



Tropentag, September 10-12, 2025, hybrid conference

“Reconcile land system changes
with planetary health”

Traditional and modern consumption patterns of dried fruits and nuts in central Asia: A cross-country analysis

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Abstract

As global demand for healthy and sustainable foods continues to grow, consumption patterns in Central Asia's traditional dried fruits and nuts sector are undergoing a notable transformation. Despite the sector's cultural and economic significance, little is known about the structure of consumer demand and the socio-demographic factors shaping it. This study addresses this gap by examining consumer preferences across four Central Asian countries: Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan. A survey among 2500 respondents was administered in urban and rural areas across the region. Principal Component Analysis (PCA) was applied to condense 45 attitudinal and behavioural variables into 12 underlying PCAs, including dimensions such as traditional preferences, environmental concern, social responsibility, health motivation, production preferences, and modern consumption. These PCA scores served as inputs for K-means clustering, which identified six consumer segments: Cultural Traditionalists (16.3 %), Organic Experientialists (6.2 %), Health-Focused (24.5 %), Ethical Consumers (34.5 %), Digital Innovators (1.7 %), and Indifferent Consumers (16.8 %). A cross-country comparison revealed heterogeneity in segment distributions. Kazakhstan exhibited the highest share of Ethical Consumers and Organic Experientialists, suggesting a stronger adoption of globally aligned sustainable food values. In contrast, Kyrgyzstan and Tajikistan demonstrated a more traditionalist profile, with high levels of Cultural Traditionalists and Health-Focused consumers, pointing to the continued importance of domestic use and culturally embedded practices. Uzbekistan stood out for its large Health-Focused segment and substantial Indifferent Consumers, indicating a duality in its consumer landscape. Finally, Multinomial Logistic Regression was applied to examine how socio-demographic factors influence cluster membership. Gender and age emerged as the most consistent predictors, with younger and female consumers more likely to belong to modern-oriented segments. Education and income were positively associated with Ethical and Digital consumer types, while rural residence and larger family size were more common among traditional and indifferent consumers. These insights highlight the importance of tailored marketing and policy strategies to promote sustainable consumption behaviours in Central Asia's transitioning food systems.

Keywords: Central Asia, consumer segmentation, dried fruits, K-means clustering, Kazakhstan, Kyrgyzstan, Multinomial Logistic Regression, nuts, Principal Component Analysis, Tajikistan, Uzbekistan