEA groups. Statistical analysis was completed using Microsoft Excel (Version 2503, Microsoft Corporation) with a significance level of 0.05.

For this analysis, total ecSI 2.0™ scores of 6 or lower were considered as non-valid scores. This was determined through an earlier analysis of the Lifecourse Eating and Feeding

Registry Survey for a conference presentation.³⁷ According to research on ecSI 2.0™ and the Eating Disorders Inventory (EDI), an ecSI 2.0™ total score of 16 or lower is associated with high eating disorder risk.^{35,38} In the original combined data set of the Lifecourse Eating and Feeding Registry Survey, the mean ecSI 2.0™ total score was 15 to 18 for each gender group – far lower than any college student population studied previously.^{32,39,40} Additionally, many values between 0 and 16 were observed. When plotting these values on a histogram, the distribution was negatively skewed, despite ecSI 2.0™ scores generally being shown to be normally distributed in past EC research in similar populations (college students, mainly female).^{31,35} According to these histogram plots, the values of 6 and lower had exceptionally high frequencies which were highly unlikely to be true values; removing them produced a mean ecSI 2.0™ total score of around 28, which aligns with previously published observations.^{35,38}

Qualitative analysis was a combination of directed content analysis (deductive) and conventional content analysis (inductive), using Dedoose (Version 9.2.14, SCRC) for coding. Researchers were blinded to participants’ EC status during qualitative coding. The initial, deductive codebook was developed for the four domains of ecSatter. The primary author utilized *in vivo* coding to assign codes based on each domain, with other codes being classified as potential “other codes.” These “other codes” were used in a second pass of coding using an inductive approach, in which themes and sub-codes were developed. After the initial coding, the code book was shared with two independent student researchers who applied codes using the prepared code book. The primary author and researchers discussed the application, validity, and discrepancies in the codes. Once coding was completed, we analyzed the frequency and context of the coded excerpts in relation to ecSI 2.0™ scores.

3. Results

3.1 Demographics

A total of 134 SEA participants were identified, and 113 participants were selected for final data analysis after duplicate entries or entries with missing values were removed. As described in Table 1, most of these 113 participants identified as women, were aged 18–20 years, and were ethnically SEA only (meaning not mixed with a non-SEA ethnicity).

Table 1. Participants’ Demographics

Demographic Characteristics	All SEA^{1,2} n(%)	U.S.-born SEA³ n(%)	Immigrant SEA⁴ n(%)
<i>Gender</i>			
Man	33 (29.2)	19 (24.7)	14 (38.9)
Woman	75 (66.4)	55 (71.4)	20 (55.6)
Transgender Woman or Transfeminine	1 (0.9)	1 (1.3)	0 (0)
Non-binary or Gender non-conforming	4 (3.5)	2 (2.6)	2 (5.6)

<i>Age</i>			
18 years	24 (21.4)	20 (26.0)	4 (11.1)
19 years	35 (31.3)	26 (33.8)	9 (25)
20 years	27 (24.1)	18 (23.4)	9 (25)
21 years	16 (14.3)	9 (11.7)	7 (19.4)
22 years	2 (1.8)	2 (2.6)	0 (0)
23 years	4 (3.6)	1 (1.3)	3 (8.3)
24+ years	4 (3.6)	1 (1.3)	3 (8.3)
<i>Ethnicity</i>			
Southeast Asian	94 (83.2)	61 (79.2)	33 (91.7)
Southeast Asian + Other	19 (16.8)	16 (20.8)	3 (8.3)
<i>Birth Country</i>			
United States	77 (68.1)	77 (100)	0 (0)
Burma	2 (1.8)	0 (0)	2 (5.6)
Indonesia	6 (5.3)	0 (0)	6 (16.7)
Philippines	4 (3.5)	0 (0)	4 (11.1)
Singapore	2 (1.8)	0 (0)	2 (5.6)
Thailand	1 (0.9)	0 (0)	1 (2.8)
Vietnam	13 (11.5)	0 (0)	13 (36.1)
Other	8 (7.1)	0 (0)	8 (22.2)

¹SEA = Southeast Asian; ² All SEA, n = 113; ³ U.S.-born SEA, n = 77; ⁴ Immigrant SEA, n = 36

3.2 Eating Competence

Table 2 below details ecSI 2.0™ total scores for the U.S.-born SEA group and the immigrant SEA group. Non-valid scores are not a part of the analysis of participants identified as EC versus non-EC. However, these values illustrate the large proportion of participants whose ecSI 2.0™ scores were considered non-valid. No statistically significant differences were found between U.S.-born SEA ($M = 26.52$, $SD = 11.67$) and immigrant SEA participants ($M = 25.86$, $SD = 12.69$), $P = .83$.

Table 2. Eating Competence Between U.S.-born SEA¹ vs Immigrant SEA

Categorization	U.S.-born SEA ²	Immigrant SEA ³
	n(%)	n(%)
All Valid Scores	52 (67.5)	23 (63.9)
Eating Competent ⁴	19 (24.7)	9 (25.0)
Not Eating Competent ⁵	33 (42.9)	14 (38.9)
Non-Valid Score ⁶	25 (32.5)	13 (36.1)

¹SEA = Southeast Asian; ² US-Born SEA, n = 77; ³ Immigrant SEA, n = 36; ⁴ Eating Competent = ecSI™ score ≥ 32 ; ⁵ Not Eating Competent = ecSI™ score < 32 ; ⁶ Non-Valid Score = ecSI™ score ≤ 6

3.3. Themes

The final codebook, which includes both deductive and inductive codes, is detailed in the Appendix. Although the code for “Internal regulation” was initially included, there were not enough occurrences in the initial pass of coding to include this code in the final codebook. As further illustrated in the coding framework in Figure 2, four themes were identified: Eating Competence, Regulated Food Choice, Cultural Food Choice, and Food Culture.

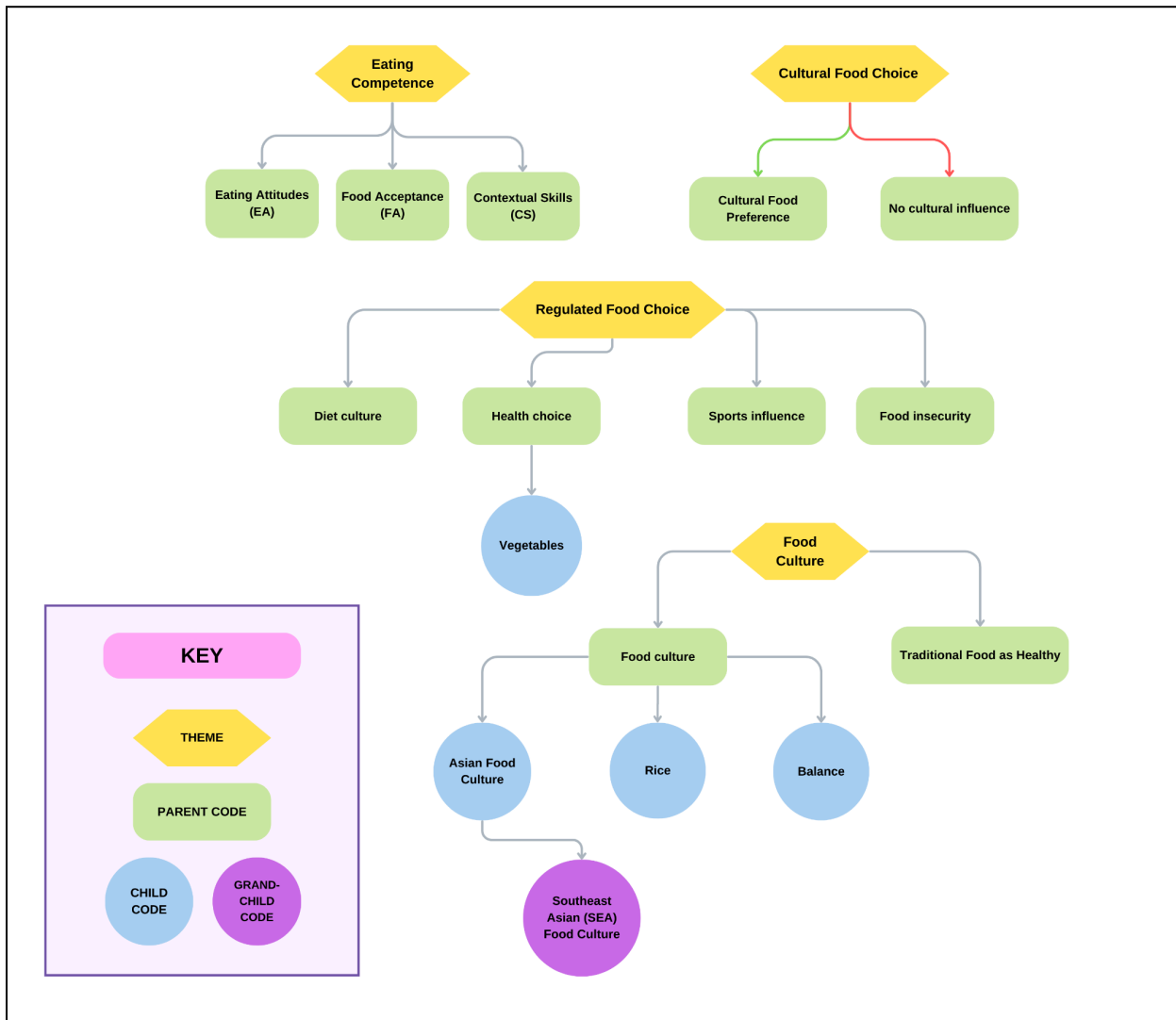


Figure 2. Eating Competence and Food Culture Coding Framework

Theme 1: Eating Competence

This theme aligns with codes for the domains of ecSatter. “Eating attitudes” and “Contextual skills” appeared at the same frequency among participants. Answers that aligned with “Eating attitudes” mentioned enjoyment of eating and being happy about eating a variety of foods. Responses that aligned with “Contextual skills” mentioned having three balanced meals a day and knowing how to cook for oneself.

“In Vietnamese cultures we generally eat a lot of vegetables so I’m used to incorporating them in meals that I cook when I get a chance to cook at home” [ID #204]

“We eat different variety of foods and it makes me happy to eat it.” [ID #675]

“Food acceptance” was the code that appeared with the most frequency. Answers that aligned with “Food acceptance” mentioned being able to enjoy both their cultural food and “American” food, and being open to trying a variety of foods. Additionally, there were responses that acknowledged eating both fruits and vegetables (or “healthy” foods), along with eating foods with added salt and sugar (or “unhealthy” foods), and being able to incorporate both into one’s diet.

“About the nutrition and what I eat each meal, I see Vietnamese people rarely pay attention to consume whole food and we prefer dishes that are mixed with many flavors. Therefore, my taste with food is quite salty.” [ID #71]

“My culture includes a lot of unhealthy and healthy foods, and I learned to appreciate it” [ID # 740]

Theme 2: Regulated Food Choice

This theme encompasses codes that indicate a conscious food choice that is adjusted for an outside influence other than simply preference for one’s cultural foods. We found that these regulated food choices were mentioned in regards to diet culture, health, the influence of sports, and as a result of food insecurity. Codes describing “Diet culture” are highlighted below:

“My family emphasizes skinniness and health so I have always kept that in mind with my eating.” [ID #72]

“Asian culture suggests smaller portions and less fattening foods so I feel like eating less and lower calorie meals” [ID #552]

In the application of the “Health choice” code, participants often mentioned “eating healthy” or going for “healthy” food choices, particularly vegetables. The child code “Vegetables” was applied when participants described eating vegetables resulting from the influence of their cultural background and not specifically for health reasons, indicating that vegetables are commonly integrated into SEA cooking.

“Vietnamese culture emphasizes the need to eat a broad range of food and to incorporate a lot of fruits and vegetables.” [ID #421]

Two participants described the culture of sports, rather than their cultural background, influencing their eating habits; additionally, four participants mentioned having to eat “cheap” meals or “whatever was available.”

Theme 3: Cultural Food Choice

Many participants indicated having a preference for their cultural food; only three participants stated that their cultural background had no influence on what they eat. Some participants stated a more general preference for “Asian food,” or for “rice” or “noodles.” Others indicated a preference for their specific ethnic cuisine.

Theme 4: Food Culture

This theme encompasses many interesting insights into SEA (and Asian) food culture. Broadly, the code of “Food culture” was applied when there were descriptions of a culture around food, but not explicitly attributed to SEA food culture. Specific foods were mentioned, such as meat, vegetables, and “carbs.” Some participants described their food cultures as associating food with family:

“I usually eat a lot more meat compared to vegetables; I eat whatever I'm given, so I'm not concerned too much about how much I should be eating, but rather finishing what I have been given at the moment when I'm at home with family.” [ID #892]

“As I grew up, my parents raised me to embrace foods from my culture and eat to meet my caloric/nutrient needs.” [ID #758]

“I was taught that meals should be enjoyed together, so I always have meals with my families.” [ID #286]

The child code “Asian food culture,” where participants explicitly attribute certain food traditions to being “Asian,” illustrated the importance of a combination of rice, meat, and/or vegetables, and specifically having rice as a staple grain.

“I grew up eating a lot of Asian food that consisted of a lot of rice, protein, and fresh veggies. My parents modeled this as I was growing up and I've incorporated this into my food choices as an adult.” [ID # 489]

Many participants described food traditions and beliefs from their specific SEA ethnicity, and these were coded with the grandchild code “SEA food culture.” These descriptions overlap with excerpts coded for “Food culture” or “Asian food culture,” but offer us deeper insight. This code also is concurrent with the “Rice” and “Balance” codes. The following quotes demonstrate shared traits around food and mealtimes among different SEA ethnicities:

“Large amounts of rice were extremely influential on my diet as a result of my Filipino upbringing” [ID #260]

“My upbringing and culture really tells me to eat rice as carbs. In my culture, we don't eat any other types of carbs besides rice. And Meals are often seen as a social activity, and it's common for food to be shared among everyone at the table. Respect for elders is important, and they are often served first. Indonesians typically eat three meals a day.” [ID #123]

“we eat a lot of carbohydrates and vegetables, as well as some protein. I'm from Vietnam.” [ID # 545]

“In Vietnamese culture, it's common for adults to give you a big serving of what they cooked” [ID #622]

“I am from Indonesia and the culture of my country is that rice is the staple food in all dishes, it gives me the right balance in protein, carbs, fats, and vegetables.” [ID #716]

Another sentiment shared among some participants was the idea of “Traditional food as healthy.” Though there were many descriptions of cultural food including fruits and/or vegetables, a few participants explicitly defined their own culture’s food as healthy:

“Also, considering that my cultural food is generally healthy, I tend to lean towards healthier options if possible” [ID #890]

“My culture does not prioritize eating nutrient abundant food as much as Americans do, but without doing so a lot of our foods already include vegetables.” [ID #876]

“vietnamese food is healthy in the sense of it contains greens, proteins, and rice” [ID # 515]

3.4 Code Frequencies

The code clouds depicted in Figure 3 show the frequency of codes between U.S.-born and immigrant SEA participants. Codes that were identified with relatively equal weights in both groups include “Food culture” and “SEA food culture.” In the U.S.-born SEA group, the codes “Diet culture,” “Food Acceptance,” and “Cultural food preference” were also highlighted. In the immigrant SEA group, “Food Acceptance” had slightly more weight, with “Balance” and “Rice” appearing to be emphasized. Figure 4 addresses our secondary aim, in which we hypothesized that the codes “Cultural food preference,” “SEA food culture,” “Rice,” and “Balance” would

have high frequency among participants that scored as EC. Both the EC and non-EC group appear to emphasize “Food culture” and “SEA food culture” in their responses. The EC group highlights “Cultural food preference,” “Asian Food Culture,” “Rice,” and “Balance,” while the non-EC group gave higher weight to “Diet culture.”

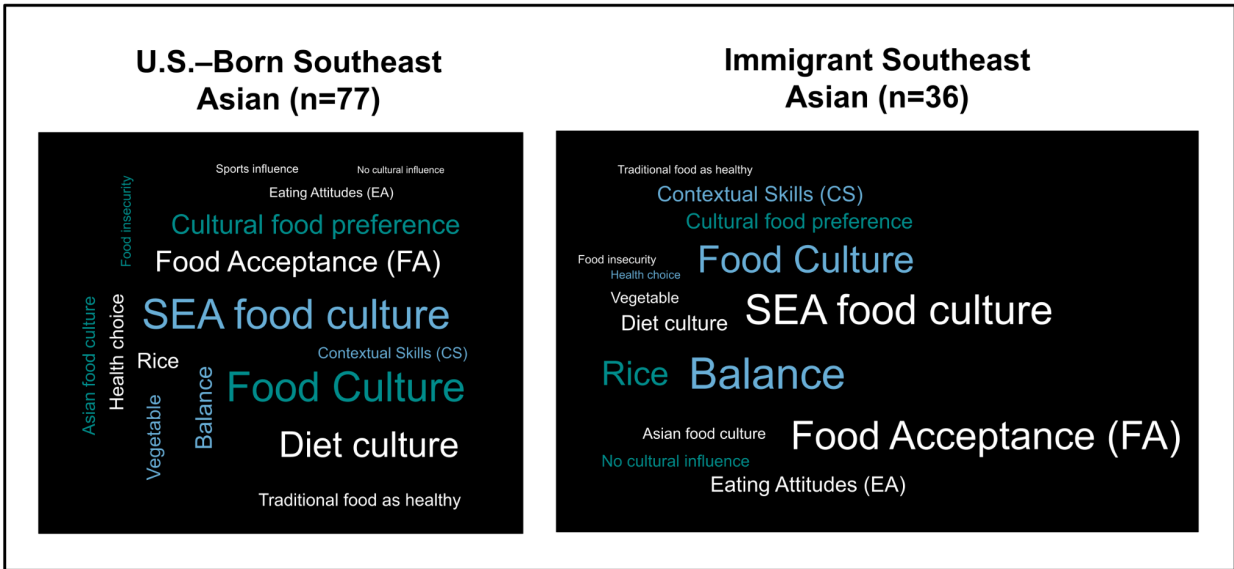


Figure 3. U.S.-Born vs Immigrant SEA Code Clouds

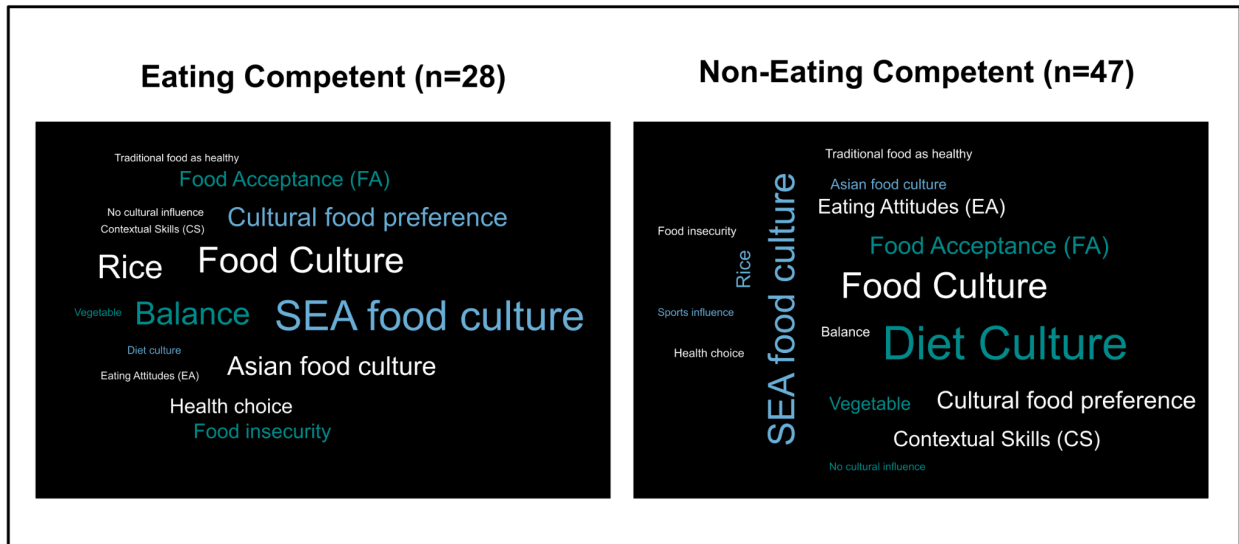


Figure 4. Eating Competent vs Non-Eating Competent Code Clouds (Valid Scores)

4. Discussion

4.1 Food Culture and Intersection with Eating Competence

SEA participants in this study were descriptive in their written responses to the qualitative question, “How does your culture and/or upbringing inform what and how you eat?” The themes of Eating Competence and Food Culture overlapped in ways that provide a better understanding of SEA food culture and how EC is exhibited in the SEA population.

“SEA food culture,” “Food culture,” and “Food acceptance” were the codes most applied in this analysis. Many participants described the food culture of their specific SEA ethnicity, such as the foods most commonly consumed in their culture; the value of specific foods; and how mealtimes are conducted. The general “Food culture” code was applied when a specific culture was not mentioned, but often started with the statement “My culture.” For example, “My culture usually tends to eat a lot of carbs and meat” [ID #81], “My culture appreciates choices and variety” [ID #39] and “My culture also emphasizes the need of having a soup to eat with solid food” [ID # 872]. The code “Balance” was another code often applied, and revealed an important value to mealtimes in SEA culture. In general, a SEA meal should have carbohydrates (typically rice), protein, and vegetables. Soup as a fourth component was also mentioned by participants. These findings align with research done on SEA cultures in their country of origin, and provides greater context for the SEA American population.^{17,18}

Codes for each domain of EC, except for internal regulation, were applicable to participant’s answers. Specifically, “Contextual skills” and “Food acceptance” were coded in conjunction with the codes “Food culture,” “SEA food culture,” and “Vegetables.” Participants that were coded for “Food acceptance” expressed an openness to trying new foods and flavors, often attributing this to growing up in a SEA household or around “diverse cultures,” and eating foods from their culture. Responses coded for “Contextual skills” described mealtime as being an important time to connect with family, and knowing how to prepare a meal being related to their cultural background. Responses coded for “Eating attitudes” had words such as “happy,” “enjoy,” “appreciate,” and “freedom” in regards to eating. These indicate that at least certain aspects, or even particular domains, of EC are prominent or more likely to be expressed in SEA culture. Whether that changes in regards to being a 1st or 2nd generation immigrant, or with level of acculturation to American culture, remains to be seen.

4.2 Diet Culture and Regulated Food Choices

Although diet culture is prevalent in many cultures, Asian culture as a whole has shared values when it comes to beauty standards, which includes a preference for slim figures.⁴¹ In fact, in a recent study among university students in SEA, a “significant majority of 81.8% of respondents” reported that “being skinny” was considered the beauty standard.⁴¹ Some participants in our analysis that were coded for “Diet culture” described altering their food choices due to these influences. A notable difference was observed in the weight given to the “Diet culture” code between EC and non-EC SEA groups (see Figure 4). This code seems to

hold little weight in the EC group, and the opposite is observed in the non-EC group. As both groups gave higher value to “SEA Food Culture” and “Food Culture,” we reason that those in the EC group may be influenced by aspects of their culture that promote EC, while those in the non-EC group may be influenced by aspects of their culture that contradict EC. Someone with a SEA background may not be inherently prone to higher EC, but it might be that those of SEA background that embrace certain aspects of their culture over others are likely to be EC.

Related but separate codes were “Health choice” and “Vegetables.” “Health choice,” although a conscious restriction of one’s food habit, was different from “Diet culture” in that restriction for body shape or size was not mentioned. In this code, it was likely for participants to mention the types of foods they ate (fruits, vegetables) or did not eat (excess carbohydrates, “junk” food) to promote health or prevent disease. “Vegetables” was a child code that was created for the description of vegetables as essential at mealtimes, and was coded in two instances: when mentioned as a standalone food group (to differentiate from the code “Balance”) and when mentioned but not explicitly connected to Asian or SEA culture. Due to these specific application criteria, the “Vegetables” code is not featured as prominently as the aforementioned codes. This demonstrates that although descriptions of a typically “healthy” food like vegetables are aplenty, they are often tied to participants’ cultural norms or traditions.

4.3 Limitations

The major limitation to this study was the high proportion of duplicate submissions and/or non-valid responses to the ecSI 2.0™. Out of the 134 SEA participants, 35 entries were found to be from students that submitted more than one submission, with cases of three submissions from one student. From the non-duplicate answers, 30.5% of the SEA participants were found to have non-valid ecSI 2.0™ scores. This study is the first to have such a high frequency of scores of 6 or lower; this is a new phenomena within the college student population when compared to previously published research.^{42,43} Our methodology for identifying and setting a cutoff for validity of ecSI 2.0™ scores (at 6 or below, or another number) needs follow up from additional datasets to further validate and define a non-valid ecSI 2.0™ score. Other limitations such as short responses to the qualitative question, lack of generalizability to the wider SEA American population due to the demographics of participants (undergraduate University of Washington students), and possibly overlooking SEA ethnic groups without a defined country of origin (such as Hmong) should be considered.

4.4 Future Research

Translation of the ecSI 2.0™ to a SEA language and its use in SEA countries has not previously been done. Currently, the only Asian language the ecSI 2.0™ is translated to is Japanese. Unlike other regions such as the Anglosphere or Latin America which may share a common language like English or Spanish across borders, SEA countries each have their own distinct language. Thus, a whole subregion is yet to be explored using the ecSI 2.0™ instrument. In the U.S., EC research has not looked in depth at the SEA American population. Future

research is needed to assess EC and factors that positively impact EC in the SEA American population.

5. Conclusion

At this time, we did not find a difference in ecSI 2.0™ scores between U.S.-born and immigrant SEAs. Qualitative answers revealed insight into the experience of SEA Americans in regards to food, family, and upbringing, and how EC appears in SEA culture. Future research is needed to better understand how EC manifests in SEA populations. We infer that SEA culture, like any other culture, will have aspects that promote or hinder EC; those who have higher EC may be embodying those promoting factors, while those with lower EC may be lacking in promoting factors and/or embodying hindering factors.

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Appendix

Final Codebook

Theme	Code	Definition	Example
Eating Competence	Eating Attitudes (EA)	Positive, relaxed, flexible attitude around food. Responsively attuned to outer and inner experiences relative to eating, including relaxed expectation of hedonic rewards from eating	<ul style="list-style-type: none"> • A positive interest in food and eating. • Responsive attunement to inner and outer food experiences. • Relaxed self-trust about managing food and eating. • Harmony among food desires, food choices, and amounts eaten.
	Food Acceptance (FA)	Nutritional status maintained through intrinsic motivation to eat a variety of food, including nutritious food: genuine enjoyment and learned food preferences	<ul style="list-style-type: none"> • Being calm in the presence of food, including unfamiliar and disliked food items. • Being comfortable with eating preferred food, including food that is high in sugar, salt, and fat. • Being inclined to experiment with novel food and eventually include it as part of a personal food repertoire.
	Contextual Skills (CS)	Prioritizes <i>structure</i> and <i>meal planning</i> : Emphasizes strategic meal-planning principles in tandem with strong permission to eat adequate amounts of preferred food at predictable times.	<ul style="list-style-type: none"> • Having the skills and resources to procure and/or provide adequate amounts of rewarding food at predictable intervals. • Being able to make meals intrinsically rewarding by choosing preferred food, and choosing food to satisfy nutritional needs

Regulated Food Choice	Diet culture	Answers that mention food restriction, focus on counting calories, equate thinness to health, or categorize foods as “bad” or “unhealthy.”	ID #490: “I grew up in Asia where being 'skinny' is seen as the ideal weight no matter how healthy you are. Growing up, and even today sometimes that makes me compare my body to others. I should not keep eating junk food according to some of my family.”
	Health choice	Description of health as being a factor in certain food choices or habits	ID #746: “I tend to eat a variety of foods because due to health conditions my family carries on.”
	↪ <i>Vegetables</i>	Mentions of vegetables as necessary for meals or health.	ID # 502: “I grew up in a household that incorporated a lot of fresh vegetables in meals, so I always need some sort of vegetable with every meal and snack”
	Sports influence	Description of sports influencing one’s food choices and habits	ID #408: “I grew up competing in many sports, so I pay a lot attention to how healthy I am eating and what foods can help nourish my body best.”
	Food insecurity	Descriptions of lack of access to food or certain types of foods, due to cost barrier or lack of availability.	ID #731: “My mother always made sure to kept us fed every dinner with often homecooked meals or a cheap, big portion take out meal at Costco. She got by for her and her family through struggling lay offs and market crashes where money was very tight.”
Cultural Food Choice	Cultural food preference	Indication of preference for one’s own cultural foods	ID #538: “I tend to eat foods from culture a lot because they bring me comfort”
	No cultural influence	Describes culture as having no influence on food choices	ID #279: “My culture and upbringing doesn't really inform me how I eat.”

Food Culture	Food Culture	Answers that identify certain food or food customs, but does not specify to which cultural group.	ID #626: “As I grew up, my family had no qualms with letting us eat however much we wanted, but also taught us to never waste food”
	↪ <i>Balance</i>	Mentions of “balance” in meals or between foods (namely carbohydrate, vegetable, and protein) as an influence from one’s culture/upbringing	ID #491: “Every meal, I am fed with a source of protein, vegetable and carbs”
	↪ <i>Rice</i>	Mentions of “rice” being essential to mealtimes as an influence from one’s culture/upbringing	ID #134: “My culture involves eating almost every meal with rice and I know that affects how I eat because I must have rice to feel full”
	↪ <i>Asian food culture</i>	Answers that identify certain foods or food customs as being characteristic of general Asian culture or a non-SEA culture.	ID #1025: “growing up with mainly asian culture means what i eat usually contains a lot of carbs and grains like rice and noodles”
	↪ SEA food culture	Answers that identify certain foods or food customs as being specific to SEA culture overall, or to their specific SEA identity.	ID #204: “In Vietnamese cultures we generally eat a lot of vegetables”
	Traditional food as healthy	Descriptions about traditional foods of one’s culture being healthy, or healthier than other diets	ID #890: “Also, considering that my cultural food is generally healthy, I tend to lean towards healthier options if possible (within my budget.)”