

Profiling Healthy Food Choices: Integrating Psychological and Behavioral Dimensions for Effective Consumer Segmentation

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Abstract

A healthy diet and lifestyle, including regular physical activity, are recognized as essential strategies in the fight against obesity and its associated non-communicable diseases. Nevertheless, eating extends beyond a mere biological function essential for nourishment; it fundamentally reflects the meanings individuals attach to food and their lives. Moreover, food purchasing and consumption behaviors are inherently complex, shaped by a myriad of influencing factors. This study seeks to enhance the existing body of literature on healthy food choices by segmenting consumers through both psychological and behavioral variables employing a rigorous cluster analysis. The analysis reveals four distinct consumer clusters, each characterized by diverse values and attitudes towards food, as well as varying lifestyle habits. The study provides significant practical implications for public institutions, retailers and manufacturers within the food sector.

Keywords: healthy food choice, cluster analysis, attitudes towards healthy food

1. Theoretical background and research question

As noted by Arbit et al. (2017), "Food choices are laden with meanings that figure importantly in humanity's symbolic, social, ecological, and economic worlds". This perspective is further supported by a 2020 survey on food perception among Italian consumers, which revealed that 68 percent of respondents view food as a source of happiness and satisfaction, while nearly half see it as an opportunity for social interaction. Only 15 percent perceive food as merely a necessity (Wunsch, 2020). These findings underscore the deep connection between well-being and food, illustrating that eating is far more than a simple biological function.

In Italy, the prevalence of obesity among adults rose from 9% in 2003 to 11% in 2017. The consequences of excess weight are profound, increasing the risk of numerous diseases (WHO, 2021). Given these risks, it is crucial to emphasize the importance of a healthy diet and lifestyle, including regular physical activity, as key strategies in combating obesity and its related non-communicable diseases (De-Magistris et al., 2017).

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1.1 Factors influencing food choice

There is a growing recognition that "healthy eating" is a multifaceted concept that extends beyond nutritional guidelines to encompass the diverse meanings that consumers may attribute to healthy food consumption (Delormier et al., 2009). Previous research has examined the relationship between healthy eating and consumers' mental and emotional states, as well as various demographic, psychographic, behavioral, environmental, and situational factors (e.g. Hill et al., 2018; French et al., 2012; Khare & Inman, 2006). The factors affecting food choices can generally be categorized into three main groups: (a) *food-related features*, including intrinsic (e.g. color and aroma) and extrinsic (e.g. packaging, labelling and branding) factors (Wang et al., 2019); (b) *individual differences*, including biological, physical, psychological, cognitive and social factors (Shepherd & Raats, 2006); (c) *society-related features*, including cultural, economic and policy factors (Rayner & Lang, 2015). Additionally, attitudes, beliefs, and knowledge about food play a crucial role in shaping food choices (Bellisle, 2006).

Consumer concerns for a healthier lifestyle are increasingly accompanied by a growing interest in sustainability and environmentally sustainable food practices (Ghvanidze et al., 2017). A study by Lazzarini et al. (2016) found a strong correlation between individuals' perceptions of the environmental friendliness and healthiness of food items.

1.2 Consumer's values and attitude towards food

The study focuses on consumer values since are central to consumer decision-making and can be described as broad psychological constructs that could affect consumers' attitudes, interests, and behavior (Greibitus et al., 2015).

Personal food identity represents the extent to which consumers believe that their health identity is linked to their food behavior (Thomsen & Hansen, 2015). Food consumers may infer parts of their identity from the symbolic meanings tied to the food they consume (Bisogni, et al., 2002). Consumers may have different personal food identity, thus determining a different food choice behavior (Sneijder & te Molder, 2009). Sensitivity to healthy eating is the construct used to capture the degree of personal importance and relevance a consumer attaches to healthy food intake (Thomsen & Hansen, 2015) while sensitivity to sustainable eating is a measure of the extent to which consumers take into account the ecological impact when they make a food purchase decision (Kaufmann, et al. 2012).

According to Fishbein and Ajzen (1975, p. 211), attitude can be defined as "a learned predisposition to respond in a consistently favorable or unfavorable manner concerning a given object". In this research attitudes towards healthy food denotes the predisposition to favorable or unfavorable evaluation toward healthy food products, that can be considered as a proxy of the subsequent of behavior.

Based on the cited theory and literature, the present study aims to answer the following research question:

RQ. What are the different profiles of the Italian consumer in relation to values about food (personal food identity, sensitivity to healthy and sustainable eating) and attitudes toward healthy food?

Through consumer segmentation it will be possible to understand the different purchasing and consumption styles of healthy foods. Based on the identified profiles, manufacturers and distributors can outline specific communication and promotional policies for food products.

2. Methodology

To address the research question, a quantitative study was conducted using a structured questionnaire composed of several sections. The questionnaire predominantly utilized closed-ended questions and Likert scales ranging from 1 to 7 points, which have been validated in the literature. The questionnaire was administered in January 2024 to a sample of 1,000 respondents responsible for grocery shopping. The sample was carefully constructed to ensure gender balance (48% male, 52% female). The mean age of the cohort was approximately 48 years and the sample is representative of the population in terms of geographic distribution.

The research question was pursued through the application of cluster analysis (CA), which identified distinct consumer segments based on psychological traits and behaviors related to healthy food consumption. CA was implemented through the use of IBM SPSS Statistics 28 statistical software and the procedure followed four steps as suggested by Dolnicar (2003) and Ahmad (2003):

- 1) *identification of the optimal number of clusters*: using the hierarchical method (Ward's method) by determining the distance between each observation in a multidimensional space. Through the agglomeration method, the Elbow Plot was constructed, which indicates that four is the optimal cluster number at the bend point of the curve.
- 2) *calculation of the final cluster centres*: joining the Ward's hierarchical method and the non-hierarchical method of K-means.
- 3) *naming the different clusters*: Table 1 shows the final cluster centres, the size of each cluster and the name given to each of them.

Table 1 - Final cluster centres and name of the clusters

Variables	Lovers	Fans	Nonchalant	Pseudo-health enthusiasts
Personal Food Identity (PFI)	6,22	4,99	4,25	2,57
Sensitivity to Healthy Eating (SHE)	6,27	5,3	3,85	4,84
Sensitivity to Sustainable Eating (SSE)	6,39	5,32	3,61	5,39
Attitude towards Healthy Food (ATT)	5,62	5,18	4,31	5,33
N. of Observations	295	388	231	86

- 4) *final description of clusters*: each cluster was described by starting with the internal segmentation variables and then also adding the characteristics derived from the external descriptive variables.

3. Results

Cluster 1. Lovers

Their guiding principle could be encapsulated as "food is life; the better and more sustainably I eat, the better I live." They possess an exceptionally strong personal food identity, reflecting a firm belief that their health is closely tied to their dietary choices. Moreover, they exhibit a very high sensitivity to healthy and sustainable eating, placing significant emphasis on health and sustainability when selecting food. Their attitude toward healthy eating is also highly positive.

The group, predominantly composed of women, is particularly health-conscious, with most members considering their health to be in good or excellent condition. They aim to maintain or reduce their body weight. Over 70% of them engage in regular physical activity: they are the most active group. They possess a very high level of nutritional knowledge, with a thorough understanding of the Ministry of Health's recommendations regarding daily intake of salt, sugars, and fats. Consumers in this cluster mainly follow an omnivorous diet (75%), followed by vegetarian, pescetarian, health-specific and vegan diets. When purchasing food, they seek multiple benefits, including quality, freshness, health, and safety. For them, a healthy product is not only one that is good and natural but also organic and of high quality.

Cluster 2. Fans

The underlying belief of this group of consumers is that "food contributes to well-being, therefore, healthy and sustainable food is preferable." They possess a strong personal food identity, indicating that they believe their health is significantly influenced by their dietary choices. Additionally, they exhibit a high sensitivity to healthy and sustainable eating, considering both health and environmental sustainability when selecting food. Their attitude towards healthy eating is notably positive.

These consumers are quite mindful of their health, with a focus on maintaining or reducing body weight. The majority engage in physical activity (52.1%), but they are not as active as the "Lovers". They also demonstrate a relatively high level of nutritional knowledge, but they are not so well-informed as the Cluster 1. Compared to "Lovers", they also predominantly follow an omnivorous diet (over 86%). When purchasing food, they prioritize quality, freshness, health, and safety. To them, a healthy product is not only one that is good and natural but also organic and nutritious.

Cluster 3. Nonchalants

Their guiding philosophy could be summarized as "well-being does not come from food. Health and sustainability? I'm not interested." Their personal food identity is relatively weak, indicating a belief that their dietary choices do not significantly impact their health. They exhibit low sensitivity to healthy and sustainable eating, and their attitude toward healthy foods is not particularly positive.

Nonchalants are generally not highly attentive to their health, which they often describe as being in good or fair condition. It is notable that despite their stated goal of losing or maintaining weight, the majority do not engage in physical activity (no = 56%; yes = 44%). Their level of nutritional knowledge is relatively low, and they are largely unaware of the Ministry of Health's recommendations regarding daily intake of salt, sugars, and fats. When purchasing food, they do not seek specific benefits other than

price convenience, though they are open to experimenting with new products. For them, a healthy product is perceived as not only healthy and good but also natural, organic, and expensive.

Cluster 4. Pseudo-health Enthusiasts

The outlook of this group of consumers could be summarized as "I don't eat to stay in shape, but I don't shy away from healthy and sustainable food." They possess a very weak personal food identity, indicating a belief that their dietary choices have little to no impact on their health. However, they exhibit a moderate sensitivity to healthy eating and a stronger sensitivity to sustainable eating. This suggests a profile of a consumer who, while not prioritizing food choices for health reasons, still pays attention to both the healthiness and sustainability of food. Reflecting this tendency, they also display a fairly positive attitude toward healthy eating.

Pseudo-health enthusiasts are moderately attentive to their health, which they generally perceive as good. They express a desire to lose or maintain their current weight, with about half engaging in physical activity. Their level of nutritional knowledge is relatively low. Despite their weak personal food identity, they claim to seek benefits such as quality, freshness, and safety in the food they purchase. For them, a healthy product is not only natural, good, and nutritious but also organic, fresh, and expensive.

4. Conclusions and implications

The results indicate that consumers hold various values and attitudes related to food. The "Lovers" group, followed closely by the "Fans", represents segments of consumers who place significant importance on food and nutrition as essential tools for maintaining health. However, the "Lovers" engage in more physical activity than the "Fans" and pay greater attention to balancing their diet, which they complement with exercise. In contrast, the other two clusters exhibit different attitudes. Neither group views food as a means to achieve good health. However, the "Pseudo-health Enthusiasts" appear to be more sensitive to sustainable eating practices compared to the "Nonchalants". Despite this apparent sensitivity, the actual behavior and health status of the "Pseudo-health Enthusiasts" reveal a disconnect between their professed values and their lifestyle choices. It is worth focusing on the "Nonchalant" group, as it represents a consumer segment that does not perceive a direct connection between food and health. This makes them a more challenging target for efforts aimed at promoting healthy lifestyles and nutritious food choices. Manufacturers and retailers should seek to tailor their communication strategies to this target audience by emphasizing the health benefits of nutritious products. Additionally, they should promote the connection between healthy eating, physical activity, and overall well-being, for example, by introducing an in-person nutrition education helping shoppers to use shelf tags to identify healthy foods in-store. From a promotional strategy perspective, implementing reward mechanisms for healthy food choices is essential, given the perceived cost barrier, which is particularly significant for these consumer segments.

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References upon to request.