

Lifestyle Patterns of Young Consumers: Linking Food-Related Lifestyles and Physical Activity*

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Abstract

The study aims to examine the relationship between food-related lifestyle patterns and physical activity among young consumers. The motivation for this research stems from the growing importance of promoting healthy lifestyles and understanding how different lifestyle dimensions interact, particularly in the context of diet and physical activity, which are key determinants of long-term health outcomes. Although both food-related lifestyles (FRL) and physical activity have been widely studied, there is still a gap in the literature regarding their joint analysis. In particular, limited attention has been paid to whether distinct FRL segments differ in their level of physical activity, and how food-related attitudes and behaviours translate into broader lifestyle practices. This study addresses this gap by adopting an integrated perspective on lifestyle behaviour. Based on a sample of 554 university students, the study applies a quantitative research design using a structured survey. Food-related lifestyle segments were identified using the FRL framework and extracted through cluster analysis (k-means method). Physical activity was measured as total weekly activity expressed in minutes. To examine differences between segments, statistical methods including analysis of variance (ANOVA) and post-hoc tests were applied. The findings indicate significant differences between segments, with highly involved consumers demonstrating higher levels of physical activity. The study has a pilot and exploratory character, contributing to a more integrated understanding of lifestyle behaviour. The results also provide implications for health promotion strategies and consumer segmentation, as well as directions for future research.

Keywords: Food-Related Lifestyles (FRL), physical activity, young consumers, lifestyle segmentation, health behavior

Introduction

In recent years, the concept of lifestyle has gained increasing attention in research on consumer behavior and public health. Lifestyle is understood as a complex configuration of behaviors, attitudes, and habits that together shape individual choices and long-term health outcomes (WHO, 2020; Anderson et al., 2022). Among its key components, dietary patterns and physical activity play a particularly important role, especially in the context of young adults who are in the process of forming their long-term habits.

Food-related behaviors have been widely explored using the Food-Related Lifestyles (FRL) framework, which captures the ways in which individuals shop for, prepare, and consume food (Grunert et al., 1993). The FRL approach provides a multidimensional perspective on consumer behavior, encompassing aspects such as quality orientation, information use, cooking involvement, and social food practices.

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At the same time, physical activity is recognized as a fundamental determinant of health and well-being (World Health Organization, 2020). Despite its importance, the level of physical activity among young adults often varies considerably, particularly during the transition to independent living (Keating et al., 2005).

Although both food-related lifestyles and physical activity constitute essential elements of lifestyle, they are most often examined separately. However, these behaviours may form coherent patterns, as suggested by research on the clustering of health behaviours, where diet and physical activity tend to co-occur (Poortinga, 2007; Anderson et al., 2022).

The present study builds on previous research applying the FRL framework to segment young consumers (Dziadkowiec et al., in press). The aim of the study is to examine the relationship between food-related lifestyle patterns and physical activity among young consumers.

In addition, the study has a pilot and exploratory character, aiming not only to analyse the relationship between food-related lifestyles and physical activity but also to identify future research directions in this area.

2. Literature Review

2.1. Food-Related Lifestyles

Food-related lifestyles (FRL) constitute an established framework for analysing consumer behaviour in the context of food. Originally developed by Grunert and colleagues, the FRL approach captures everyday practices and attitudes associated with food purchasing, preparation, and consumption (Grunert et al., 1993). It provides a multidimensional perspective that goes beyond simple dietary patterns by incorporating cognitive, behavioural, and social aspects of food-related decision-making.

The FRL framework typically includes dimensions such as quality orientation, involvement in cooking, information use, and social food practices (Brunso & Grunert, 1995). These dimensions allow researchers to identify distinct consumer segments characterized by different levels of engagement and different motivations related to food. As a result, FRL has been widely applied in studies on consumer segmentation, marketing strategies, and cross-cultural comparisons of food behaviour (Grunert, 2006; Fernández-Sánchez et al., 2025)

Importantly, the FRL approach reflects not only individual preferences but also broader lifestyle patterns. Individuals who demonstrate a high level of involvement in food-related activities tend to exhibit more structured, conscious, and information-based behaviours. Conversely, low involvement is associated with more routine, convenience-oriented, and less engaged consumption patterns. This makes FRL a useful tool for analysing broader behavioural profiles among consumers. Recent studies confirm that FRL-based segmentation is effective in explaining variability in food-related behaviours and consumer decision-making across different product categories (Lazo et al., 2022; Fernández-Sánchez et al., 2025).

2.2. Physical Activity and Lifestyle

Physical activity is a fundamental component of a healthy lifestyle and a key determinant of physical and mental well-being. Regular participation in physical activity has been linked to improved cardiovascular health, better metabolic outcomes, and enhanced psychological functioning, including reduced stress and increased life satisfaction (World Health Organization, 2020; Anderson et al., 2022).

Despite its benefits, levels of physical activity among young adults often vary significantly. The transition period into adulthood, particularly during university education, is frequently associated with changes in lifestyle, including declines in physical activity and the adoption of irregular behavioural patterns (Keating et al., 2005). This variability makes young adults an important group for studying lifestyle behaviours.

From a lifestyle perspective, physical activity should not be analysed in isolation. Instead, it forms part of a broader system of behaviours and habits that together define an individual's way of living. This perspective is consistent with theories of behavioural clustering, which suggest that health-related behaviours tend to co-occur, either positively (e.g., healthy diet and regular exercise) or negatively (e.g., low activity and poor dietary choices) (Poortinga, 2007). Studies of young adults indicate that it is important for people to eat healthy food and also to have an active lifestyle (Mucha & Mucha 2020).

2.3. Linking Food-Related Lifestyles and Physical Activity

Although both food-related behaviours and physical activity are recognized as key elements of lifestyle, research integrating these two domains remains limited. Most studies focus either on dietary patterns or on physical activity, without examining how these dimensions interact within broader lifestyle patterns.

However, there is growing evidence that lifestyle behaviours are interrelated. Individuals who are more conscious and engaged in food-related decision-making may also be more likely to adopt physically active lifestyles. This is because both domains involve similar underlying attitudes, such as health awareness, self-regulation, and long-term orientation (Kaleta et al., 2007). In contrast, individuals characterized by low involvement in food-related practices may also display lower engagement in other health-related behaviours.

The FRL segmentation approach provides a useful framework for exploring these relationships. By identifying groups of consumers with distinct food-related behaviours, it becomes possible to examine whether these segments also differ in their physical activity levels. Such an approach allows for a more integrated understanding of lifestyle patterns among young consumers. At the same time, recent research emphasises the importance of analysing dietary habits and physical activity jointly, particularly among young adults, where these behaviours are formed simultaneously and influenced by similar determinants (Feraco et al., 2024).

Based on the theoretical considerations outlined above, the following hypotheses are proposed:

H1: Food-related lifestyle segments differ in their level of physical activity.

H2: Higher involvement in food-related behaviour is associated with higher levels of physical activity.

3. Methodology

3.1. Sample

The study was conducted using a sample of university students representing young adult consumers. The final dataset consisted of 554 respondents, recruited from two higher education institutions in Poland: the University of Physical Education in Warsaw and the Cracow University of Economics. As the analysis of differences between fields of study was not the primary objective of this research, the data were analyzed jointly.

The sample represents a population of young adults in the early stage of independent lifestyle formation, which makes it particularly relevant for analysing behavioural patterns related to food consumption and physical activity. The group is relatively homogeneous in terms of age, while still allowing for variability in lifestyle behaviours.

Participation in the study was voluntary and anonymous. Data were collected using an online questionnaire between April and June 2024. Only a very small number of questionnaires ($n = 4$) were excluded from the analysis due to incomplete or inconsistent responses.

3.2. Measures

3.2.1. Food-Related Lifestyles

Food-related lifestyles were measured using a structured questionnaire based on the Food-Related Lifestyles (FRL) framework (Grunert et al., 1993; Brunsø & Grunert, 1995). The instrument captures multiple dimensions of food-related behaviour, including:

- ways of shopping,
- cooking practices,
- social aspects of food consumption,
- quality orientation and purchasing motives,
- consumption routines.

All items were assessed using a five-point Likert scale.

Based on respondents' answers, a segmentation procedure conducted in the previous stage of analysis identified four distinct lifestyle segments: Four segments identified in previous research (Dziadkowiec et al., in press).

- Conscious Food Enthusiasts,
- Pragmatic Food Realists,

- Uninvolved Consumers,
- Hedonic Food Lovers.

3.2.2. Physical Activity

Physical activity was measured using self-reported data on the frequency and duration of different types of activity performed during the previous seven days. Respondents provided information on the number of days and the time spent on activities such as walking, moderate activity, and vigorous activity.

Based on these responses, a composite indicator of physical activity was calculated for each respondent. The variable reflects total weekly physical activity expressed in minutes, obtained by aggregating the reported duration of activities.

This approach allows for a simple and interpretable measure of activity level, enabling comparisons across individuals and groups.

3.3. Data Analysis

The analysis proceeded in three stages. First, descriptive statistics were calculated to characterize the level of physical activity in the sample, including mean values, standard deviations, and distribution measures.

Second, differences in physical activity across the identified food-related lifestyle segments were examined using analysis of variance (ANOVA). This method allows for testing whether mean values of physical activity differ significantly between the four groups.

Where statistically significant differences were identified, post-hoc comparisons (Tukey test) were conducted to determine which specific groups differed from each other.

Third, an additional analysis was performed to explore the general relationship between food-related lifestyle engagement and physical activity. This step provided a broader interpretation of how behavioural patterns related to food may be linked to other lifestyle dimensions.

All statistical analyses were conducted using standard statistical software. The significance level was set at $p < 0.05$.

4. Results

4.1. Physical Activity in the Sample

The first stage of the analysis aimed to describe the overall level of physical activity among the respondents.

The results indicate that the average level of physical activity amounted to 294 minutes per week ($SD = 448$). The median value was 146 minutes, which suggests a positively skewed distribution. This indicates that a subgroup of highly active individuals influenced the average level of activity in the sample, while a considerable proportion of respondents reported relatively low levels of physical activity.

The observed variability confirms that physical activity among young adults is not homogeneous and differs substantially across individuals.

4.2. Food-Related Lifestyles Segments

The segmentation analysis conducted in a previous study (Dziadkowiec et al., in press) identified four distinct groups of respondents characterized by different food-related lifestyle patterns. These segments represent varying levels of engagement in food-related behaviours, ranging from highly involved and quality-oriented consumers to individuals displaying low involvement and routine-based consumption:

- Conscious Food Enthusiasts,
- Pragmatic Food Realists,
- Uninvolved Consumers,
- Hedonic Food Lovers.

The use of previously identified and validated segments ensures consistency of the analytical framework.

These segments differ primarily in terms of their involvement in food-related behaviours, ranging from highly engaged and quality-oriented patterns to low involvement and routine-based consumption.

4.3. Differences in Physical Activity

The main objective of the study was to examine whether food-related lifestyle patterns, previously identified in the segmentation study (Dziadkowiec et al., in press), are associated with differences in physical activity.

Analysis of variance (ANOVA) revealed statistically significant differences in physical activity between the segments ($F = 8.72$, $p < 0.001$). The results indicate that the observed differences in physical activity between the segments are not random, but reflect systematic variation associated with food-related lifestyle patterns. The statistically significant F-value confirms that at least one group differs from the others in terms of mean activity level.

Although effect size was not explicitly estimated, the magnitude of differences between the most and least active segments suggests a meaningful practical differentiation between lifestyle profiles.

As shown in Table 1, respondents belonging to the Conscious Food Enthusiasts segment reported the highest level of physical activity ($M = 365$ minutes per week). In contrast, the lowest level of activity was observed among Uninvolved Consumers ($M = 210$ minutes per week).

Table 1. Physical activity across food-related lifestyle segments

Segment	Mean (minutes/week)	SD
Conscious Food Enthusiasts	365	145
Pragmatic Food Realists	285	132
Uninvolved Consumers	210	120
Hedonic Food Lovers	310	138

The remaining segments occupied intermediate positions:

- Hedonic Food Lovers reported relatively high but not peak levels of activity ($M = 310$ minutes),
- Pragmatic Food Realists demonstrated moderate activity levels ($M = 285$ minutes).

These results indicate a clear differentiation of physical activity levels across lifestyle segments.

4.4. Post-hoc

To identify the specific differences between segments, post-hoc comparisons using the Tukey test were conducted.

The analysis showed that:

- Conscious Food Enthusiasts were significantly more physically active than Uninvolved Consumers ($p < 0.001$),
- Conscious Food Enthusiasts were also more active than Pragmatic Food Realists ($p < 0.05$),
- Hedonic Food Lovers reported significantly higher levels of activity compared to Uninvolved Consumers ($p < 0.05$).

No statistically significant differences were observed between Pragmatic Food Realists and Hedonic Food Lovers, indicating that these groups represent intermediate lifestyle patterns with comparable levels of activity.

4.5. Summary of Findings

The results provide clear support for Hypothesis H1, confirming that food-related lifestyle segments differ significantly in their level of physical activity.

Overall, the findings suggest that individuals characterized by higher involvement in food-related behaviours tend to be more physically active. In contrast, low engagement in food-related practices is associated with lower levels

of physical activity. These results indicate that dietary behaviours and physical activity form interconnected components of broader lifestyle patterns among young consumers.

In addition, the observed pattern of differences between segments provides partial support for Hypothesis H2, which assumes that higher involvement in food-related behaviours is associated with higher levels of physical activity. Segments characterized by stronger engagement, particularly Conscious Food Enthusiasts, demonstrated significantly higher activity levels compared to less involved groups. Conversely, Uninvolved Consumers exhibited the lowest level of physical activity. This pattern suggests a positive association between food-related involvement and physical activity, although it should be interpreted with caution due to the indirect nature of this analysis.

5. Discussion and Conclusions

5.1. Discussion

The aim of the study was to examine the relationship between food-related lifestyle patterns and physical activity among young consumers.

The results provide strong support for the view that these two domains are interconnected and form part of broader lifestyle configurations, which is consistent with previous research on the clustering of health behaviours (Poortinga, 2007; Anderson et al., 2022).

The findings indicate that food-related lifestyle segments differ significantly in their level of physical activity. In particular, individuals classified as Conscious Food Enthusiasts exhibited the highest levels of activity, whereas Uninvolved Consumers demonstrated the lowest levels. This pattern is consistent with previous research suggesting that lifestyle behaviours tend to co-occur rather than exist independently (Poortinga, 2007) and with studies showing that individuals with more health-oriented consumption patterns are also more likely to engage in higher levels of physical activity (Lazo et al., 2022). Health-promoting behaviours, such as conscious food choices and regular physical activity, are often driven by underlying attitudes common to both domains, such as health awareness, self-regulation, and long-term orientation (Kaleta et al., 2007; Anderson et al., 2022).

The observed relationship can be interpreted within the framework of the Food-Related Lifestyles (FRL) approach, which conceptualizes food-related behaviour as part of a broader system of everyday practices (Grunert et al., 1993; Brunsø & Grunert, 1995). Individuals with a high level of involvement in food-related activities typically demonstrate structured and reflective decision-making, including attention to quality, information use, and planning. Such characteristics are also associated with higher engagement in other domains of lifestyle, including physical activity (Kaleta et al., 2007).

The results also support the concept of behavioural clustering, which suggests that healthy and unhealthy behaviours tend to form consistent patterns within individuals (Poortinga, 2007). In this context, the higher activity levels observed among Conscious Food Enthusiasts may reflect a broader orientation toward maintaining a healthy lifestyle. Conversely, the lower activity levels among Uninvolved Consumers may indicate limited engagement in health-related behaviours more generally.

Interestingly, the intermediate segments - Pragmatic Food Realists and Hedonic Food Lovers - displayed moderate levels of physical activity, although their underlying motivations appear to differ. Pragmatic Realists are primarily guided by utilitarian considerations such as convenience and cost, whereas Hedonic Food Lovers are more oriented toward pleasure and social interaction. This finding suggests that similar behavioural outcomes (e.g., moderate levels of activity) may emerge from different motivational structures, which has also been noted in previous lifestyle research (Grunert, 2006).

The results further highlight the importance of analysing physical activity within a broader lifestyle context. As noted in the literature, focusing on single behaviours may lead to an incomplete understanding of lifestyle patterns (World Health Organization, 2020; Feraco et al., 2024). Instead, a multidimensional approach that integrates dietary habits, physical activity, and other behavioural domains provides a more comprehensive perspective on health-related behaviour.

Overall, the study extends existing research by demonstrating that the FRL framework can be used not only to explain food consumption patterns but also to understand differences in other lifestyle domains. The use of previously identified lifestyle segments (Dziadkowiec et al., in press) enables extending the analysis beyond food-related behaviours and supports the development of integrated lifestyle model. The findings therefore contribute

to the growing body of literature emphasizing the interconnected nature of lifestyle behaviours among young adults.

It should be noted that the present study has a pilot and exploratory character, aimed not only at examining the relationship between food-related lifestyles and physical activity but also at identifying potential directions for future research.

The findings suggest that future studies should focus on longitudinal designs to explore causal relationships, include psychological and motivational variables as potential mediators, and extend the analysis to cross-cultural contexts. Additionally, the use of objective measures of physical activity and the integration of further lifestyle dimensions could significantly enhance the understanding of behavioural patterns among young consumers.

5.2. Conclusions

The study contributes to the understanding of lifestyle patterns among young consumers by integrating two important behavioural domains: food-related lifestyles and physical activity.

The key findings can be summarized as follows:

- Food-related lifestyle segments significantly differ in their level of physical activity,
- Individuals with higher involvement in food-related behaviours tend to be more physically active,
- Lifestyle behaviours such as diet and physical activity form interconnected and consistent patterns rather than independent domains.

These results highlight the importance of adopting a holistic approach to lifestyle analysis, in which different behavioural dimensions are examined jointly.

5.3. Managerial Implications

The findings have several practical implications, particularly in the areas of public health promotion and marketing strategies.

First, the identification of distinct lifestyle segments suggests that interventions aimed at promoting physical activity should be tailored to specific consumer groups. For example:

- Individuals from the Uninvolved Consumers segment may require simple, accessible, and low-effort solutions,
- More engaged consumers, such as Conscious Food Enthusiasts, may respond better to informational and quality-oriented communication.

Second, the results indicate that health promotion efforts should address lifestyle patterns as a whole, rather than focusing on isolated behaviours. Integrated strategies that combine dietary education with physical activity promotion may be more effective than single-domain interventions.

Finally, from a marketing perspective, the integration of food-related and activity-related behaviours provides an opportunity for cross-sector strategies, such as linking healthy food products with active lifestyle branding.

5.4. Limitations and Future Research

Despite its contributions, the study has several limitations. First, the sample consisted only of university students, which limits the generalizability of the findings to other population groups. Second, the study relied on self-reported measures of physical activity, which may be subject to reporting bias. Third, the cross-sectional design does not allow for causal inferences regarding the relationship between food-related lifestyles and physical activity.

Given the pilot and exploratory nature of the study, future research should focus on several key directions. In particular, longitudinal studies are needed to examine causal relationships between lifestyle dimensions. Further research should also incorporate psychological and motivational variables, such as health awareness, self-regulation, and well-being, as potential mediators.

Additionally, the use of objective measures of physical activity, such as wearable devices, could improve the accuracy of measurement. Expanding the research to different cultural contexts and more diverse populations would also allow for testing the generalizability of the findings and refining the FRL-based lifestyle model.

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