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## Perceptions of environmental benefits from sustainable food consumption patterns: evidence from the Generations Z and Y cohort

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**Abstract:** This paper presents the research results of a study focusing on peoples' perceptions ( $N = 513$ ) about the environmental benefits from specific consumption patterns. Data were collected from Greece with participants belonging to the Generation Z ( $N = 252$ ) and the Generation Y ( $N = 261$ ) cohort via an online questionnaire. Factor and cluster analyses provided segments based on subjects' perceptions of environmental benefits from sustainable food practices. Precisely, the three groups that arose were the 'neutrals', the 'mindful and relatively optimistic', and the 'pessimists'. The profiles of the segments are also presented. The groups formed reveal the marketing communication patterns that should be applied in order to target each segment to achieve long-run results of sustainable food consumption that can produce future environmental benefits.

**Keywords:** sustainable food consumption; SFC; environmental benefits; Generation Y; Generation Z; perceptions, marketing communication; digital marketing.

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## 1 Introduction

Unfortunately, contemporary consumption models are not considered sustainable (Reisch et al., 2013), while food is a major player in sustainable consumption and sustainable production due to its multilevel effects (Sedlacko et al., 2013). Sustainable consumption (SC) and production refer to “the use of services and related products, which respond to basic needs and bring a better quality of life while minimising the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardise the needs of further generations” (unep.org). Moreover, food consumption patterns may be considered a key trigger of environmental relegation. Consequently, friendly environmental practices, such as SC patterns, are needed primarily to secure a sustainable future. As a result, sustainable food consumption (SFC), which is under the umbrella of SC, has attracted several researchers’ attention because of its multidimensionality and the wide variety of effects it leads to (Reisch et al., 2013). Furthermore, it should not be overlooked that SFC may also be seen as the outcome of sustainable food choices and diets (UK Parliament, 2011), and food choices are affected by people’s attitude and perceptions (Marty et al., 2017; Warwick et al., 1999).

Lee et al. (2016) have pointed out that according to the theory of planned behaviour, positive perception develops a favourable attitude which leads to positive behavioural intention. Therefore, governments should comprehend individuals’ perceptions related to the impact of various food consumption patterns on the environment; admittedly it is well known that perceptions are tightly connected to behaviour (Anant, 2010). Furthermore, the behaviour of a country’s younger-aged citizens indicate the future of the country. Similarly, it should be highlighted that it is acknowledge that generational cohorts are better indicators than age in consumer research (Leask and Barron, 2021; Pew Research Center, 2015), and for so, the generational cohort theory is continuously gaining attention in marketing (Kamenidou et al., 2019a; Haddouche and Salomone, 2018). Taking into account that the youngest adult generational cohorts form future parents and future societies’ leaders, their perceptions end up being particularly important (Kamenidou et al., 2019b).

Thorough research on SFC gave rise to the following issues that can be considered to be viewed as gaps in the academic literature. First of all, generational cohort studies in the area of sustainable or organic food consumption are a relatively understudied topic, also evident by the fact that a search of ‘SFC’ and ‘generational cohorts’ provides with

57 academic papers, while the keywords ‘organic food’ and ‘generational cohorts’ provided with 188 papers (searched 3rd June 2021). Additionally, for the search of ‘SFC’ or ‘organic food’ and each generation separately, the maximum academic papers retrieved were related to the Generation Y cohort ( $N = 904$ ) and Generation X ( $N = 1,030$ ). Though, it should be indicated that in more than 90% of the papers, the specific cohort was merely mentioned (e.g., in the reference section) but yet not analysed. In all instances collected, an extremely limited percentage was retrieved for each cohort. Likewise, only a handful of studies make reference simultaneously to the Generation Z (Gen Zers) and Generation Y (Gen Yers) cohorts and the sustainable/organic food consumption (Kita et al., 2021; Kamenidou et al., 2020b; Krasulja et al., 2020; Perito et al., 2020; Zalega, 2019; Wang, 2017). Lastly, only one study was identified pertaining to perceived environmental benefits (PEBs), SFC, and generational cohorts combined, i.e., Kamenidou et al. (2020b), which deals with the EB of consuming sustainable food with a focus on the Gen Zers.

Within this context, and acknowledging all the above parameters, the following four research questions (RQs) arose:

- RQ1 What are peoples’ perceptions regarding the EB from specific consumption patterns?
- RQ2 Can individuals be grouped based on these perceptions?
- RQ3 What is the profile of each group based on their socioeconomic and demographic characteristics?
- RQ4 What marketing communication techniques should be implemented in order for each of these groups to produce favourable perceptions and adjust their behaviour accordingly in the future?

These RQs ultimately were transformed to the aim and objectives of this study. Therefore, the study aims to explore individuals’ perceptions of the environmental impact (EI) of specific consumption patterns (answering RQ1). For this aim to be fulfilled, data were drawn from Greece, with adult participants belonging to the Gen Zer cohort (i.e., born between 1995–2009) and the Gen Yer cohort (i.e., born 1978–1994). According to the literature, these two cohorts constitute the youngest cohorts (Kamenidou et al., 2020a; Williams and Page, 2011).

Furthermore, the objectives of the study are to:

- 1 Explore Gen Zers and the Gen Yers perceptions regarding the EB from specific consumption patterns (answering RQ1).
- 2 Identify – through segmentation techniques – the groups of individuals with homogeneous perceptions (answering RQ2).
- 3 Describe the profile of each group based on their demographics and socioeconomic characteristics (answering RQ3).
- 4 Propose marketing communication techniques so as to increase Gen Zers and Gen Yers awareness and develop favourable perceptions of food consumption patterns to trigger future beneficial environmental outcomes (answering RQ4).

The outcome of this research is valuable to government officials and authorities that deal with sustainable issues. Therefore, it provides insights into two generational cohorts’

perceptions of the EB of specific food consumption patterns. Consequently, government officials and authorities will be able to adjust their marketing communication methods in order to be more efficient when targeting the members of these cohorts.

## 2 Literature review

There is an abundance of studies that deal with the EI of food consumption patterns (Grosso et al., 2020; Notarnicola et al., 2017; Ropke, 2001). One issue of interest is sustainable food consumption behaviour (SFCB) which encompasses on different sub-issues. Such sub-issues are EB and EI of adopting SFCB (Kamenidou et al., 2020b; Matzembacher and Meira, 2019; Reynolds et al., 2014), while another focal point is the barriers of adopting SFCB (e.g., Hansmann et al., 2020; Yadav et al., 2019; Ede et al., 2011). Also, a magnitude of papers focuses on meat, fish, and conventional product consumption reduction as an environment-friendly practice (Bonnet et al., 2020; Austgulen et al., 2018; Reynolds et al., 2014) or consumption of organic produce, fish, and meat (Annunziata et al., 2019; Siegrist and Hartmann, 2019; De Francesco, 2003). A different sub-area of interest, too, is strategies of food consumption practices that will reduce the carbon footprint. Some of the strategies presented are associated with the consumption of local products and products that incorporate fewer marketing function activities. Examples consist of a smaller number of intermediaries and the use of short supply chains (de Oliveira et al., 2021; Annunziata et al., 2019; Scalvedi and Saba, 2018; Galli and Brunori, 2013), or the use of less excessive packages or purchase products that are sold in bulk (Kamenidou et al., 2019b; Kim, 2017; Piscopo, 2015). Likewise, an issue of interest extensively explored is consumer characteristics and their effect on SFC (Kamenidou et al., 2020a; Wang, 2014). Equally important issue that arose quite recently is substituting meat consumption by consuming insects (Hwang et al., 2020; Cicatiello et al., 2016) or artificial meat (Hocquette, 2015). On the contrary, segmentation analysis based on SFC constitutes a rather understudied area (Radojević et al., 2021; Funk et al., 2020; Kamenidou et al., 2020b, 2019b). It should be noted that the abovementioned studies are only some of the subjects examined by academics regarding SFC and its EI.

As concerns the key aspects of this study, i.e., segmentation, generational cohorts, EB, and SFCB, a small number of studies have been found focusing on segmentation and Gen Yers or Gen Zers, all of which are presented in Table 1.

**Table 1** Segmentation studies with Generations Z and Y and SFCB

Authors	Generational cohort	Aim	Findings
Lo et al. (2020)	Millennials (Gen Yers), N = 468, Hong Kong, China	Analyse sustainable restaurant dining behaviour and segment sample based on it	Six segments: ‘healthy spirits’, ‘healthy environmentalists’, ‘environmental hypocrite’, ‘health conscious but not healthy’, ‘utility saver’, and ‘indifferent’
Kamenidou et al. (2020b)	Gen Zers, N = 252, University students Greece	Segmentation based on EB assessment from specific consumption patterns	Three clusters: ‘disbelievers – SFC avoiders’, ‘believers – potential SFC consumers’, and ‘sceptics – maybe SFC consumers’

**Table 1** Segmentation studies with Generations Z and Y and SFCB (continued)

Authors	Generational cohort	Aim	Findings
Ivanova et al. (2019)	Gen Xers and Gen Yers, N = 1,870, France	Segmentation based on beliefs, attitudes, and behaviours of environmentally responsible (ER) consumption	A generational (cohort) effect on the intention to purchase ER products for two determinants – PCE and ME ('perceived consumer effectiveness' and 'media exposure')
Kamenidou et al. (2019b)	Gen Zers, N = 252, University students Greece	Segmentation based on SFCB and willingness to comply SFCB in the future	Two segments: 'the under-consideration students' and 'the negatively positioned students'

### 3 Methodology

Fifteen items were employed to assess the EI and specifically the EB of specific food consumption behaviours. These items in their majority were adopted from previous research and adjusted to fit the current study's aims and objectives. More precisely, six items were adopted from Tobler et al. (2011) and six items were adopted from Vanhonacker et al. (2013). Additionally, from the qualitative research results which was also undertaken, three items were added. All answers were rated on a seven-point Likert type scale [1 = no/very small EB, 2 = small EB; 3 = slightly small EB; 4 = neither very small nor very large EB (neutral answer); 5 = slightly large EB; 6 = large EB; and lastly, 7= huge/very large EB]. Additionally, socioeconomic and demographic questions were also included in the questionnaire.

The study targeted adult individuals belonging to the Gen Zer and Gen Yer cohort. Data was collected via internet applying a non-probability sampling method, using a combination of sampling methods (criteria, convenience, and snowball). In order to participate in the research, criteria were applied. Specifically, they had to be an adult Gen Zer (i.e., born between 1995–2002), or a Gen Yer. They also must have internet access, an email or Facebook account in order to have access to the questionnaire. The questionnaire was distributed through social media accounts and e-mail addresses, encompassing with the aim of the study, the eligible contributors, and the link to the questionnaire. When the questionnaire opened it also provided with the above information as well as the instructions, and the consent of using the data. Participants were asked to forward the link to others that meet the above criteria. Valid questionnaires were considered those that fell into the above criteria and provided with a consent to use their data for statistical analysis. The final number of completed questionnaires retrieved amounts to 513, encompassing 252 Gen Zers and 261 Gen Yers. The SPSS version 24 was used, and the subsequent analysis included: descriptive statistics; factor, reliability, cluster analyses; and chi-square tests ( $\alpha = 0.05$ ).

Ethical approval:

"There are no ethical issues involved in the processing of the questionnaire data used in the study. The necessary consents have been obtained by the persons involved, and the anonymity of the participants has been secured. All procedures performed in studies involving human participants were in accordance with the ethical standards of the International Hellenic University

research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

## 4 Results – discussion

### 4.1 Sample profile

The majority of the sample comprised females (54.2%), with the two cohorts being equally represented: Gen Zers by 49.1% and Gen Yers by 50.9%. More than 70% of the sample were single, had completed postsecondary education, and resided in an urban area. According to Table 2, and with respect to profession, more than half of the sample were dependent on others, and in relation to the family net monthly income, the largest body of participants fell within the €1,000.01–2,000.00 range (47.5%).

**Table 2** Participants’ profile

<i>Sample characteristics</i>	<i>Frequencies</i>	<i>Percentages (%)</i>
Gender		
Male	235	45.8
Female	278	54.2
Cohort		
Generation Z	252	49.1
Generation Y	261	50.9
Marital status		
Single	373	72.7
Married	124	24.2
Divorced	12	2.3
Widowed	4	0.8
Education		
Secondary (gymnasium and lyceum)	7	1.4
Postsecondary (IEK, private college, university students)	373	72.7
Graduate/postgraduate	133	25.9
Profession		
Salaried (employee in the public or private sector, labourer, on pension)	163	31.8
Businessman/businesswoman	44	8.6
Dependent on others (student, housekeeper, unemployed)	306	59.6
Area of residence		
Urban	370	72.1
Semi-rural	72	14.0
Rural	71	13.8
Net monthly family income (€)		
<1,000.00	185	36.1
1,000.01–2,000.00	243	47.4
2,000.01–3,000.00	69	13.5

*Source:* The authors

#### 4.2 Perceptions of EB from SFCB

Table 3 provides participants' perceptions of the EI regarding 15 FCB patterns (answering the aim of the research/RQ1). From Table 3, it is obvious that participants consider that the higher EB derives from consuming only seasonal fruits and vegetables. In contrast, the lowest benefit derives from substituting protein with insect consumption and generally from substituting proteins in peoples' diet/consumption patterns.

**Table 3** Perceptions of EB from SFCB (%)

SFCB	1	2	3	4	5	6	7	MS
Consuming only seasonal fruits and vegetables	4.3	6.6	5.5	18.3	16.0	23.6	25.7	5.09
Buying organic food	4.3	7.2	4.7	22.2	17.0	21.6	23.0	4.97
Consuming meat types with lower environmental impact	4.7	9.0	8.0	19.5	14.6	18.9	25.3	4.88
Purchasing fruit and vegetables in bulk form	4.5	6.8	9.7	21.4	12.9	26.1	18.5	4.84
Buy regional food	7.4	6.6	8.0	17.5	17.7	20.9	21.8	4.81
Consuming organic meat	5.1	8.0	11.5	20.3	15.4	19.9	19.9	4.72
Avoiding buying or consuming ready-made pre-packed foods	5.7	7.8	9.6	18.7	23.8	18.1	16.4	4.67
Consuming sustainably farmed fish	4.7	8.2	6.8	28.1	15.4	21.4	15.4	4.67
Consuming less meat (maximum once or twice per week)	5.1	7.4	9.6	25.0	18.7	18.3	16.0	4.64
Avoiding consumption of any imported agricultural products and foodstuffs	6.0	8.4	9.7	24.2	16.8	20.3	14.6	4.57
Avoiding food products with excessive packaging	12.3	8.0	8.6	23.0	14.6	17.3	16.2	4.36
Consuming plant-based meat substitutes	6.4	10.7	10.7	27.3	18.5	14.4	11.9	4.32
Avoiding food products that were imported by airplane	10.3	7.6	13.3	27.7	16.2	14.2	10.7	4.17
Consuming hybrid meat types	12.1	11.3	11.5	37.4	12.7	8.6	6.4	3.79
Taking protein from insects	20.5	11.7	8.4	37.8	9.7	7.0	4.9	3.45

Source: The authors; N = 513

#### 4.3 Factor analysis based on perceived EB from SFC practices

The above-presented 15 consumption patterns were factor-analysed via varimax rotation to produce a smaller and manageable set of variables. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Barlett's test of sphericity – BTS (Kaiser, 1974; Bartlett, 1954) were calculated to confirm that BTS > 0.6 (Tabachnick and Fidell, 1996), and p < 0.05 [Pallant, (2001), p.153]. Three factors were extracted following the analysis (KMO = 0.922; BTS = 3,808.019; df = 105; p = 0.000) accounting for 62.0% of total

variance (TV). Reliability was established through Cronbach  $\alpha$ , which in all cases was  $>0.7$ , and Cronbach  $\alpha$  for the total scale-question (i.e., all items) was  $\alpha = 0.915$ . This smaller set of variables (factors) that recorded PEB from the SFC patterns was used for further analyses. Each factor was allocated a name representing the items that were incorporated. Thus, the first factor is named ‘refraining consumption patterns’, which explains 27.7% of TV and comprises of eight items with factor loadings 0.513–0.727. These eight items are mainly consumption patterns to be avoided for an SFCB. This factor has Cronbach  $\alpha = 0.879$  and mean factor score (MFS) = 4.66 (StD = 1.29). The second factor was named ‘low carbon footprint food consumption’, which explains 22.9% of TV and consists of four items directly associated with consuming food products that produce a lower carbon footprint. These items have loadings of 0.602–0.773 on the factor and have Cronbach  $\alpha = 0.827$  and MFS = 4.78 (StD = 1.41). Lastly, the third factor is called ‘protein substitutes’, which explains 17.3% of TV and consists of three items that refer to different ways for substituting meat protein intake. The items have loadings on the factor ranging between 0.548–0.820, its Cronbach  $\alpha = 0.709$ , and MFS = 3.85 (StD = 1.34).

#### *4.4 Segmentation based on PEB from SFC practices and segment profiles*

The MFS of the abovementioned constructs was employed as new variables in segmentation analysis via K-means cluster analysis (Table 4). Three segments emerged through this procedure (RQ2/objective N.1). Chi-square tests between segments and participants’ socioeconomic and demographic characteristics were applied to identify any statistical differences between clusters. Results revealed statistical differences between segments and participants gender ( $\chi^2_2 = 24.218$ ;  $p = 0.000$ ); marital status ( $\chi^2_6 = 21.532$ ;  $p = 0.001$ ); education ( $\chi^2_4 = 12.903$ ;  $p = 0.012$ ); and income ( $\chi^2_6 = 14.180$ ;  $p = 0.028$ ). On the other hand, no statistical differences were found between segments and generational cohorts ( $\chi^2_2 = 0.014$ ;  $p = 0.993$ ), profession ( $\chi^2_4 = 3.702$ ;  $p = 0.448$ ), and area of residence ( $\chi^2_4 = 8.850$ ;  $p = 0.065$ ). Table 4 provides the K-means cluster analysis results, final cluster centres (FCC), and ANOVA statistics (F, sign). In addition, ANOVA statistics confirmed that the three clusters generated, differentiated on all variables in the analysis.

**Table 4** Segmentation of PEB of SFC practices

<i>Variables</i>	<i>CL1</i>	<i>CL2</i>	<i>CL3</i>	<i>F</i>	<i>Sig.</i>
	<i>N</i> = 215	<i>N</i> = 232	<i>N</i> = 66		
<i>FCC</i>					
Refraining from consumption patterns	4.45	5.53	2.32	451.983	0.000
Low carbon footprint food consumption	4.37	5.86	2.33	572.433	0.000
Protein substitutes	3.34	4.82	2.12	276.120	0.000

*Source:* The authors;  $N = 513$

**Table 5** Cluster characteristics (%)

Cluster characteristics	<i>Cl1</i>	<i>Cl2</i>	<i>Cl3</i>
	<i>N</i> = 215	<i>N</i> = 232	<i>N</i> = 66
Gender			
Male	57.7	34.5	47.0
Female	42.3	65.5	53.0
Cohort			
Generation Z	49.3	49.1	48.5
Generation Y	50.7	50.9	51.5
Marital status			
Single	78.6	68.1	69.7
Married	18.6	29.3	24.2
Divorced	2.8	2.2	1.5
Widowed	0.0	0.4	4.5
Education			
Secondary (gymnasium and lyceum)	2.3	0.0	3.0
Postsecondary (IEK, private college)	74.0	69.0	81.8
Graduate/postgraduate	23.7	31.0	15.2
Profession			
Salaried (employee public or private sector, on a pension, labourer)	29.8	34.5	28.8
Businessman/businesswoman	7.9	7.8	13.6
Dependent on others (student, housekeeper, unemployed)	62.3	57.8	57.6
Area of residence			
Urban	72.1	72.0	72.7
Semi-rural	17.2	13.4	6.1
Rural	10.7	14.7	21.2
Net monthly family income (€)			
<1,000.00	35.8	34.9	40.9
1,000.01–2,000.00	48.8	50.0	33.3
2,000.01–3,000.00	14.0	12.1	16.7
3,000.01+	1.4	3.0	9.1

Source: The authors

Furthermore, the chi-square tests between segments and participants' socioeconomic and demographic characteristics aided in observing each segment's profile, thus answering RQ3/objective N.2 (Table 5).

- Segment no. 1: 'Neutrals' – This segment exhibits a neutral perception regarding how these consumption patterns will benefit the environment. Their higher-rated dimension is 'refraining consumption patterns' (FCC = 4.45 < 4.50). This means that they neither agree nor disagree that refraining from certain food consumption patterns (e.g., avoiding products with excessive packaging or food products imported

by airplane, consuming ready-made pre-packed foods) is beneficial for the environment. For them, the lowest FCC dimension is ‘protein substitutes’, whereas they disagree to the idea that substituting protein consumption is beneficial to the environment. In this group, male subjects are overrepresented, while both cohorts (Gen Zers and Gen Yers) are equally represented in both clusters. This segment also incorporates, compared to the other groups, the highest percentage of singles, divorced, subjects residing in a semi-rural area, and individuals that are dependent on others. Most of the members of this group have postsecondary education and a net family monthly income up to €1,500.00. In contrast, they have the smallest percentage of people with a net income of 3,000.01+ compared to other segments.

- Segment no. 2: ‘Mindful and relatively optimistic’ – This segment has the highest FCC ( $4.51 < \text{FCC} < 6.00$ ) for all cases as compared to the other two segments. This segment is the mindful and comparatively optimistic segment since they believe that if they apply these food consumption patterns there will be an EB in the future. Even for the dimension substituting protein through insect consumption, it is considered as ‘tending to agree’ that it is a relatively large EB from adopting it. In this group, female subjects are highly overrepresented, while cohorts are equally represented in both clusters. Likewise, it incorporates the smallest percentage of singles and the highest percentage of married subjects than the other segments. It also has the lowest percentage of individuals with post-secondary education (69.0%), and no one with secondary education (0%). Moreover, this segment may be considered as highly educated since 31.0% of the sample has at least a bachelor’s degree, which is the highest percentage compared to the other two groups. This group has the highest percentage of salaried individuals and the lowest percentage of businessmen, while they reside in urban areas. Lastly, half of the group’s participants have a net family monthly income of €1,000.01–2,000.00, while they have the smallest percentage of people with a net income of 2,000.01+ compared to other segments.
- Segment no. 3: ‘Pessimists’ – This group does not believe that the SFC patterns presented if adopted will have any EB since all  $\text{FCC} < 2.5$ . Therefore, they consider that adopting these consumption patterns the EB obtained is negligible. This segment is slightly overrepresented by female subjects, has the smallest percentage of Gen Zers, divorced, graduates, and people residing in semi-rural areas compared to the other segments. This group has the highest percentage (compared to the other groups) of the following consumers: businessmen, people living in a rural area, and net family income  $<\!€1,000.00/\text{month}$ .

## 5 Discussion – conclusions

In discussing the study’s aim (and RQ1), and more precisely the investigation of Gen Zers and Gen Yers’ perceptions of the EBs from SFCB, no item had a mean score  $>5.10$ , thus, no consumption pattern was perceived by respondents as highly beneficial for the environment. Previous research has revealed that when a person has a positive perception towards an object (product or service), this leads to a positive attitude overall, which subsequently leads to a positive behavioural intention (Lee et al., 2016). Therefore, it is crucial to develop a strategy leading to favourable perceptions of SFCB. In essence, this finding reveals that the first issue that must be dealt with is changing people’s perceptions

regarding SFCB and EB. Additionally, the behaviour benefiting the environment, as perceived by both generational cohorts, is consuming fruits and vegetables that are produced in-season, implying that it is the behaviour that the cohorts are willing to adopt. This outcome cannot be directly compared with other academic studies. However, it partially correlates with the outcome of Kamenidou et al. (2019b), who unveiled that Gen Zers' willingness to adopt an SFCB is focused on consuming seasonal fruits and vegetables and purchasing regional food.

Meat consumption reduction is considered to be an eating pattern that significantly benefits the environment according to literature (González et al., 2020; Rust et al., 2020; Poore and Nemecek, 2018). Though, abstaining from meat by substituting it with other types of protein, has the lowest rating by respondents, as a beneficial for the environment consumption practice. This could be attributed to different motives, such as that they are not willing to abstain from meat. Thus, they consider it a lower benefit for the environment (cognitive dissonance theory). Another reason that could justify this behaviour is that they truly do not have the information that this tactic reduces environmental carbon footprint and is, therefore, beneficial for the environment.

As regards the three segments that arose from the analysis (RQ2/objective N.1) and the profile of each group (RQ3/objective N.2 of the study), segmentation analysis provided three groups of Gen Zers and Gen Yers: the 'neutrals', the 'mindful and relatively optimistic', and the 'pessimists'. From these three groups, the first and the second bear the potential to engage in an SFCB since they perceive benefits from such a practice. The first segment, namely the 'neutrals', is characterised by neither positive nor negative SFC attitudes. This group, which is formed largely by males, also shows a lower degree of agreement to meat avoidance. The above results are in line with previous research, that supports the symbolic associations of meat consumption and its connections to masculinity (Heinz and Lee, 1998; Ruby and Heine, 2011; Rothgerber, 2013; Sobal, 2005). Concerning the second segment, the 'mindful and relatively optimistic', in which females are overrepresented and has the largest percentage of married individuals, members tend to agree with protein substitute consumption. It is apparent that members of the group are more mindful about environmental sustainability since they have or will have in the future families with small children, and they are concerned about their family's future as well. Pertain to the third segment, the 'pessimists' express their disbelief that SFC patterns are beneficial to the environment. This group seems to not be willing in the future to adopt or adjust their consumption practises to more sustainable ones. According to Mäki Niemi and Vainio (2014), consumers have to believe that SFC behaviour has a positive EI in order to adapt to it. Therefore, marketing communication should be implemented to develop awareness of the beneficial outcomes for the environment when practicing an SFCB.

Regarding marketing communications (RQ4/objective N.2) that should target the three different segments, it should be carefully planned and implemented to influence behaviours towards SFC (Power, 2010; Kamenidou et al., 2020b). Food consumption is linked with cultural, social, and personal beliefs, and this should be taken into serious consideration when planning any relevant communication activity (Bogueva et al., 2017).

Members of the first group are not convinced about the EB of certain food consumption patterns, but because they are not negatively positioned, they may be targeted for behavioural change. Therefore, awareness about SFC's EB should first be established (Mäki Niemi and Vainio, 2014). Communication messages should present alternative food consumption patterns and highlight positive EI. The second segment has

a more positive attitude towards SFC. Members of the ‘mindful and relatively optimistic’ group seem to be more aware of the SFCB’s EB. Since they are in the largest percentage married and starting to create their own families, or have already young children, the communication messages should reinforce their attitudes and continue to emphasise the importance of SFCB’s EB, not only for themselves but also for their families, and especially for their family’s younger members. Finally, the third group demonstrates a pessimistic attitude towards the influence of SFCB on the environment. It is apparent that increased communication is needed to improve awareness of the positive impact of SFC activities in a way that is clearly explained and supported, and the societal good is highlighted. Education and information from an early age can be important when national campaigns are concerned in order to shape teenagers’ and future adults’ attitudes towards SFC and environmental protection (Kamenidou et al., 2020a, 2020b).

Integrated communication for both the Gen Zer and Gen Yer cohort members can include traditional and digital media. Nevertheless, the importance of targeted digital campaigns has to be pointed out since both generations are digitally savvy, but especially Gen Zers, the ‘digital natives’, who have been born in technology (Mohr and Mohr, 2017). Digital campaigns incorporating various social media platforms can be used to target the individuals of these two generational cohort groups. The use of educational and entertainment videos, influencers, and social media campaigns and promoting an SFC through the creation of support groups can increase awareness and positive attitudes towards sustainable behaviour.

## **6 Limitations and directions for future research**

This research is not without some limitations that function as points for future research. Firstly, it focuses on two generational cohorts (Gen Zers and Gen Yers). Future research could examine the behaviour and attitudes of more generational cohorts to obtain a more enhanced understanding of SFCB at a country level. A non-probability sampling procedure was employed, and a relatively small sample was collected ( $N = 513$ ). Future research could use larger samples and probability methods to increase the generalisability of the results. Additionally, future studies could incorporate more items regarding attitudes towards the EI of SFCB. Even though the ones that were used in the present study were also validated with qualitative research, additional items would provide a more in-depth understanding of the PEB of adapting SFC behaviour. Lastly, in-depth qualitative research would be very interesting focusing on the reasons why people do not perceive these suggested by previous research behaviour as beneficial for the sustainability of the environment.

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