

Examining the Turkish Validity and Reliability of the Sustainable Food Choice Questionnaire in University Students: A Methodological Study

Üniversite Öğrencilerinde Sürdürülebilir Gıda Seçimi Anketi'nin Türkçe Geçerlik ve Güvenirliğinin İncelenmesi: Metodolojik Çalışma

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ABSTRACT Objective: This study aimed to determine the validity and reliability of the Turkish version of the Sustainable Food Choice Questionnaire (SUS-FCQ) among university students. **Material and Methods:** The validity and reliability of the Turkish SUS-FCQ scale were tested. This study was conducted with 439 Turkish university students. Confirmatory factor analysis (CFA), fit indices, and descriptive statistics were used to evaluate the data. The study used the most commonly used fit indices, χ^2/df , Incremental Fit Index, Comparative Fit Index, root mean square error of approximation, and standardized root mean square residual, to assess the model-data fit. The reliability coefficient of the scale was evaluated as having reliability above 0.60, between 0.61-0.80 as having an acceptable medium level of reliability, and between 0.81-1.00 as having a very high level of reliability. **Results:** Cronbach's alpha coefficient of the scale was determined to be 0.976 (excellent). According to the CFA findings, all scale items were statistically significantly grouped under 2 dimensions ($p<0.05$). In the study, the suitability of the scale items to the model was also supported by the evaluated fit indices. In addition, according to the scale, all factor and sub-factor scores except the local and seasonal factor were higher in women ($p<0.05$). **Conclusion:** The results of this study showed that the adapted SUS-FCQ is valid and reliable for determining sustainable food choice motivations in Turkish university students. The Turkish version of the SUS-FCQ for university students may help encourage sustainable food and nutrition for these individuals.

ÖZET Amaç: Bu çalışmada, üniversite öğrencilerinde Sürdürülebilir Gıda Seçimi Anketi'nin [Sustainable Food Choice Questionnaire (SUS-FCQ)] Türkçe geçerlilik ve güvenilirliğinin belirlenmesi amaçlanmıştır. **Gereç ve Yöntemler:** Bu çalışmada, SUS-FCQ'nun Türkçe geçerlilik ve güvenilirliği test edilmiştir. Çalışma, 439 Türk üniversite öğrencisi ile yürütülmüş olup, verilerin değerlendirilmesinde doğrulayıcı faktör analizi (DFA), uyum indeksleri ve tanımlayıcı istatistikler kullanılmıştır. Çalışmada, model-veri uyumunu değerlendirmek amacıyla en sık kullanılan uyum indekslerinden χ^2/sd , Fazlalık Uyum İndeksi, Karşılaştırmalı Uyum İndeksi, yaklaşık hataların ortalama karekökü ve standartlaştırılmış hata kareleri ortalamasının karekökü kullanılmıştır. Ölçeğin güvenilirlik katsayısı 0,60'ın üzerinde ise güvenilirliğe sahip, 0,61-0,80 arasında ise kabul edilebilir orta düzeyde, 0,81-1,00 arası ise oldukça yüksek düzeyde güvenilirliğe sahip olarak değerlendirilmiştir. **Bulgular:** Çalışmada, ölçeğin Cronbach alfa katsayısı 0,976 (mükemmel) olarak belirlenmiştir. DFA bulgularına göre ölçek maddelerinin tamamı istatistiksel olarak anlamlı bir şekilde 2 boyut altında toplanmıştır ($p<0,05$). Çalışmada, ayrıca ölçek maddelerinin modele uygunluğu değerlendirilen uyum indeksleri ile de desteklenmiştir. Ayrıca ölçeğe göre yerel ve mevsimsel faktörü dışındaki tüm faktör ve alt faktör skorlarının, kadınlarda daha fazla olduğu saptanmıştır ($p<0,05$). **Sonuç:** Bu çalışmanın sonuçları, uyarlanmış SUS-FCQ'nun Türk üniversite öğrencilerinde sürdürülebilir gıda seçimi motivasyonlarını belirlemek için geçerli ve güvenilir olduğunu göstermiştir. Üniversite öğrencileri için SUS-FCQ'nun Türkçe versiyonu, bu bireyler için sürdürülebilir besin ve beslenmeye teşvik açısından yararlı bir araç olabilir.

Keywords: Validity; food choice; reliability; sustainability

Anahtar Kelimeler: Geçerlik; gıda seçimi; güvenilirlik; sürdürülebilirlik

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Sustainability involves the concept of producing responsibly so as not to harm current or future living beings, with an understanding that resources are limited. According to the World Commission on Environment and Development, sustainability is defined as “meeting the needs of today’s generation without compromising the ability of future generations to meet their needs”.¹ Sustainable nutrition represents “a dietary system that has a low environmental impact, supports food security, and promotes a healthy lifestyle for both current and future populations.” It is culturally respectful, accessible, economically fair, affordable, nutritionally balanced, safe, and health-promoting while also conserving biodiversity and ecosystems, acknowledging the importance of both natural and human resources.¹ This approach emphasizes minimizing the intake of highly processed, packaged foods high in energy density while encouraging a plant-based diet and reducing animal-derived foods in proportion to individual energy needs.^{2,3}

Food choices are essential to diet sustainability, making it vital to understand what consumers prefer to align with sustainability objectives.⁴ These choices and sustainable eating habits are complex and driven by factors like economy, social norms, religion, demographics, and culture. Additionally, achieving a balance between elements such as food security, local sourcing, water use, animal welfare, and fair labor conditions makes it challenging to fully grasp the motivations behind sustainable food choices.^{5,6} From the consumer’s perspective, 2 main sustainable behavior strategies arise: choosing products based on sustainable production practices (like organic or fair-trade products) and limiting consumption of specific items (e.g., reduced meat intake). Research into how these strategies can be understood and encouraged is an important yet under-explored area in sustainable food behavior. Thus, identifying sustainable food choice motivations is crucial for promoting sustainable diets and contributing to global sustainability goals. Several assessment tools have been developed to measure these motivations, including the Sustainable Food Choice Questionnaire (SUS-FCQ).⁷⁻⁹ This tool measures factors related to environmental impact, animal welfare, fair trade, and local or seasonal aspects of food choices.⁴

While there are studies on sustainable dietary habits, no specific tool exists for measuring sustainable food choices within our society, limiting our access to relevant information. For instance, no sustainable food choice assessment tool has been adapted for Turkish university students, a group representative of young adults. As university students’ food choices significantly impact sustainable nutrition, understanding these preferences can support the development of more sustainable lifestyles.^{10,11} Gaining insight into the motivations behind food choices in this demographic is crucial for raising awareness among future generations, fostering sustainable dietary behaviors, and addressing current issues like hunger, future food security, and environmental challenges.^{4,12} Consequently, validating an internationally recognized scale for university students is essential and timely to ensure it is reliable nationwide. This study aims to validate and test the reliability of the SUS-FCQ with university students, examine their motivations toward sustainable food choices, and provide a foundation for future research.

MATERIAL AND METHODS

STUDY DESIGN AND PARTICIPANTS

This study was conducted face-to-face between September-December 2024 with 439 university students aged 19-30 who read the informed consent form and agreed to participate. The study did not include individuals who were not in the specified age range and did not have the cognitive level to answer the scale questions. Sociodemographic data including age, gender, marital status, smoking status and alcohol use were collected through a questionnaire. The study’s sample size was determined to be 5-10 times the number of items on the scale to conduct validity and reliability analyses.^{13,14} In this context, the sample size, which is a prerequisite for conducting validity and reliability analyses during the adaptation of the scale to Turkish, was targeted to be between 205-410 to determine the validity and reliability of the scale when adapting it to a different language and culture. The study sample was expanded, and the study was completed with 439 university students. The study population consisted of students from the

Ankara University Faculty of Health Sciences, and participation in the study was approximately 22%. This study received approval from the Ankara University Health Sciences Sub-Ethics Committee (date: 03.04.2024, no: 06/59). Communication was established via e-mail for the validity and reliability study of the SUS-FCQ, and the necessary permissions were received to adapt the scale. This study was conducted in accordance with the principles of the Declaration of Helsinki.

SUSTAINABLE FOOD CHOICE QUESTIONNAIRE

SUS-FCQ was developed to understand the sustainability motivations behind individuals' food consumption behaviors and to measure sustainability motivations across the full spectrum of food choice factors. The scale includes two factors, the first factor being the concept of "general sustainability", and the categories of animal welfare, ethical concern, and environmental welfare are included under this factor. The second factor is stated as "local and seasonal". The animal welfare factor (Q1-Q5) consists of items addressing the ethical treatment of animals, such as whether products are produced without animal suffering, in an animal-friendly manner, and in a way that respects animal rights, whether animals are provided with sufficient space, and whether the product is free-range. The ethical concern factor (Q6-Q8) included items related to social ethics, such as exploitative production, child labor-free production, and fair trade. The environmental well-being factor (Q9-Q13) included items assessing environmentally friendly practices, such as preparation and production methods that minimize environmental impact, production without disturbing the balance of nature, minimal CO₂ emissions, and environmentally friendly packaging. Finally, the local and seasonal factor (Q14-Q16) included items assessing the origin and seasonality of products, such as whether the product originates locally, seasonally, or from nearby locations. For each item within the scale, participants were asked to indicate the importance of these aspects in relation to the food they eat on an ordinary day. The scale assessment is Likert-type, ranging from "1=not important at all" to "7=very important", and individuals were asked to make choices within this

range. The SUS-FCQ is explained in more detail in the original study.⁴

SUS-FCQ LANGUAGE ADAPTATION, VALIDITY AND RELIABILITY ANALYSES

In order to adapt the scale to Turkish, the 16-item SUS-FCQ was translated from English to Turkish and then from Turkish to English by 5 expert dietitians who are experts in their fields and have a good command of English and 1 sworn translator and interpreter who is experienced in the field of health, in a period of approximately 2 weeks, using the translation-back translation method. After the items in these 3 separate translations were individually evaluated regarding meaningfulness and understandability, the most appropriate translations were brought together, and the Turkish scale translation was prepared. The expert panel evaluated each item for clarity, relevance, and cultural appropriateness, and consensus was reached. After the Turkish translation of the SUS-FCQ was created, a preliminary application was made to 10 adult individuals with characteristics similar to those of the group in which the study would be conducted. It was tested whether there were any expressions or items in the scale that were not understood. As a result of this preliminary application study, it was determined that the scale took an average of 10-15 minutes, and there was no problem in understanding. In addition, the fit indicators indicating model data fit for the SUS-FCQ adapted to Turkish were used and interpreted as stated in the literature.^{15,16} In scale studies, when the reliability coefficient of the scale is above 0.60, it is interpreted as having reliability. If it is between 0.61-0.80, there is an acceptable medium level of reliability; if it is between 0.81 and 1.00, there is a significantly high level of reliability. Cronbach's alpha internal consistency coefficient takes a value between 0 and 1, and when the coefficient approaches 1, it is interpreted as the tested scale being perfectly reliable.

STATISTICAL ANALYSIS

The structural validity of the scale was tested with confirmatory factor analysis (CFA), and the reliability (internal consistency) analysis was performed with reliability and item analysis (Cronbach's α coefficient). The confirmatory structural validity of the

SUS-FCQ was tested based on the original scale. CFA was used to test the structural validity of the adapted scale. Since the scale data were categorical, the diagonal weighted least squares technique was used in the estimation phase. The reliability of the scale was tested using test-retest and internal consistency analyses. The reliability of the scale was tested using test-retest and internal consistency analyses. To examine test-retest reliability, the final Turkish version of the scale was administered to 45 adult volunteers twice, 15 days apart. The conformity of the data collected from the adult individuals constituting the sample to the desired model was analyzed using R Studio (R Foundation for Statistical Computing, Vienna, Austria) software.¹⁷ An independent sample t-test was also used to examine the relationship between adapted scale scores. The study used the SPSS (IBM SPSS Statistics, IBM Corp., Armonk, NY, USA) version 27.0 program to evaluate the obtained data and create tables. A CFA method was performed using R Studio software for scale analyses. $p < 0.05$ was accepted as the significance level in all statistical analyses.

RESULTS

The frequency distribution and descriptive statistics of the demographic information of the individuals participating in the study are given in Table 1. Of the individuals participating in the study, 66.5% ($n=292$) were female and 33.5% ($n=147$) were male. The mean age of all individuals was found to be 26.46 ± 5.57 years (Table 1).

Table 2 shows the results of the descriptive analysis of the sub-items of SUS-FCQ and the results of the Cronbach alpha reliability analysis of SUS-FCQ. According to these results, the highest item mean in factor 1 was item 7, the lowest was item 12, the highest item mean in factor 2 was item 1, and the lowest was item 3. As a result of the reliability analysis, the corrected lower and upper correlation limits for the SUS-FCQ items were obtained, and all corrected correlations were positive. The Cronbach alpha coefficient of the scale was determined as 0.976 (perfect). In addition, since no significant increase or decrease in reliability/coefficient was observed when an item was removed, no item was removed from SUS-FCQ (Table 2).

TABLE 1: Basic demographic characteristics of study individuals

Variables	
Age (years), $\bar{X} \pm SD$	26.46 \pm 5.57
Minimum-maximum	19-30
Gender, n (%)	
Male	147 (33.5)
Female	292 (66.5)
Marital status, n (%)	
Single	334 (76.1)
Married	105 (23.9)
Smoking status, n (%)	
Yes	135 (30.8)
No	252 (57.4)
Quit	52 (11.8)
Alcohol use, n (%)	
Yes	161 (36.7)
No	278 (63.3)

Values are expressed as n (%) and $\bar{X} \pm SD$; SD: Standard deviation

Table 3 shows the item-based CFA for the SUS-FCQ. According to the CFA findings, it was seen that the standardized loading values were above 0.30 and all the scale items were statistically significantly grouped under 2 dimensions ($p < 0.05$) (Table 3).

Model fit indexes are evaluated in Table 4. There are many model data fit indices in the literature for model data fit. In this study, the most frequently used fit indices were the relative chi-square (χ^2/df), Incremental Fit Index, Comparative Fit Index, root mean square error of approximation, and standardized root mean square residual. In the fit index results, a perfect fit was obtained for other index values except the standardized root mean square residual value, and a good fit was obtained for the standardized root mean square residual value (Table 4). In addition, the Adjusted Goodness of Fit Index value was determined as 0.990, the Goodness of Fit Index value was defined as 0.993, and these values ≥ 0.90 indicate that the model is well fit. In addition, average variance extracted values > 0.50 and composite reliability values > 0.70 indicate that the convergent validity of the scale is provided. According to average variance extracted and composite reliability values in this study, the model was determined as a good fit.^{18,19} Discriminant validity between the factors was examined using the Fornell-Larcker criterion. According to the table, the square root of the average variance extracted for

TABLE 2: The scores of SUS-FCQ's items and reliability analysis

Item	$\bar{X}\pm SD$	Minimum-maximum	Cronbach alpha if item deleted	Corrected item-total correlation	Confidence coefficient-Cronbach alpha	McDonald's Ω	Test-retest reliability coefficients	
							r value	p value
SUS-FCQ				[0.718, 0.919]		0.98	0.77	<0.05
General sustainability (Factor I)								
Q1	4.05±1.87	1-7	0.968		0.976			
Q2	3.97±1.86	1-7	0.968					
Q3	4.07±1.86	1-7	0.968					
Q4	4.01±1.78	1-7	0.967					
Q5	3.99±1.70	1-7	0.970					
Q6	4.49±1.82	1-7	0.968					
Q7	4.61±1.87	1-7	0.967					
Q8	4.43±1.76	1-7	0.968					
Q9	4.29±1.76	1-7	0.967					
Q10	4.29±1.73	1-7	0.966					
Q11	4.26±1.72	1-7	0.967					
Q12	3.86±1.63	1-7	0.969					
Q13	4.10±1.69	1-7	0.968					
Local and seasonal (Factor II)								
				[0.680, 0.865]				
Q14	4.17±1.67	1-7	0.758		0.884			
Q15	4.15±1.61	1-7	0.759					
Q16	3.87±1.58	1-7	0.890					

Data are presented as $\bar{X}\pm SD$; SD: Standard deviation; SUS-FCQ: Sustainable Food Choice Questionnaire

TABLE 3: The confirmatory factor analysis of the SUS-FCQ

Item	β	SE	STD (β)	Error variance	z value	p value
General sustainability (Factor I)						
Q1	1.000		0.845	1.102		
Q2	0.960	0.037	0.811	1.169	25.875	<0.001
Q3	0.952	0.037	0.805	1.135	25.764	<0.001
Q4	0.941	0.036	0.846	0.996	26.276	<0.001
Q5	0.825	0.034	0.739	1.326	24.473	<0.001
Q6	1.054	0.038	0.880	0.861	27.411	<0.001
Q7	1.068	0.038	0.882	0.950	27.922	<0.001
Q8	1.033	0.037	0.908	0.666	27.551	<0.001
Q9	1.082	0.039	0.938	0.476	27.954	<0.001
Q10	1.039	0.037	0.925	0.495	27.727	<0.001
Q11	0.967	0.036	0.875	0.682	27.026	<0.001
Q12	0.895	0.034	0.843	0.858	26.200	<0.001
Q13	0.961	0.036	0.880	0.769	26.849	<0.001
Local and seasonal (Factor II)						
Q14	1.000		0.945	0.393		
Q15	0.934	0.040	0.920	0.555	23.216	<0.001
Q16	0.702	0.035	0.697	1.419	20.101	<0.001

SUS-FCQ: Sustainable Food Choice Questionnaire; β : Standardized coefficient; SE: Standard error; STD (β): Standardized regression coefficients

TABLE 4: Model fit indexes

Index	Perfect fit measure	Good fit measure	Research finding	Conclusion
CMIN/df	0-3	3-5	1.084	Perfect
IFI	0.95≤ IFI ≤1.00	0.90≤ IFI <0.95	0.999	Perfect
CFI	0.95≤ CFI ≤1.00	0.90≤ CFI <0.95	0.999	Perfect
RMSEA	0.00≤ RMSEA ≤0.05	0.05< RMSEA ≤0.10	0.019	Perfect
SRMR	0.00≤ SRMR ≤0.05	0.05< SRMR ≤0.08	0.063	Good
Factor	AVE		CR	
General sustainability (Factor I)	0.742		0.975	
Local and seasonal (Factor II)	0.748		0.895	
	Dimension 1. general sustainability (F1)		Dimension 2. local and seasonal (F2)	
Dimension 1. general sustainability (F1)	0.861		0.736	
Dimension 2. local and seasonal (F2)	0.736		0.865	

CMIN/df: Chi-square (χ^2 /degrees of freedom); IFI: Incremental Fit Index; CFI: Comparative Fit Index; RMSEA: Root mean square error of approximation; SRMR: Standardized root mean square residual; CR: Composite reliability; AVE: Average variance extracted; Bold values on the diagonal represent the square root of AVE. Values below the diagonal show the correlations between the factors.

TABLE 5: Comparison of the total scores and sub-dimensions of the SUS-FCQ according to gender

Factor		$\bar{X}\pm SD$	Minimum-maximum	t value	p value	Hedges' g
General sustainability (Factor I)	Female	56.36±19.71	13-91	-2.950	0.003	0.298
	Male	50.50±19.48				
	Total	54.40±19.80				
Factor I subfactors						
Animal welfare	Female	20.98±8.33	5-35	-3.147	0.002	0.319
	Male	18.37±7.85				
	Total	20.10±8.26				
Ethical concern	Female	14.04±5.16	3-21	-2.982	0.003	0.300
	Male	12.5±5.07				
	Total	13.53±5.18				
Environmental welfare	Female	21.34±7.84	5-35	-2.128	0.034	0.215
	Male	19.63±8.11				
	Total	20.77±7.96				
Local and seasonal (Factor II)	Female	12.45±4.28	3-21	-1.761	0.079	0.177
	Male	11.69±4.33				
	Total	12.20±4.31				
SUS-FCQ total score	Female	68.81±22.71	16-112	-2.879	0.004	0.291
	Male	62.19±22.8				
	Total	66.59±22.93				

SD: Standard deviation; SUS-FCQ: Sustainable Food Choice Questionnaire

each factor (diagonal values) was higher than its correlations with the other corresponding factor (F1: 0.861; F2: 0.865). This result indicates that the 2 factors are distinguishable from each other and confirms that the discriminant validity condition has been met.

SUS-FCQ total and subscale scores are shown in Table 5. According to the table, all factor and subfactor scores except the local and seasonal factor were found to be higher in women ($p<0.05$) (Table 5).

DISCUSSION

This study aims to adapt the SUS-FCQ for university students in the young adult group in Türkiye. This study aims to evaluate the validity of the original Turkish version of the SUS-FCQ in university students and is the first validation attempt on this subject in this population. The Turkish version of the scale was administered to university students through face-to-face interviews, and analysis was performed on data obtained from 439 participants.

The most important finding of this study is the determination that sustainability motivations are shaped in 2 separate dimensions. The item-total correlations and Cronbach alpha coefficients between the SUS-FCQ items were examined, and accordingly, the Cronbach alpha value of the scale was calculated as 0.976. Considering that in the literature, the Cronbach alpha coefficient varies between 0 and 1, and the scale's reliability increases as it approaches 1, it was seen that this value was perfectly reliable in this study. The correlations of all items with the total score were also positive and above 0.05, indicating that the scale is a holistic measurement tool. In a study conducted with SUS-FCQ in a different country, the Cronbach alpha coefficient was similar to this study.⁴ In another study in which some of the sub-dimensions related to the factors included in the SUS-FCQ were included and applied, the Cronbach alpha coefficient was similar to this study.⁹ This research contributes to the literature and other similar studies by revealing that environmental, ethical, and animal welfare elements can be evaluated under a single dimension in the context of consumer motivations.^{9,20} Studies on consumer perceptions and perspectives on local and seasonal production show that these concepts are associated with sustainable food consumption.^{21,22} Local and seasonal consumption is often not questioned within the scope of sustainable food consumption or investigated independently of other sustainability elements.^{23,24} Studies showing the possible contributions of local and seasonal food consumption to the environment show that this approach may be important.^{4,25} This study also emphasizes that the local and seasonal factors are separate from the environmental sustainability dimension in terms of con-

sumer motivations, and reveals the importance of evaluating this issue separately. This approach is also consistent with other similar studies that include the local and seasonal factors.^{4,9} These findings show that the importance of local and seasonal production should not be ignored when examining sustainability from a consumer perspective. The SUS-FCQ or some of the factors and sub-dimensions included in the SUS-FCQ have been used to assess various sustainability motivations and have been proven to be a reliable and valid scale applicable in different countries.^{4,9} Therefore, the results of this study show that the SUS-FCQ provides sufficient reliability and validity evidence supporting its usability.

Food production and consumption are associated with several major environmental impacts, such as greenhouse gas emissions, water pollution, and biodiversity loss, which the growing global population will exacerbate. At the same time, environmental sustainability and food security are key determinants of human health.²⁶ Therefore, food production and consumption's environmental, social, and economic consequences cause significant problems in developed and developing countries.²⁷⁻²⁹ In this respect, the current food system is inadequate in terms of ensuring sustainability. The sustainable development goals established by the United Nations Environment Programme aim to reduce food waste in 2015 and to provide safe food for all by 2030.³⁰ However, according to the 2023 Sustainable Development Report, many countries, including Türkiye, are falling short of making progress in this direction worldwide, and Türkiye ranks 72nd among 193 countries.^{31,32} Many determinants of sustainable food choices include positive attitudes towards sustainable food, social and personal norms, and interaction with information about sustainability and sustainable foods.^{11,29} The food choices of university students are also of great importance in sustainable nutrition. Sustainable food consumption is increasingly taken into consideration, especially among the younger generations. Research shows that personal attitudes, social environment, and consumption habits focused on local production are prominent among the factors affecting the food choices of university students. In particular, it has been observed that the orientation towards local and

seasonal products plays an important role in sustainable food consumption behaviors. Students generally make such choices in line with environmental impacts, health benefits, and social norms.¹⁰ Research shows that gender differences are significant in university students' interest in sustainability issues, with female students exhibiting higher motivation for issues such as animal and environmental welfare and ethical concerns.^{33,34} A study conducted in 22 different countries on attitudes towards animal welfare found that women had more positive attitudes than men.³³ A study conducted in the United States of America emphasized that female engineering students' interest in environmental issues is significantly higher than that of males, and that women are sensitive to environmental protection and animal rights issues and exhibit positive attitudes.³⁵ In this study, it was determined that animal and environmental welfare and ethical concern factor scores under the general sustainability factor, other than the local and seasonal factor, were significantly higher in female students. With these results, similar to studies conducted in other countries, this study may be a pioneering study that reveals that SUS-FCQ can be used as a global measurement tool in specific populations, such as university students, to understand sustainable food choices and their motivations in Turkish society. With these aspects, SUS-FCQ prepares the ground for more comprehensive studies in Turkish culture, and its Turkish adaptation may be addressed and expanded in future studies.

Although this study used a heterogeneous sample, some important limitations exist and should be considered. First of all, it should be noted that the number of women among the study participants was significantly higher than that of men. This may create bias in the analysis of gender-based differences and limit the generalizability of the results. Since the information provided by the participants about their own thoughts and behaviors is based on subjective perceptions, it is important to use alternative research methods such as experimental methods or direct observation to obtain more objective and reliable data. In addition, not considering the sub-dimensions one by one and collecting them as sub-dimensions under a single dimension may also be a limitation because

differences in dimensions can be observed when considered individually. Future research should focus on these points and use different methods to obtain more comprehensive data on sustainable food choices. Finally, such studies will help develop applicable strategies for various social groups and increase social awareness on sustainable food choices. Thus, a more comprehensive understanding and strategy on sustainable food choices can be created both at national and international levels.

CONCLUSION

This study strongly supported the reliability of the SUS-FCQ using CFA and fit indices. Future studies can provide more information in this area by applying similar methods to better understand the social, cultural and economic factors that affect sustainable food choices. In addition, it is thought that investigating the effects of education programs at local and national levels in order to increase sustainability awareness can make significant contributions to public awareness and policy development processes.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

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