

FACTORS INFLUENCING THE CHOICE OF NOVEL FOODS CONTAINING EDIBLE INSECTS – RESEARCH AMONG THE GENERATION Z IN POLAND

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Purpose: The objective of this study was to determine whether the lifestyles of young consumers in Poland (Generation Z) are associated with their preferences regarding the attributes of foods with edible insects, and whether they can influence their willingness to consume new, innovative foods with edible insects.

Design/methodology/approach: The empirical study was conducted by indirect interview method, via an online platform, among 749 students in Poland in 2023.

Findings: Generation Z's acceptance of foods containing edible insects as a solution or support to the problem of finding new food ingredients with high nutritional value was correlated with pleasure orientation (among men), lack of attachment to the culinary traditions of the region of origin (among men and women), high nutritional value of food and high health awareness (among women).

Research limitations/implications: The research has certain limitations. Despite the large size of the study group, the results obtained are not representative and cannot be generalised to the population of young adults (Generation Z) in Poland.

Practical implications: Acceptance of new foods containing edible insects (fresh, frozen, dried, powdered e.g. meal) by young consumers (Generation Z) should be based on reliable information about their nutritional value and the possibility of satisfying their needs according to their lifestyle and perceived values.

Social implications: The study effectively captured a range of lifestyle determinants, such as health awareness and its correlation with nutritional claims, pleasure orientation and its correlation with attractive taste and affordability (for men) and attractive appearance (for women).

Originality/value: The research enriches the existing literature on entomophagy by highlighting the potential acceptability of insect-based foods among young adults, thereby contributing to broader discussions on sustainable food systems and environmental protection. This novel approach not only addresses current environmental and nutritional issues, but also provides a basis for future research and policy development aimed at improving food security and sustainability.

Keywords: edible insects, novel food, food attributes, consumer studies, behaviors.

Category of the paper: Research paper.

1. Introduction

The potential of edible insects as a means of providing a sustainable and nutritious source of protein for a growing global population has been the subject of considerable research (Boland et al., 2013; van Huis et al., 2013; Popkin et al., 2012; Stull, 2021; Tilman, Clark, 2014; Wu et al., 2014). Nevertheless, despite the increasing interest in entomophagy in the fields of food science and industry, consumer acceptance of insect-based food products remains low in European countries, including Poland (Puteri, Jahnke, Zander, 2023, Mikulec et al., 2024; Modlinska et al., 2021; Piwowar et al., 2023). There is a discrepancy between consumers' understanding of the need to reduce meat consumption and their personal preference for foods containing edible insects (Modlinska et al., 2021; Piwowar et al., 2023). The most researched and consistently identified factors explaining negative consumer attitudes towards entomophagy are disgust and food neophobia, i.e. a lack of willingness to try new foods (Modlińska et al., 2021; Onwezen et al., 2021; Orkusz et al., 2020; Ribeiro et al., 2022; Wassmann, Siegrist, Hartmann, 2021). The disgust for eating insect-based foods may result from entrenched patterns about insects themselves, such as dirt, disease, environmental pollution and food degradation (Schäufele, Barrera Albores, Hamm, 2019; Tan et al., 2015; van Huis, 2020; van Huis et al., 2013). However, it has been indicated that the lack of visibility of insects in the food consumed may increase its acceptance by consumers (Kornher, Schellhorn, Vetter, 2019; Mikulec et al., 2024; Modlinka et al., 2020). In addition to the psychological factors previously discussed, the low availability of insect-based food products in retail outlets and the high retail prices resulting from small-scale production may also act as impediments to consumer acceptance (House, 2016; Reverberi, 2021). Overall, surveys of Western European populations indicate that the expanding insect-based food industry is confronted with considerable obstacles, particularly in regard to overcoming consumer reluctance to consume insects (Barton, Richardson, McSweeney, 2020; Dupont, Fiebelkorn, 2020; La Barbera et al., 2018; Lammers, Ullmann, Fiebelkorn, 2019; Modlinska et al., 2020; Orsi, Voegelé, Stranieri, 2019; Petrescu-Mag, Rastegari Kopaei, Petrescu, 2022; Schäufele, Barrera Albores, Hamm, 2019). Perhaps, consumers are already aware that growing and consuming insects can be a solution to environmental and health problems (Gantner et al., 2024; Guiné et al., 2023; Kornher, Schellhorn, Vetter, 2019; Mikulec et al., 2024; Mancini et al., 2019b; Oonincx, de Boer, 2012; Shafer et al., 2022; Smetana, Spykman, Heinz, 2021), however, educating people about the sustainable properties of insect-based foods and targeting marketing strategies to this characteristic is not sufficient to convince consumers to buy and eat

insects (Modlinska et al., 2021; Puteri, Jahnke, Zander, 2023). Puteri, Jahnke and Zander (2023) identified five main ways to increase the appeal and acceptance of insect-based food products: (1) the development of product attributes that align with the specific preferences of target consumers; (2) the implementation of more subtle labelling of the presence of insects; (3) the utilisation of value-based or competitive pricing strategies; (4) the assurance of the continued availability of products in the market; and (5) the promotion of products more effectively through advertising, tasting and social impact. In order to achieve this objective, it is essential to establish communication channels with potential young consumers (Mancini et al., 2019a). Therefore, the study of young consumers' preferences, acceptance, willingness to try, eat and/or purchase insect-based food products is of great importance for the future prospects of entomophagy in Poland (Mikulec et al., 2024).

The objective of this study was to determine whether the lifestyles of young consumers in Poland (Generation Z) are associated with their preferences regarding the attributes of foods with edible insects, and whether they can influence their willingness to consume new, innovative foods with edible insects.

The following research hypotheses were formulated:

H1. The choice of attributes of new innovative foods containing edible insects in their composition is associated with the lifestyles of young consumers.

H2. It is possible to predict the willingness of young consumers in Poland to consume new innovative foods with edible insects based on their lifestyle.

2. Research methodology

An empirical study was conducted among 749 students at three Polish universities: Gdynia Maritime University, the Academy of Applied Sciences in Nowy Sącz and the University of Warmia and Mazury in Olsztyn. The respondent group included 412 women and 337 men. All respondents gave their free, informed consent to participate in the survey and were assured of anonymity. Participants in the study were those declaring to eat all foods and not to limit their consumption of meat or animal products.

The survey was conducted using a specially designed questionnaire, via a web-based platform (CAWI, Computer Assisted Web Interview) in 2023. The questionnaire was validated by assessing the construct validity and estimating the reliability of the scales using Cronbach's alpha coefficient. The α value obtained was 0.89, indicating good reliability. A set of statements adapted from scientific publications by other authors was used in the preparation of the questionnaire. The instrument contained 32 items, measured on a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree and 5 = strongly agree) (Likert, 1932).

The details of the items in each dimension are given below:

- Items in dimension one - Lifestyle (8 items): I am a person committed to work (1); I am a person committed to learning (2); I am a person pleasure oriented (3); I am a person who values convenience and speed of food preparation (4); I am a person who pays attention to the consumption of food with high nutritional value (5); I am a person who values the culinary traditions of the origin region (6); I am a person with high health consciousness (7); I am a person with high physical activity (8). The first, fifth, sixth, and seventh items were adapted from Arvola et al. (2007) and the others (2, 3, 4, 8) were additional.
- Items in dimension two - The attributes of novel foods containing edible insects (fresh, frozen, dried, powdered, for example, meal) can be categorised as follows: attractive taste (1), attractive smell (2), attractive appearance (3), high nutritional value (4), varied assortment and commercial availability (5), popularity (fashion) (6), affordable price (7), size and attractiveness of packaging (8), convenience of use (9), health claim (10), nutritional claim (11), reduction of CO₂ emissions (12), availability of recipes on blogs and websites (13) (Modlinska et al., 2021; Puteri, Jahnke, Zander, 2023).
- Items in dimension three - The willingness to consume novel foods containing edible insects (fresh, frozen, dried, or powdered, for example, in the form of a meal) would be contingent upon their availability in different product forms (11 items): hamburgers, meat products and preparations (1) (Ardoin, Prinyawiwatkul, 2020; House, 2016; Kornher, Schellhorn, Vetter, 2019); ready meals: soups, pasta, pancakes etc. (2) (Ardoin, Prinyawiwatkul, 2020; Lombardi et al., 2019; Herbert, Beacom, 2021; Mazurek et al., 2023); bread, rolls, pizza, other bakery products. (3) (Ardoin, Prinyawiwatkul, 2020; Kowalski et al., 2022a; Orkusz et al., 2020); cakes, cookies, chocolate-covered insects, other pastry and confectionery products. (4) (Ardoin, Prinyawiwatkul, 2020; Kowalski et al., 2022b; Modlinka et al., 2020; Orkusz et al., 2020; Pauter et al., 2018); bars, crisps, other snacks. (5) (Ardoin, Prinyawiwatkul, 2020; García-Segovia et al., 2020; Kowalski et al., 2022c; Ruskowska, Tańska, Kowalczewski, 2022); post-workout drinks, nutritional supplements for people with high protein requirements. (6) (Ardoin, Prinyawiwatkul, 2020); cottage cheese, yoghurt and other dairy drinks. (7) (Ardoin, Prinyawiwatkul, 2020; Tan, Verbaan, Stieger, 2017); sauces, mayonnaise. (8) (Herbert, Beacom, 2021); cricket (in frozen, dried or powdered form). (9) (Lim et al., 2022; Mazurek et al., 2023); mealworm larvae (frozen, dried or powdered) (10) (Lim et al., 2022; Mazurek et al., 2023); migratory locusts (frozen, dried or powdered) (11) (Lim et al., 2022).

Spearman's rank correlation analysis was used to establish the relationship (relationship) between lifestyle and the attributes of the new innovative food containing edible insects (fresh, frozen, dried, powdered e.g. meal) determining young consumers' willingness to consume it. In addition, Spearman's rank correlation analysis was used to examine the relationship between

lifestyle and willingness to consume the new, innovative food containing edible insects (fresh, frozen, dried, powdered e.g. meal) indicated in the study.

A significance level of $p < 0.05$ was assumed for all statistical analyses. Calculations were performed using Statistica 13.3 (Tibco Software, Palo Alto, USA).

3. Results and discussion

The lifestyle of young adults in Poland was found to be a factor influencing the choice of edible insect food attributes and the willingness to consume new, innovative foods containing edible insects. In addition, the gender of the respondents also appeared to have a significant effect on the importance of individual attributes and the products preferred for consumption (Table 1-4). In both males and females, no correlation was observed between work and learning commitment and the attributes determining willingness to consume foods containing edible insects in their composition (Table 1 and 2).

Table 1.

Lifestyle and attributes of new innovative food with edible insects determining men's willingness to consume them

Food attributes	I am a person:							
	committed to work	committed to learning	pleasure oriented	who values convenience and speed of food preparation	who pays attention to the consumption of food with high nutritional value	who values the culinary traditions of the origin region	with high health consciousness	with high physical activity
Attractive taste	-0.02	-0.02	0.13	0.12	-0.01	-0.13	0.04	-0.07
Attractive smell	-0.01	-0.01	0.08	0.08	-0.03	-0.07	0.04	-0.05
Attractive appearance	0.03	-0.05	0.04	0.07	0.03	-0.09	0.06	-0.09
High nutritional value	-0.01	-0.03	0.09	0.09	0.16	-0.09	0.08	0.02
Varied assortment and commercial availability	-0.03	-0.04	0.06	0.10	0.04	-0.14	0.00	-0.04
Popularity (fashion)	0.03	-0.04	-0.01	0.10	0.09	-0.02	0.02	-0.03
Affordable price	0.02	0.00	0.11	0.11	0.05	-0.13	0.04	-0.06
Size and attractiveness of packaging	0.03	0.00	-0.03	0.09	0.02	-0.08	-0.03	-0.10
Convenience of use	0.01	0.03	0.04	0.13	0.06	-0.12	0.02	-0.06
Health claims	-0.07	0.02	0.09	0.06	0.13	-0.04	0.09	0.02
Nutrition claims	-0.05	0.07	0.07	0.10	0.17	-0.03	0.14	0.02
Reduction of CO ₂ emissions	-0.01	-0.01	0.03	0.05	0.09	0.02	0.07	0.02
Availability of recipes on blogs and websites	-0.03	0.03	0.07	0.07	0.07	-0.01	0.05	-0.01

Explanatory notes: * bold values are statistically significant.

Source: own elaboration based on survey results.

A positive, significant correlation was observed between pleasure orientation and attention to attractive taste and affordable price by men, and among women attention to attractive appearance. Attributes such as attractive taste, affordability and convenience of use were important for men who valued convenience and speed of food preparation, and for women: attractive taste, smell, appearance, varied assortment and commercial availability, and convenience of use (Table 1 and 2).

Table 2.

Lifestyle and attributes of new innovative food with edible insects determining women's willingness to consume them

Food attributes	I am a person:							
	committed to work	committed to learning	pleasure oriented	who values convenience and speed of food preparation	who pays attention to the consumption of food with high nutritional value	who values the culinary traditions of the origin region	with high health consciousness	with high physical activity
Attractive taste	-0.02	0.05	0.06	0.10	0.08	-0.08	0.08	0.04
Attractive smell	-0.04	0.06	0.08	0.11	0.08	-0.06	0.09	0.05
Attractive appearance	-0.05	0.09	0.11	0.12	0.09	-0.06	0.10	0.07
High nutritional value	-0.01	0.06	0.09	0.08	0.24	-0.06	0.21	0.13
Varied assortment and commercial availability	0.00	0.05	0.07	0.11	0.16	-0.03	0.16	0.10
Popularity (fashion)	0.02	-0.02	0.07	0.05	0.09	-0.03	0.11	0.12
Affordable price	-0.07	0.03	0.07	0.08	0.05	-0.10	0.05	0.03
Size and attractiveness of packaging	-0.07	0.00	0.06	0.03	0.06	-0.05	0.09	0.10
Convenience of use	-0.03	0.04	0.07	0.12	0.13	-0.09	0.11	0.08
Health claims	0.00	0.03	0.10	0.07	0.20	-0.04	0.19	0.15
Nutrition claims	0.00	0.03	0.10	0.07	0.19	-0.06	0.20	0.15
Reduction of CO ₂ emissions	-0.09	0.02	0.06	0.05	0.15	-0.05	0.11	0.10
Availability of recipes on blogs and websites	-0.01	0.01	0.09	0.07	0.15	-0.06	0.12	0.10

Explanatory notes: * bold values are statistically significant.

Source: own elaboration based on survey results.

Women and men who paid attention to foods with high nutritional value indicated as important attributes for them: high nutritional value, health and nutrition claims. In addition, women who valued food with high nutritional value further indicated that convenience of food preparation, reduction of CO₂ emissions and availability of recipes on blogs and websites were important to them. A negative significant correlation was also observed between men and valuing the culinary traditions of the region of origin. The less the male respondents valued the culinary traditions of the region of origin, the more important for them was the attractive taste, the varied assortment and commercial availability, the affordable price and the convenience of using new, innovative foods containing edible insects. It was also found that health

consciousness correlated significantly, positively in men only with the attribute relating to nutrition claims, while physical activity did not correlate with any of the attributes determining willingness to consume food containing edible insects (Table 1). Among women, significant positive correlations were observed between health consciousness and physical activity and attributes of foods containing edible insects (Table 2). Health consciousness and physical activity were related to attributes such as high nutritional value, Varied assortment and commercial availability, popularity, health and nutrition claims, CO₂ reduction and availability of recipes on blogs and websites. In addition, women with a high health consciousness indicated that attractive appearance and convenience of use were still important to them, while respondents with a high physical activity level indicated that the size and attractiveness of the packaging of the new, innovative food with edible insects (Table 2).

Pleasure orientation and valuing the culinary traditions of the region of origin were lifestyle determinants for which correlations were observed with men's willingness to consume selected products containing edible insects. Male respondents who were more pleasure-oriented were ready to consume new and innovative foods containing edible insects in their composition in the form of hamburgers and meat products and preparations, and declared a willingness to consume crickets (in frozen, dried or powdered form). It was also shown that the less men appreciated the culinary traditions of their region of origin, the higher their willingness to consume new, innovative foods containing edible insects in the form of ready meals (soups, pasta, pancakes, sauces and others), bakery products (bread, rolls, pizzas and others) and snacks (bars, crisps and other snacks) was declared (Table 3).

In the study group of women, the lifestyle determinants influencing their willingness to consume new innovative foods with edible insects in them were identified as the high nutritional value of the food, the valuing of the culinary traditions of the region of origin, and high health consciousness (Table 4). The women who considered the nutritional value of the food they consumed to be important and those with higher levels of health consciousness indicated their willingness to consume new innovative foods with edible insects, including post-workout drinks and nutritional supplements for those with high protein requirements. Conversely, women with a lower valuation of their region's culinary traditions were more willing to consume new innovative foods containing edible insects, including ready meals (such as soups, pasta, pancakes, sauces, and others) and bakery products (such as bread, rolls, pizzas, and others) (Table 4). Additionally, a greater willingness to consume cottage cheese, yogurt, other fermented dairy products, as well as sauces and mayonnaise was observed (Table 4).

The adoption of insect eating, known as entomophagy, by European consumers is a challenging process that occurs at the social, cultural, and psychological levels (Dagevos, 2021; Mandolesi, Naspetti, Zanolli, 2022). A study of young adults in Poland (Generation Z) has demonstrated that they are willing to take a number of actions related to modifying their dietary habits with the objective of enhancing their nutritional status (Platta et al., 2023a, 2023b). The high nutritional value of edible insects means that they can be used not only for

high-protein products, but also for the supplementation of deficiencies of, for example, micronutrients such as iron, calcium, n-3 fatty acids and B vitamins (Orkus, 2021). Furthermore, the content of essential amino acids meets the requirements set out by the World Health Organisation (WHO) (Gharibzahedi, Altintas, 2024). The composition of n-3 and other fatty acids in mealworms is similar to that found in fish (Lange, Nakamura, 2023). In our study, it was shown that women (female students) for whom the nutritional value of the food consumed was important, and women with a higher health consciousness, declared a willingness to consume new, innovative foods with edible insects in the form of post-workout drinks and nutritional supplements for those with high protein requirements (Table 4). High-protein snacks are attractive to young consumers who want to increase protein intake in their diet (Douglas et al., 2013; Mirazimi et al., 2022). However, the high environmental impact of conventional protein sources is driving the search for more sustainable alternatives, such as edible insects (Batat, Peter, 2020; Li, Kallas, 2021; H'emar-Nicolas, Pantin-Sohier, Gallen, 2022; Huis, Oonincx, 2017; Mustapa, Kallas, 2023).

Table 3.

Lifestyle and willingness to consume „novel foods” containing edible insects (fresh, frozen, dried, powdered e.g. meal) among men

Products	I am a person:							
	committed to work	committed to learning	pleasure oriented	who values convenience and speed of food preparation	who pays attention to the consumption of food with high nutritional value	who values the culinary traditions of the origin region	with high health consciousness	with high physical activity
Hamburgers, meat products and preparations	-0.04	0.02	0.14	0.10	0.00	-0.10	0.03	-0.09
Ready meals: soups, pasta, pancakes, sauces, etc.	-0.03	-0.04	0.09	0.03	-0.04	-0.12	-0.02	-0.07
Bread, rolls, pizza, other bakery products	-0.04	0.02	0.08	0.06	0.00	-0.12	0.02	-0.06
Cakes, cookies, chocolate-covered insects, other pastry and confectionery products	0.02	-0.05	0.05	0.08	0.01	-0.08	0.01	-0.02
Bars, crisps, other snacks	0.01	-0.04	0.04	0.07	-0.03	-0.13	-0.03	-0.05
Post-workout drinks, nutritional supplements for people with high protein requirements	-0.12	-0.04	0.07	0.06	0.04	-0.06	-0.01	-0.02
Cottage cheese, yoghurt and other dairy drinks	-0.07	0.02	0.09	0.09	0.02	-0.10	0.04	-0.03
Sauces, mayonnaise	-0.06	0.02	0.09	0.07	0.00	-0.07	0.00	-0.08
Crickets (in frozen, dried or powdered form)	-0.04	0.00	0.11	0.06	-0.02	-0.10	0.02	-0.03
Mealworm larvae (frozen, dried or powdered)	-0.03	0.00	0.10	0.04	-0.04	-0.10	-0.01	-0.05
Migratory locusts (frozen, dried or powdered)	-0.01	0.00	0.10	0.02	-0.04	-0.10	-0.01	-0.04

Explanatory notes: * bold values are statistically significant.

Source: own elaboration based on survey results.

Table 4.

Lifestyle and willingness to consume „novel foods” containing edible insects (fresh, frozen, dried, powdered e.g. meal) among women

Products	I am a person:							
	committed to work	committed to learning	pleasure oriented	who values convenience and speed of food preparation	who pays attention to the consumption of food with high nutritional value	who values the culinary traditions of the origin region	with high health consciousness	with high physical activity
Hamburgers, meat products and preparations	-0.03	-0.01	0.07	0.02	0.02	-0.05	0.11	0.03
Ready meals: soups, pasta, pancakes, sauces, etc.	-0.03	-0.02	0.06	0.04	0.07	-0.10	0.08	0.07
Bread, rolls, pizza, other bakery products	-0.01	0.02	0.09	0.02	0.07	-0.12	0.08	0.05
Cakes, cookies, chocolate-covered insects, other pastry and confectionery products	-0.05	-0.01	0.08	0.01	0.06	-0.09	0.08	0.09
Bars, crisps, other snacks	-0.05	0.04	0.08	0.04	0.09	-0.09	0.07	0.07
Post-workout drinks, nutritional supplements for people with high protein requirements	-0.05	0.02	0.08	0.03	0.12	-0.09	0.11	0.08
Cottage cheese, yoghurt and other dairy drinks	-0.05	-0.02	0.05	-0.01	0.05	-0.11	0.05	0.08
Sauces, mayonnaise	-0.05	-0.05	0.03	0.03	0.04	-0.11	0.08	0.08
Crickets (in frozen, dried or powdered form)	-0.10	-0.01	0.03	-0.01	0.03	-0.03	0.06	0.07
Mealworm larvae (frozen, dried or powdered)	-0.07	0.01	0.04	0.00	0.07	-0.04	0.08	0.08
Migratory locusts (frozen, dried or powdered)	-0.06	0.03	0.04	0.01	0.07	-0.05	0.09	0.09

Explanatory notes: * bold values are statistically significant

Source: own elaboration based on survey results.

It identified a significant segment of consumers in Catalonia (Spain), comprising 55.7% of respondents, who are willing to purchase yoghurt enriched with insect protein. The likelihood of purchasing yoghurt enriched with insect protein increases in younger adults, male consumers, living in rural areas, having a child in the family and being economically active (Khalil et al., 2024). Therefore, it is important to communicate information related to health and environmental benefits and innovations to inform consumers about the added value of insect-based products compared to other alternatives and to ensure that food with edible insects taste good (Khalil et al., 2024).

A number of studies have examined European consumer preferences towards food products containing insects as ingredients or whole insects. Consumer preferences have been studied for: an insect-based product that looks like sushi (Pascucci, De-Magistris, 2013); insect-based hamburgers (Kornher et al., 2019); mealworm products (Tan et al., 2016; Piha et al., 2018);

pasta, chocolate and cakes with mealworms (Lombardi et al., 2019); meatballs and milk drink with mealworms (Tan et al., 2017), cricket powder (Petersen et al., 2020); cricket powder croquettes (Gurdian et al., 2021). The studies presented here showed that dietary and environmental factors have a greater impact on the likelihood of purchasing powder and edible insect products than taste factors. Furthermore, the literature reports that concern for the environment and attitudes and intentions towards foods with edible insects in them are important determinants of Generation Z's potential willingness to purchase and consume both edible insects and foods with insects in them (Platta et al., 2024). In our study, similar relationships were found, although more variables related to the realized lifestyles of young consumers determining willingness to consume foods with insects were determined. It was shown that young women with a high health consciousness declared that the following were important to them: health and nutrition claims, high nutritional value, reduction of CO₂ emissions, attractive appearance, varied assortment and commercial availability, convenience of use, popularity and availability of recipes on blogs and websites, new innovative foods with edible insects (Table 2). For young men with high health awareness, the nutritional claims of edible insect foods were important (Table 1).

The findings of our study, in conjunction with those of Khalil et al. (2024), indicate that the target consumer profile for edible insect products is comprised of younger consumers. Therefore, insect-based products can satisfy consumer trends for sustainable consumption and high protein content. The promotion of edible insect foods has the potential to enhance social well-being at both the individual and community levels. This can be achieved by improving livelihoods, generating income and alleviating hunger in developing countries, while supporting entrepreneurship and innovation worldwide (Batat, Peter, 2020; Hlongwane, Slotow, Munyai, 2021; van Huis et al., 2013).

4. Conclusions

The study discussed in the article highlights how the lifestyle of young adults in Poland influences their choice of food attributes and willingness to consume new, innovative products containing edible insects. The results of the study allowed verification of the research hypotheses. Hypotheses 1 and 2 were partially confirmed. The analysis revealed that gender significantly affects the importance of individual attributes and product preferences. Men who are pleasure-oriented and value convenience and speed in food preparation prioritize attractive taste and affordable price. In contrast women place importance on attractive appearance, smell, varied assortment and commercial availability, and convenience of use. The research found no correlation between work and learning commitment and the willingness to consume insect-based foods. Additionally, men who do not value the culinary traditions of their region of origin

show a higher propensity to try new insect-based ready meals and bakery products. In contrast women with high nutritional awareness and health consciousness are more inclined towards consuming post-workout drinks and dietary supplements containing insects. These findings underscore the potential of targeting young consumers with sustainable, high protein insect-based products, which can cater to current consumer trends and contribute to social well-being by promoting entrepreneurship and innovation globally.

The paper makes a significant contribution to understanding the dietary choices of Generation Z in Poland. One of the outstanding positive aspects of this research is its innovative focus on the relationship between lifestyle factors and the willingness to consume insect-based foods, a topic of increasing relevance given global food security challenges. Using a complex online survey method (CAWI) for data collection, the survey effectively captured several lifestyle determinants for young consumers (students) such as: health consciousness and its correlation with nutrition claims; speed and convenience of food preparation and its correlation with taste and convenience of use; attention to foods with high nutritional value and its correlation with high nutritional value of foods, health and nutrition claims. Despite its limitations, such as the non-representative nature of the sample for the adult Polish population, the study provides actionable insights for developing strategies to promote sustainable diets. In addition, the research enriches the existing literature on entomophagy by highlighting the potential acceptability of insect-based foods among young adults, thereby contributing to broader discussions on sustainable food systems and environmental protection. This novel approach not only addresses current environmental and nutritional issues but also provides a basis for future research and policy development aimed at improving food security and sustainability.

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