

SLOVAK CONSUMER PERCEPTION AND BEHAVIOUR IN THE CHOICE OF HEALTHY NON-ALCOHOLIC BEVERAGES: A PRELIMINARY STUDY

Barbara Lenická*, Malgorzata A. Jarossová

Bratislava University of Economics and Business, Slovak Republic

The main goal of this paper is to examine how consumers in Slovakia perceive healthy non-alcoholic beverages and how this perception influences their purchasing behavior. The research focuses on several factors that may affect consumer choices, including taste, ingredients, perceived health benefits, price, and willingness to pay for healthier products such as organic, sugar-free, vitamin-enriched, or plant-based beverages. A survey was conducted involving 155 Slovak respondents aged 20 to 40. The results show that taste and ingredients are the most important criteria for choosing healthy drinks, while price plays a secondary but still relevant role. Although consumers are increasingly interested in healthier beverages, their purchasing decisions are often influenced by affordability and preferred flavors. The study provides useful insights into how Slovak consumers make decisions in the growing market for health-oriented beverages and can help producers and marketers better align their products with consumer expectations.

Keywords: Slovak consumer behavior, healthy non-alcoholic beverages, consumer purchasing preferences

Introduction

In recent years, the non-alcoholic beverage sector has undergone a significant transformation, driven by rising consumer health consciousness and increased interest in functional, natural, and low-sugar alternatives. Globally and in Europe, consumers are progressively shifting away from traditional sugary soft drinks and alcoholic beverages, favouring options that offer wellness benefits, improved nutrition, or align with a healthier lifestyle (Roy, 2025).

Health awareness has become one of the most influential factors shaping modern food and beverage consumption patterns. Consumers no longer perceive beverages merely as a source of refreshment, but as products that can contribute to overall well-being, energy balance, and preventive health (NielsenIQ, 2024). This shift has encouraged producers to innovate and reformulate their portfolios, introducing drinks enriched with vitamins, plant extracts, probiotics, or natural sweeteners (Roy, 2025). The notion of “drinking for health” has thus evolved from a niche segment into a dominant trend across global beverage markets.

In recent years, the functional drinks sector has become a significant engine of growth in the global soft drinks market. According to Grand View Research (2025), the functional drinks segment was valued at around USD 149.75 billion in 2024 and is expected to reach USD 248.51 billion by 2030, growing at a compound annual growth rate (CAGR) of 8.9%. Euromonitor (2025) reports that innovation and wellness-driven functionality are key forces that have driven the global soft-drinks market to reach USD 1.1 trillion in 2024, with functional drinks such as energy, electrolyte, and sports beverages leading value growth. At the same time, consumers are increasingly seeking reduced-sugar options. Euromonitor (2025) reported 7% value growth in reduced-sugar carbonated soft drinks in 2024. According to Witherington (2025), many functional drink launches focus on hydration, immunity, cognition, and recovery.

Public health policies reinforce these market dynamics. The World Health Organization (2023) recommends limiting free sugars to less than 10% (and ideally below 5%) of total energy intake, a guideline that is pushing

both reformulation and consumer demand toward lower-sugar, functional beverages.

Socio-demographic and cultural factors also play a crucial role in shaping this transformation. Younger generations, particularly Millennials and Generation Z, tend to associate beverage choices with personal values such as sustainability, ethical sourcing, and transparency (Davies, 2025). In contrast, older consumers are motivated mainly by functional and preventive aspects, perceiving healthy beverages as a way to maintain vitality and reduce the risk of chronic diseases (Fathin et al., 2023). These differences highlight the complexity of consumer perception and emphasize the need to explore how various segments define and evaluate “healthy” beverages. A Slovak study by Čvirik (2020) revealed that during the COVID-19 pandemic, health awareness among consumers significantly increased, with demographic factors playing an important role in its development.

A health-conscious consumer is commonly described as an individual who recognises the link between personal well-being and everyday consumption choices. As noted by Pan et al. (2025), such consumers actively monitor their lifestyle behaviours and intentionally seek products aligned with wellness goals. In the literature, health consciousness is conceptualised as a readiness to engage in health-promoting actions, influencing how individuals process information and evaluate market offerings (Farfán et al., 2025).

Within this framework, health consciousness serves as a central determinant of healthier beverage selection. Consumers with higher health awareness tend to scrutinise product information more carefully, paying particular attention to labels, nutritional composition, and functional claims – factors shown to shape attitudes and purchase intentions toward health-oriented products (Michaelidou & Hassan, 2008; Jayanti & Burns, 1998; Yadav & Pathak, 2016). Moreover, health-conscious individuals demonstrate an elevated willingness to pay for products that signal clear health value, including reduced sugar content, natural ingredients, or added functional components. Collectively, these findings highlight health consciousness as a key psychological driver that influences how consumers judge product credibility, perceive quality, and ultimately form purchase intentions in the healthy beverage category.

Understanding consumer perceptions is essential, as the decision-making process for healthy beverages is influenced by complex interactions among sensory preferences, health beliefs, socio-demographic factors, and perceived product value (Hallak et al., 2022). Prior research indicates that taste and sensory attributes remain the dominant determinants of beverage choice, even when consumers express strong interest in healthier options (Anetoh et al., 2022). The perceived health benefits of beverages may enhance willingness to try new products; however, purchase intent is often moderated by price sensitivity and limited trust in health-related claims (Tudoran, 2019). For example, consumers may positively evaluate beverages marketed as “no added sugar” or “vitamin-enriched,” yet their actual purchase behavior is frequently constrained by higher prices or unfamiliar flavours (Baker et al., 2022).

Economic factors strongly moderate the translation of health motivation into actual purchases of healthier beverages. Healthier, organic, or functional drinks commonly carry price premiums that reduce uptake among younger and lower-income consumers (Janssen & Hamm, 2012; Rickertsen, Kristofersson, & Lothe, 2017). More broadly, evidence shows that lower income and higher food costs encourage selection of energy-dense, cheaper items over nutrient-dense options, making affordability a persistent barrier to healthier consumption patterns (Drewnowski & Specter, 2004; Darmon & Drewnowski, 2008). These economic constraints therefore help explain why expressed interest in healthier beverages does not always translate into regular purchase behavior.

In the context of healthy non-alcoholic beverages, consumer segmentation shows that younger, wellness-oriented “lifestyle” consumers are leading the demand for functional and plant-based drink options. Industry commentary reports that more than two-thirds of consumers now cite health or wellness as a key influence on food and beverage purchase decisions, and that functional beverage launches have grown markedly in recent years (Askew, 2020). Empirical studies support this, indicating that individuals with higher health values and stronger health orientation demonstrate significantly greater intention to purchase functional beverages among university students and young adults (Chang et al., 2020).

Material and Methods

The aim of the study is to examine how consumers in Slovakia perceive healthy non-alcoholic beverages and how this perception influences their purchasing behavior. The primary emphasis is on identifying the determinants that shape consumers' evaluations of healthy beverages, analysing the influence of nutritional, sensory, economic, and sustainability-related attributes on purchasing decisions, and, based on the findings, proposing recommendations for stakeholders operating in this market segment. To examine consumers' perception and behavior in relation to healthy non-alcoholic beverages in Slovakia, several research methods and procedures were applied. The methodological framework consisted of two main stages:

1. the processing of a theoretical background through a structured literature review;
2. the implementation of a quantitative survey conducted among Slovak consumers.

Literary review and theoretical approach focused on consumer behavior, health-oriented purchasing decisions, and determinants influencing the selection of healthy non-alcoholic beverages. Methods of scientific work, such as analysis, synthesis, comparison, and generalisation, were applied to process, evaluate, and integrate theoretical findings.

The empirical part of the study used a quantitative research approach, which is well-suited to identifying behavioral patterns, preferences, and relationships among variables in large respondent samples. The data collection was carried out through an online questionnaire administered via the Google Forms digital survey platform. Participation in the study was entirely voluntary, and respondents were informed that their contributions were anonymous and used exclusively for research purposes. No personally identifiable or sensitive information was collected at any stage of the process. The questionnaire consisted of closed-ended questions, multiple-choice items, and Likert-scale statements focused on perceptions of healthy beverages, purchasing frequency, preferred product attributes, and willingness to pay for healthier alternatives. A total of 155 respondents completed the online questionnaire, which was shared via social networks such as Microsoft Teams. The online data collection was conducted from 14. 10. 2025 to 14. 11. 2025.

In addition to gender distribution, several socio-demographic characteristics were monitored to describe the sample better and support subsequent analyses.

In the questionnaire, several types of items were used to capture different dimensions of consumer perception and behavior. The survey incorporated:

- ❑ Single-choice (forced-choice) questions, where respondents were allowed to select only one option from the available responses. This format was applied in items that required identifying the most dominant behaviour or preference, thereby ensuring the collection of mutually exclusive data (Fink, 2006).
- ❑ Multiple-response questions, in which respondents could select more than one option from a predefined set of categories. This question format is suitable for identifying the breadth of factors influencing consumer decision-making, as it allows for the simultaneous expression of multiple relevant determinants (Fink, 2006).
- ❑ Likert-type scale, specifically five-point importance scales ranging from “not important” to “very important”. These items were used to assess the perceived relevance of selected product attributes and to measure attitudinal intensity toward each characteristic (Joshi et al., 2015).

To examine potential associations between categorical variables in the dataset, a chi-square test of independence (χ^2 test) was employed. This method is suitable for determining whether the distribution of responses across categories differs significantly from what would be expected under the assumption of independence. The test statistic is calculated using the formula (Agresti, 2007):

$$\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

where: O_{ij} – denotes the observed frequency in each cell of the contingency table; E_{ij} – represents the expected frequency, which is computed based on marginal totals using the formula (Agresti, 2007):

$$E_{ij} = \frac{(\text{row total}) \times (\text{column total})}{N}$$

The summation symbol (Σ) indicates that the statistic is calculated across all cells in the contingency table. The degrees of freedom (df) for the test are determined according to the formula (Agresti, 2007):

$$df = (r - 1)(c - 1), df = (r - 1)(c - 1), df = (r - 1)(c - 1)$$

where: r – the number of rows and c the number of columns

This statistical technique was applied to analyse whether the frequency of physical activity is significantly associated with the frequency of consumption of healthy non-alcoholic beverages. The chi-square test was selected because both variables are nominal – ordinal and the method does not require normality assumptions. A significance level of $\alpha = 0.05$ was adopted to determine whether observed differences reflect a meaningful association rather than random variation.

The most represented age category among respondents was 21–30 years (Table 1), accounting for 137 respondents (88.4%). A smaller group of participants was under 20 (16 respondents; 10.3%), and only two respondents (1.3%) were between 31 and 40 years old. This age structure indicates a strong presence of young adult consumers, which is relevant given their increasing interest in health-oriented products.

Regarding monthly income, the most significant proportion of respondents reported earnings below 800€ (97 respondents; 62.6%). A total of 34 respondents (21.9%) belonged to the income group 801–1,200 €, followed by 14 respondents (9%) in the category 1,201–1,800 €. Only 10 respondents (6.5%) indicated an income of more than 1,800 € per month. This suggests that a significant part of the sample consists of economically less affluent consumers,

which may influence price-sensitive purchasing behavior.

The questionnaire also examined respondents' lifestyle and routine habits, including the frequency of sports activities, as physical activity is often associated with stronger health-oriented attitudes. The most common frequency was 2–3 times per week, reported by 89 respondents (57.4%). Another 46 respondents (29.7%) engaged in sports 2–3 times per month. Seventeen respondents (11%) reported daily physical activity, while only 3 (1.9%) reported never participating in sports.

To structure the study's analytical framework, two research questions were formulated in line with the primary objective. These questions guided the selection of appropriate statistical methods. They ensured a focused examination of both behavioural patterns and the perceived importance of product attributes in the context of healthy non-alcoholic beverage consumption.

Research Questions:

- RQ1: Which product attributes are perceived as the most important determinants in consumers' selection of healthy non-alcoholic beverages in Slovakia?
- RQ2: How does the frequency of physical activity relate to the consumption frequency of healthy non-alcoholic beverages among Slovak consumers?

Results and Discussion

To deepen the understanding of consumer behavior in the context of healthy non-alcoholic beverages, the questionnaire incorporated several complementary variables that enabled a more multidimensional interpretation of the findings. These additional items proved analytically valuable, revealing significant associations among lifestyle orientation, behavioral patterns, and the perceived importance of specific product attributes. The survey results show notable differences in the frequency of consumption of healthy non-alcoholic beverages among respondents. As shown in Table 2, the most common reported frequency was consumption 2–3 times per week, accounting for 28.4% of Slovak respondents. This indicates that a considerable proportion of Slovak consumers regularly incorporate healthier beverage options into their routine. Weekly consumption was followed closely by monthly consumption, selected by 27.1% of respondents, reflecting a segment of consumers who perceive healthy beverages positively but do not prioritise them in everyday consumption patterns. A moderate yet stable level of demand is evident among those who consume such beverages once per week, accounting for 20.6% of participants. Daily consumption was reported by 20.0% of Slovak respondents, representing a smaller but consistent group with strong health-oriented behaviour.

These daily consumers may reflect individuals with firmly established health-conscious habits or specific dietary preferences, such as a preference for sugar-free, vitamin-enriched, or plant-based beverages. The overall distribution of responses indicates that, while daily consumption is not dominant, the majority of respondents consume healthy beverages at least occasionally, with nearly 70% reporting weekly or monthly consumption. The high share of weekly and monthly consumption suggests that healthy non-alcoholic beverages represent a consistently relevant choice for consumers. Within lifestyle-related choices, though still influenced by price, taste expectations, and accessibility.

Table 3 presents the key determinants influencing consumers' selection of healthy non-alcoholic beverages. As this question allowed respondents to select multiple factors, it enabled the identification of a broader range of attributes perceived as relevant to the decision-making process. This approach provides a more comprehensive insight into consumer behavior

Table 1 Socio-demographic characteristics of Slovak respondents

Type of characteristics	Description of characteristics	N	(%)
Sex	female	108	69.7%
	male	47	30.3%
	total	155	100%
Age	20 and less	16	10.3%
	21–30	137	88.4%
	31–40	2	1.3%
	total	155	100%
Education	secondary	11	7.1%
	bachelor	120	77.4%
	master	22	14.2%
	PhD	2	1.3%
	total	155	100%
Income	800 € and less	97	62.6%
	801–1,200 €	34	21.9%
	1,201–1,800 €	14	9%
	1,801€ and more	10	6.5%
	total	155	100%

Source: Own research

Table 2 Frequency of consumption of healthy non-alcoholic beverages by Slovak respondents

Response category	Number of respondents	Percentage (%)
Several times a week (2–3 times)	44	28.4%
Once a month	42	27.1%
Once a week	32	20.6%
Daily	31	20.0%
I do not consume them	6	3.9%
Total	155	100%

Source: Own research, 2025

by capturing the concurrent effects of sensory, nutritional, economic, and marketing-related considerations on product choice. The findings shown in Table 3 reveal that taste (76.8%) represents the most influential determinant in Slovak consumers' selection of healthy non-alcoholic beverages. This underscores the dominant role of sensory perception in beverage-related decision-making, even within health-oriented product categories. The second most significant factor, price (71.0%), indicates that economic considerations remain a strong moderator of purchasing behavior, reflecting the sensitivity of consumers – particularly younger age groups – to the often-higher cost of healthier beverage alternatives.

A substantial part of respondents also emphasised the importance of product composition (58.7%), signalling an increased awareness of ingredient quality and formulation. Similarly, the nutritional value of these beverages (44.5%) emerged as an important criterion, suggesting that consumers attach relevance not only to taste but also to measurable health attributes, such as sugar content or added functional components. The role of store

availability (46.5%) underscores the practical need for accessible product placement, which may directly influence repeat purchases and habitual consumption. Although natural ingredients (23.2%) were selected less frequently, the result still reflects a notable interest in minimally processed or cleaner-label beverage options. In contrast, secondary factors such as brand reputation (20.0%) and package size (21.3%) indicate that while branding and packaging functionality contribute to product evaluation, they do not constitute primary drivers of choice for most consumers.

Interpersonal influence, represented by recommendations from acquaintances (27.7%), appears more impactful than advertising (13.5%), suggesting that consumers perceive peer-based information as more credible than conventional promotional communication. The minimal influence of eco-friendly packaging (5.8%), influencer endorsement (5.2%), and contests or promotional games (3.2%) demonstrates that environmental considerations, online social influence, and reward-based incentives currently play only a marginal role in shaping consumer preferences within this product category. Overall,

the results indicate that consumers prioritise core product attributes such as taste, price, composition, and nutritional value over external marketing cues or sustainability-related features. This highlights the need for producers and retailers to focus primarily on product formulation and price competitiveness to strengthen the position of healthy non-alcoholic beverages in the Slovak market.

The predominance of taste as the most influential attribute is fully consistent with the theoretical background presented in the Introduction. Multiple studies cited in this paper emphasise that sensory characteristics, particularly taste, represent a decisive factor in beverage-related decision-making. Anetoh et al. (2020) demonstrate that taste is one of the strongest predictors of consumer acceptance of malt and functional beverages, highlighting its central role even when nutritional or health attributes are present. Similarly, Hallak et al. (2022) show that consumers' willingness to pay for healthier beverages is frequently constrained by concerns regarding flavour and sensory satisfaction, reinforcing the idea that taste remains a key determinant despite rising health consciousness. Baker et al. (2022) also report that functional foods and beverages tend to face acceptance barriers when sensory expectations are not met, underscoring the importance of hedonic evaluation.

In our findings, taste was rated as "important" or "very important" by more than half of respondents, while sustainability-related factors, such as recyclable packaging or eco-friendly ingredients, received substantially lower ratings. This pattern can be interpreted within the framework outlined in the Introduction, which highlights that although consumers increasingly express interest in health and sustainability, sensory gratification continues to dominate purchasing decisions, particularly in categories with strong experiential components such as beverages.

Beyond that, the demographic structure of the sample – predominantly young adults aged 21–30 may further reinforce this trend, as younger consumers demonstrate high sensitivity to sensory appeal and price, while sustainability often plays a secondary role unless strongly integrated into brand identity.

Additionally, Slovak respondents were asked to rate the importance of specific product attributes on a five-point Likert scale. This question ("How important is it for you that a beverage meets the following requirements?") enabled the assessment of which characteristics

Table 3 Factors influencing Slovak consumers' choice of healthy non-alcoholic beverages

Factor	Number of respondents	Percentage (%)*
Taste	119	76.8%
Price	110	71.0 %
Ingredients	91	58.7 %
Nutritional value	69	44.5 %
Natural ingredients	36	23.2 %
Availability in store	72	46.5 %
Brand reputation	31	20.0 %
Advertising	21	13.5 %
Influencer recommendation	8	5.2 %
Recommendation from others	43	27.7 %
Eco-friendly packaging	9	5.8 %
Package size	33	21.3 %
Contests (chance to win)	5	3.2 %

Source: Own research, * Values do not add up to 100% because respondents could choose multiple answers

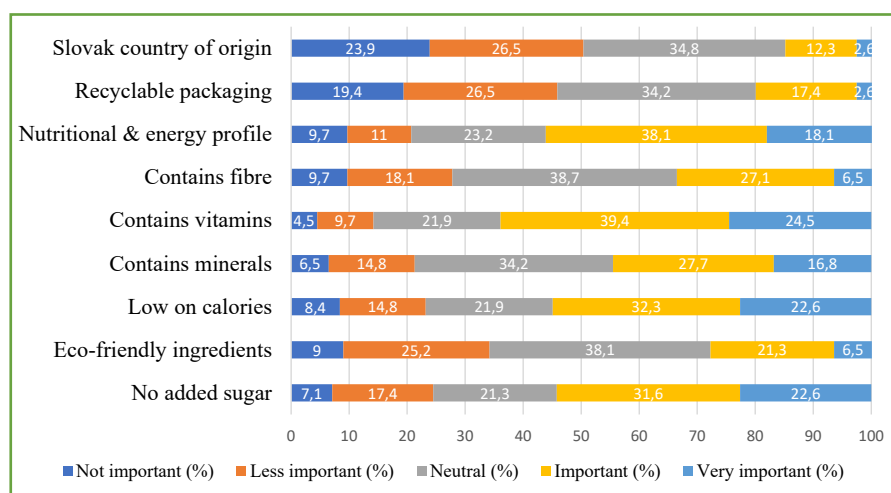


Figure 1 Importance of healthy non-alcoholic beverage attributes for Slovak respondents (%)

Source: Own research

consumers prioritise when selecting healthy non-alcoholic beverages. The results shown in Fig. 1 provide valuable insight into how functional, nutritional, and sustainability-oriented attributes shape consumer preferences.

The results of this research show that consumers prioritise attributes directly linked to personal health benefits. Among all examined characteristics, the highest share of important and very important responses was recorded for beverages containing vitamins, followed closely by the nutritional and energy profile, low-calorie content, and absence of added sugar. These attributes received the highest favourable ratings, indicating that consumers place substantial emphasis on functional ingredients and clear nutritional benefits. Such preferences reflect

a broader trend in which health-conscious individuals seek beverages that offer measurable physiological benefits, support general well-being, and align with dietary objectives such as weight control or reduced sugar intake.

Attributes such as mineral content and fibre content were also perceived as relevant, although to a lesser extent. Their intermediate importance suggests that while consumers recognise the added value of functional enrichment, they prioritise more familiar or widely communicated health benefits, particularly those associated with vitamins and calorie or sugar reduction. In contrast, sustainability and origin-related properties, including eco-friendly ingredients, recyclable packaging, and the product's Slovak origin, received comparatively lower ratings.

Although these factors are not irrelevant, their reduced importance indicates that, within the context of healthy non-alcoholic beverages, environmental considerations and country-of-origin cues are secondary to direct health attributes. This finding aligns with the study's broader conclusion: consumer decision-making in this product category is predominantly health-driven, with functional and nutritional characteristics substantially outweighing ecological or geographical attributes.

The stronger preference for vitamins over attributes such as Slovak origin or recyclable packaging is consistent with the theoretical concepts outlined in the Introduction and aligns with existing empirical findings referenced in the manuscript. Several studies cited in the paper highlight that consumers increasingly seek beverages offering functional health benefits, particularly those linked to immunity, energy, and overall wellness. For example, Hallak et al. (2022) emphasise that health-oriented consumers pay close attention to physiological benefits such as vitamin enrichment, which directly contribute to perceived personal wellbeing. Similarly, Baker et al. (2022) note that functional beverages with added nutrients – especially vitamins – tend to attract consumers who prioritise tangible, self-relevant health outcomes.

In contrast, attributes like recyclable packaging or Slovak origin are associated with collective or societal benefits, which the literature suggests tend to be secondary in categories such as beverages, particularly among younger adults. Given that the sample in this study

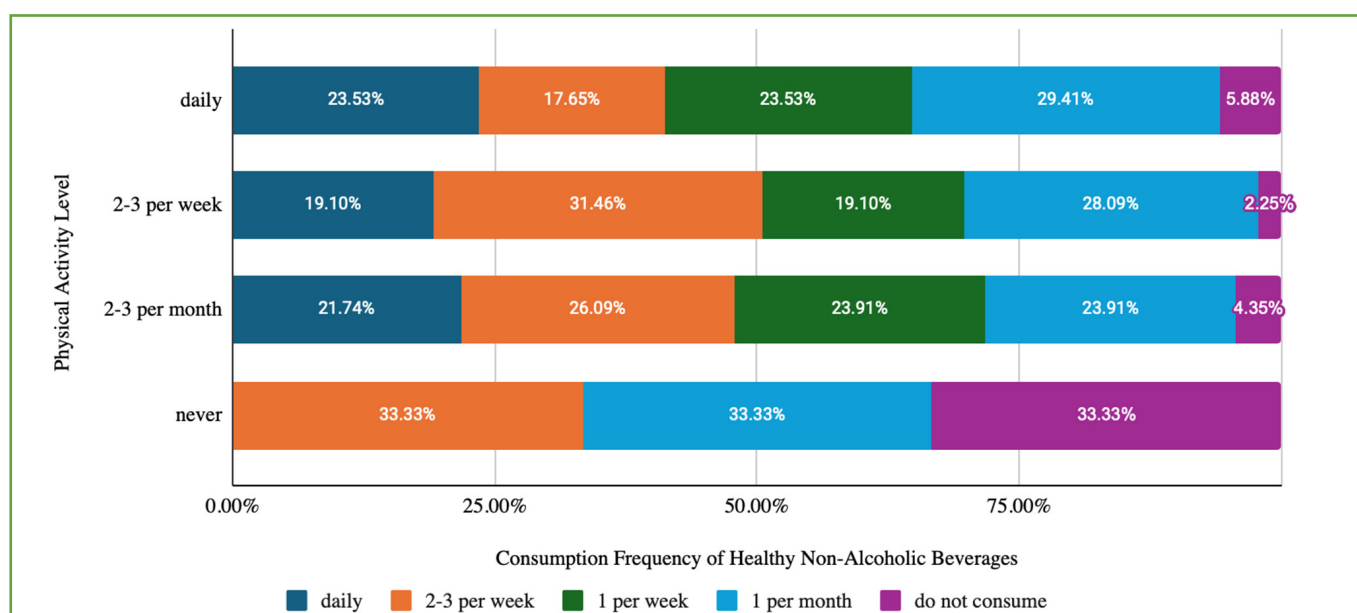


Figure 2 Consumption frequency of healthy non-alcoholic beverages across physical activity levels

Source: Own research

consisted predominantly of respondents aged 21–30, the prioritisation of functional health-enhancing attributes over environmental or origin-based characteristics corresponds with findings from contemporary consumer research. Young, price-sensitive consumers generally engage more with attributes that provide immediate personal benefits rather than those rooted in ethical or regional considerations – unless these are strongly tied to brand identity or offer additional value.

The findings presented in Figure 1 provide a direct empirical response to RQ1, illustrating which product attributes consumers perceive as most important when selecting healthy non-alcoholic beverages. Overall, the most influential factors identified in the evaluation were those directly linked to immediate personal health benefits, particularly vitamin content, nutritional profile, energy balance, low-calorie value, and the absence of added sugar. These findings indicate that consumers primarily base their choices on functional and nutritional benefits rather than environmental or geographic factors, reinforcing the centrality of health-driven decision-making in this product category.

The findings presented in Figure 2 address RQ2. This figure illustrates the distribution of consumption frequencies across different levels of physical activity. Figure 2 compares daily, weekly, and monthly consumption patterns, as well as non-consumption patterns, among individuals with varying levels of sport activity, allowing a visual assessment of potential associations between lifestyle behaviours and beverage consumption habits.

The chi-square test examining the association between the frequency of physical activity and the frequency of consumption of healthy non-alcoholic beverages revealed no statistically significant relationship ($\chi^2(8, N = 120) = 2.68, p = 0.95$). This result indicates that consumers' level of physical activity does not appear to systematically influence how often they consume beverages associated with a healthy lifestyle. Although descriptively, more physically active respondents tended to report higher consumption frequencies, these differences were not substantial enough to reach statistical significance. This suggests that the consumption of healthy non-alcoholic beverages is not exclusively tied to health-oriented lifestyle factors, but may be influenced by additional variables such as taste preferences, product availability, price sensitivity, or general attitudes toward beverage categories. Consequently, healthy beverage consumption in Slovakia may represent a broad behavioural pattern spanning multiple lifestyle groups rather than being limited to highly active individuals.

The heightened importance attributed to vitamins, nutritional composition, and low-calorie content aligns closely with prior studies, which similarly report that functional and health-enhancing attributes are key drivers of beverage choice among younger, health-conscious consumers. This supports existing findings indicating that functional benefits – such as vitamin enrichment and improved nutritional value – are central motivations in the adoption of healthy beverage options. Conversely, the relatively limited salience of sustainability-related attributes in this study diverges from evidence reported in Western European contexts, where features such as recyclable packaging and environmentally responsible sourcing exert a more substantial influence on purchasing decisions. This deviation may be explained by structural characteristics specific to the Slovak market, including heightened price sensitivity, comparatively lower availability of premium sustainable beverage categories, and the predominance of mainstream offerings over eco-labelled products. Furthermore, the absence of a statistically significant association between physical activity and the frequency of healthy beverage consumption contrasts with international findings that position functional beverages as more prevalent among physically active consumers. The lack of such a relationship in this study suggests that, within the Slovak

context, healthy beverages may have become sufficiently mainstream to attract both active and less active individuals alike, thereby diminishing the lifestyle-based segmentation observed elsewhere. Overall, the findings both align with and depart from existing scholarship: they corroborate the central importance of health-oriented attributes while simultaneously revealing a context-dependent attenuation of sustainability considerations and lifestyle-based differentiation within this product category.

Conclusion

The study aims to examine how consumers in Slovakia perceive healthy non-alcoholic beverages and how this perception influences their purchasing behavior. The findings of this study provide an in-depth understanding of how Slovak consumers perceive and select healthy non-alcoholic beverages. The results indicate that the decision-making process in Slovak respondents is strongly driven by direct, health-related product attributes.

Regarding product attributes, the evaluation showed that consumers most strongly favour characteristics linked to immediate personal health benefits. The highest importance was assigned to beverages containing vitamins (approximately 63% rating them important or very important), followed by a clearly defined nutritional and energy profile (about 56%), low calorie content (about 55%), and no added sugar (about 54%). In contrast, sustainability-related features such as recyclable packaging and Slovak origin received substantially lower importance ratings. These patterns provide a direct empirical answer to RQ1, demonstrating that functional and nutritional attributes outweigh ecological or origin-based considerations in shaping consumer preferences. To address RQ2, a chi-square test was conducted to assess whether physical activity frequency is associated with the frequency of consumption of healthy non-alcoholic beverages. The test yielded $\chi^2(12, N = 155) = 10.76, p = 0.550$, indicating no statistically significant association. Although descriptively more active individuals tended to consume healthy beverages more regularly, the differences were not substantial enough to confirm a meaningful relationship. This suggests that healthy beverage consumption is not strictly tied to lifestyle activity levels and may be influenced more strongly by other factors such as taste, price, or perceived health benefits.

Overall, the results reveal that health motivation remains the dominant factor shaping consumer preferences for healthy non-alcoholic beverages in Slovakia. Sensory attributes, price, and nutritional content play a decisive role, whereas sustainability and country-of-origin cues serve only as supplementary considerations. These insights highlight clear opportunities for healthy non-alcoholic beverage manufacturers and retailers: products should emphasise functional benefits, transparent nutritional composition, and reduced sugar and calorie content to align with consumer expectations. At the same time, the relatively low relevance of sustainability-related attributes suggests an untapped potential for future market development, particularly as environmental awareness continues to grow among younger consumers. The absence of a significant relationship between physical activity and consumption frequency further suggests that healthy beverages appeal to a broad spectrum of consumers, not exclusively those with highly active lifestyles. These insights offer valuable implications for producers and retailers seeking to optimise product positioning, communication, and formulation strategies within the Slovak market. Future research may further explore the influence of demographic factors, lifestyle clusters, and emerging trends such as functional beverages or plant-based alternatives to provide an even more comprehensive view of consumer behavior in this dynamic and evolving category.

Limitations

The quantitative research has several limitations that should be acknowledged. First, the research relied on a self-administered online questionnaire, which may introduce self-selection bias, as individuals who are more health-conscious or more active on digital platforms could be overrepresented. Second, the sample consisted predominantly of younger respondents, with the majority in the 21–30 age group. This age imbalance limits the generalisability of the findings to the broader Slovak population, particularly older consumer segments whose preferences and purchasing behaviour may differ. Third, the study used non-probability sampling, which does not guarantee full representativeness of the population and restricts the extent to which the results can be extrapolated. Fourth, the responses relied on self-reported behaviour and attitudes, which may be affected by recall bias or social desirability bias – especially in questions related to healthy lifestyle and consumption habits. Finally, although the survey captured a wide range of product attributes, it did not include objective behavioural measures (e.g., actual purchase data) that would allow a deeper verification of the relationship between stated preferences and actual purchasing patterns. Future research should therefore aim to include more diverse sampling methods, a more balanced demographic representation, and, potentially, to integrate behavioural or experimental data to enhance the robustness of the findings.

Acknowledgement

This publication was supported by VEGA no. 1/0398/22. The current status and perspectives on the development of the market for healthy, environmentally friendly, and carbon-neutral products in Slovakia and the European Union.

References

- Agresti, A. 2007. An introduction to categorical data analysis. 2nd ed., Wiley-Interscience.
- Anetoh, J. C. – Nnabuko, J. O. – Okolo, V. O. – Anetoh, V. C. 2020. Sensory Attributes of Malt Drinks and Consumer Purchase Decisions. In *Journal of Food Products Marketing*, vol. 26, 2020, no. 5, pp. 317–343. <https://doi.org/10.1080/10454446.2020.1767748>
- Ankur, J. – Saket, K. – Satish, Ch. – Pal, D. K. 2015. Likert Scale: Explored and Explained. In *Current Journal of Applied Science and Technology*, vol. 7, 2015, no. 4, pp. 396–403. <https://doi.org/10.9734/BJAST/2015/14975>
- Askew, K. 2020. Functional beverages see lifestyle consumer boost: Kerry. FoodNavigator. (Accessed by 2020 September 21). <https://www.foodnavigator.com/Article/2020/09/21/Functional-beverages-see-lifestyle-consumer-boost-Kerry>
- Baker, M. T. – Lu, P. – Parrella, J. A. – Leggett, H. R. 2022. Consumer Acceptance toward Functional Foods: A Scoping Review. In *International Journal of Environmental Research and Public Health*, vol. 19, 2022, no. 3, pp. 1217. <https://doi.org/10.3390/ijerph19031217>
- Čvirik, M. 2020. Health Conscious Consumer Behaviour: The Impact of a Pandemic on the Case of Slovakia. In *Central European Business Review*, vol. 9, 2020, no. 4, pp. 45–58. doi: 10.18267/j.cebr.249
- Darmon, N. – Drewnowski, A. 2008. Does social class predict diet quality? In *The American Journal of Clinical Nutrition*, vol. 87, 2008, no. 5, pp. 1107–1117. <https://doi.org/10.1093/ajcn/87.5.1107>
- Davies, K. 2024. UK Gen Z and Millennials: Consumer goods and shopping behavior. Statista. (Accessed by 2024 January 14). <https://www.statista.com/topics/12640/uk-gen-z-and-millennials-consumer-goods-and-shopping-behavior/>
- Drewnowski, A. – Specter, S. E. 2004. Poverty and obesity: The role of energy density and energy costs. In *The American Journal of Clinical Nutrition*, vol. 79, 2004, 1, pp. 6–16. <https://doi.org/10.1093/ajcn/79.1.6>
- Escobar-Farfán, M. – García-Salirrosas, E. E. – Guerra-Velásquez, M. – Veas-González, I. – Gómez-Bayona, L. – Gallardo-Canales, R. 2025. Psychological Determinants of Healthy Food Purchase Intention: An Integrative Model Based on Health Consciousness. In *Nutrients*, vol. 17, 2025, no. 7, pp. 1140. <https://doi.org/10.3390/nu17071140>
- Euromonitor International. 2025. Innovation and functionality drive the global soft drinks market to USD 1.1 trillion. (Accessed by 2025 June 12). <https://www.euromonitor.com/newsroom/press-releases/june-2025/innovation-and-functionality-drive-global-soft-drinks-market-to-usd1.1-trillion>
- Fathin, F. – Sosianika, A. – Amalia, F. – Kania, R. 2023. The Role of Health Consciousness and Trust on Gen Y and Gen Z Intention to Purchase Functional Beverages. In *Journal of Consumer Sciences*, vol. 8, 2023, pp. 360–378. <https://doi.org/10.29244/jcs.8.3.360-378>
- Fink, A. 2006. How to conduct surveys: A step-by-step guide. 3th ed., SAGE Publications, 2006.
- Grand View research. 2025 (n.d). Functional drinks market size, share & trends analysis report, 2024–2030. <https://www.grandviewresearch.com/industry-analysis/functional-drinks-market>
- Hallak, R. – Onur, I. – Lee, C. 2022. Consumer demand for healthy beverages in the hospitality industry: Examining willingness to pay a premium, and barriers to purchase. In *Plos one*, vol. 17, 2022, no. 5. <https://doi.org/10.1371/journal.pone.0267726>
- Chang, H. P. – Ma, C. C. – Chen, H. S. 2020. The Impacts of Young Consumers' Health Values on Functional Beverages Purchase Intentions. In *International journal of environmental research and public health*, vol. 17, 2020, no. 10, 3479. <https://doi.org/10.3390/ijerph17103479>
- Janssen, M. – Hamm, U. 2012. Product labelling in the market for organic food: Consumer preferences and willingness-to-pay for different organic certification logos. In *Food Quality and Preference*, vol. 25, 2012, no. 1, pp. 9–22. <https://doi.org/10.1016/j.foodqual.2011.12.004>
- Jayanti, R. K. – Burns, A. C. 1998. The antecedents of preventive health care behavior: An empirical study. In *Journal of the Academy of Marketing Science*, vol. 26, 1998, no. 1, pp. 6–15. <https://link.springer.com/article/10.1177/0092070398261002>
- Michaelidou, N. – Hassan, L. M. 2008. The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. In *International Journal of Consumer Studies*, vol. 32, 2008, no. 2, pp. 163–170. <https://doi.org/10.1111/j.1470-6431.2007.00619.x>
- Nielseni. 2024. Hydrate and Heal: The Rise of functional beverages. (Accessed by 2024 September 6). <https://nielseniq.com/global/en/insights/education/2024/rise-of-functional-beverages/>
- Pan, J. – Wu, K. S. – Huang, D. M. – Sun, S. W. 2025. Role of Health-Consciousness on Purchase Intention of Health and Wellness Food: The Serial Mediating Effect of Attitude and Desire. In *Nutrients*, vol. 17, 2025, no. 5, pp. 746. <https://doi.org/10.3390/nu17050746>
- Roy, A. 2025. 71% of Europeans are drinking less alcohol, while a generational shift forces beverage brands to rethink growth. (Accessed by 2025, October 7). <https://www.circana.com/post/71-of-europeans-are-drinking-less-alcohol-while-a-generational-shift-forces-beverage-brands-to-rethink-growth/>
- Tudoran, A. – Olsen, S. – Dopico, D. 2009. The effect of health benefit information on consumers health value, attitudes and intentions. In *Appetite*, vol. 52, 2009, pp. 568–79. <https://doi.org/10.1016/j.appet.2009.01.009>
- Witherington, A. 2025. The future of global functional drinks: Trends. (Accessed by 2025, February 20). <https://www.mintel.com/insights/food-and-drink/the-future-of-global-functional-drinks-trends/>
- World Health Organization. 2023. Reducing free sugars intake in adults to reduce the risk of noncommunicable diseases. (Accessed by 2023, August 9). <https://www.who.int/tools/elena/interventions/free-sugars-adults-ncds>
- Yadav, R. – Pathak, G. S. 2016. Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. In *Journal of Cleaner Production*, vol. 135, 2016, pp. 732–739. <https://doi.org/10.1016/j.jclepro.2016.06.120>

Contact address

Barbara Lenická
Bratislava University of Economics and Business
Dolnozemska cesta 1
852 35 Bratislava
Slovak Republic
✉ barbara.lenicka@euba.sk