

Meaning of food in eating patterns

Meaning of
food

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Abstract

Purpose – The purpose of this study is to conceptually and empirically verify the meaning of the food construct, while adapting and validating the Meaning of Food in Life Questionnaire proposed by Arbit *et al.* (2017) into Spanish and comparing groups with specific and non-specific eating patterns in relation to the meaning of food.

Design/methodology/approach – Confirmatory factor analysis and multivariate analysis involving groups with specific and non-specific eating patterns.

Findings – Results show that the adapted version of the scale retained the five food meaning factors, although four items from the original version had to be removed. Multivariate analyses of variance show that there are significant differences in the moral and sacred factors of food meaning when comparing people with specific and non-specific eating patterns. Significant differences in the moral, sacred and social factors were found when comparing between people with a specific diet, vegans/vegetarians and people who do not consume gluten/lactose or are on a diet.

Research limitations/implications – Differences in the meanings attributed to food can be observed among the different ways people eat. This could have implications on ethics, sustainability and well-being by considering the characteristics of the five factors of food meaning.

Originality/value – This study suggests that food meaning is a complex and rational process, where eating patterns play a key role in the attribution of meaning.

Keywords Meaning, Food, Pattern, Consume, Vegans

Paper type Research paper

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Introduction

The food we eat is one of the main concerns of contemporary society and is increasingly attracting the attention of public institutions, pushing for plans, programmes and strategies that attempt to resolve the main issues affecting food production. This increasing interest may be related to the impact that the products we eat have on our health, as well as concerns about the amount of environmental resources that are necessary to maintain the current state of consumption. Another possible reason is the evident contrast between societies which consume and waste excessive amounts of food as opposed to the hunger prevalent in other parts of the world.

According to a report by the [United Nations Environment Programme \(2016\)](#), the current food model is precisely the most unsustainable of all systems (more so than the transportation sector) and the one that causes the most damage to the planet. It is estimated that 60% of biodiversity loss and 24% of greenhouse gases are caused by our food production model ([UNEP, 2016](#)).

Eating is not only a biological process by which we are nourished, it is also a fundamental aspect of the meanings that people give to food and to their own lives: “Food choices are laden with meanings that figure importantly in humanity’s symbolic, social, ecological and economic worlds” ([Arbit *et al.*, 2017](#), p. 35).

According to [Rozin \(2005\)](#), the meaning of food is determined by learning and cultural transmission. Functionally, food acts as a social vehicle, facilitating social distinctions and linkages. In addition, food takes on a culturally symbolic and moral significance. This is the

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case regarding the consumption of certain products (e.g. the type of meat consumed) in some religions. Similarly, food is conceived as a means of aesthetic expression, to the extent that certain ways in which food is prepared can hardly be justified from a nutritional perspective.

More specifically, a significant number of studies have addressed the analysis of the significance of food in people with health problems, such as heart failure or different types of cancer (McQuestion *et al.*, 2011). For example, McQuestion *et al.* (2011) point out that in most of these studies, food is considered as a means of coping. In addition, "Food was socially symbolic and associated with positive feelings of family, community, and social interactions; or negatively perceived as loss or deprivation related to changes and decreased enjoyment of food" (p. 146).

Based on the Theory of Meanings of Health Behaviour (TMB) developed by Spruijt-Metz (1999) and its use with adolescent and adult populations, McClain *et al.* (2011) define the meanings of food as the association between affective meanings and eating-related behaviours. These affective meanings reflect one's need for emotional balance and psychological comfort. Previous research on TMB delineates meanings into three basic categories: personal, social and functional meanings (Spruijt-Metz, 1995, 1999). For instance, personal meanings represent intrapersonal relations such as dealing with bad moods or stress. Social meanings represent interpersonal relations such as peer group acceptance. Finally, functional meanings represent coping with physical or environmental problems.

Arbit (2017) in turn defines the meaning of food in life as "the degree to which people see their food as having significance and being connected to or embedded in a person's life-world" (p. 30). Such meanings establish a link between food choices and other non-food-related domains of life, such as social and cultural connections, to one's own body and health, to earth and nature, to moral principles and ethical standards of behaviour, as well as the sacred.

Therefore, food has a complex range of meanings, with no single definition being given to this elaborate construct. Some of these significances have been considered in a qualitative way, for example, in people suffering from cancer (McQuestion *et al.*, 2011) or in older people where the social value of food acquires great importance (Quandt *et al.*, 2001). It has also been considered quantitatively, using scales or instruments that attempt to shed light on this construct, such as Meaning of Food (MOF) developed by Ogden *et al.* (2011), Food Life Questionnaire (FLQ), developed by Rozin *et al.* (1999) or Meaning of Eating Index (MEI) designed by Walsh and Betz (1999), cited by McClain *et al.* (2011).

In order to explain the meaning of food, different psychosocial factors that influence our interpretations have been referred to. These factors have been considered in the development of instruments that attempt to measure the meaning of food. For example, attitudes towards food, whether positive or negative, have been related to various factors such as sensory qualities (taste, attractiveness), positive or negative affectivity (comfort, happiness, boredom, concern) or abstract cognitive qualities, such as the nutritional or health-related role of food (Aikman *et al.*, 2006).

The meaning people ascribe to food is also related to their motivations. The reasons that lead us to choose one particular food over another gives meaning to our diet and our lives. These motives can be as diverse as price, health, ethics, sensory appeal, familiarity, weight control, naturalness, comfort, mood and even religious reasons (Steptoe *et al.*, 1995). Given these motivations, certain segments of consumers can be identified, such as those who value the quality or prestige of a product above all else (Heide and Olsen, 2018). Weight control, for example, has been linked with a direct impact between eating behaviour and well-being. People who restrict their caloric intake have a more restricted approach to managing their health and appreciate less the role of food in their lives, providing them with less happiness than non-dieters (Luomala *et al.*, 2017).

The involvement between well-being and food reflects once again that eating is more than a biological process. In a study by Costa *et al.* (2019) it was found that a vegan or vegetarian

diet improved the social relations of those who followed it and that they were more likely to eat healthier foods. Veganism or vegetarianism is an example of how the meanings we give to food can be a central part of people's identity and lives (Rosenfeld and Burrow, 2018). This type of diet could be linked to more sustainable food choices, as livestock use leads to a large loss of biodiversity, impacts global environmental resources such as water and land and significantly contributes to climate change (Steinfeld *et al.*, 2009). Therefore, a diet free of animal products could be the most sustainable and, in addition, the most ethical alternative towards non-human animals.

There are cultural differences associated with the attribution of meaning to food. Rozin (2005) compared different eating behaviours between French and Americans. While the French spend more time eating (less quantity), they are more moderate (compared to American abundance), they focus on quality versus quantity and place greater emphasis on enjoying the moment, supporting a healthier lifestyle than Americans.

Similarly, it is possible to identify differences between countries and cultures, for example, in the meaning associated with certain eating behaviours such as eating out. In the case of Spain, eating out is mainly due to two reasons: work and leisure. However, unlike other countries, work and leisure share elements of sociability that are lost in other societies during work-related meals. In Spain, eating out includes organising not only work time but also time spent on family and social relations. Food thus provides the context for social life and is the unifying element between individuals (Diaz and García, 2017). In general, eating together is associated with more food and a greater enjoyment of the meal (Nakata and Kawai, 2017). However, the meaning attributed to food can also change over time. Paddock *et al.* (2017) conducted research in England and observed that in the late 20th century, eating out was an unusual practice and was reserved for special occasions, whereas nowadays, eating out is much more frequent and social and not so much reserved for "a special occasion".

In an attempt to address the psychosocial factors surrounding food, Arbit *et al.* (2017) developed a tool to measure the meaning attributed to food in relation to one's life. The scale is composed of 22 items and five food-oriented factors (moral, sacred, health, social and aesthetic). The moral factor, which includes values; the sacred factor, which looks at the connections between people's food choices and belief systems; the social factor, addressing social relations and culture; the aesthetic factor, developing creativity and artistic expression; and the health factor, addressing the importance of nourishing the body in a healthy way.

This instrument is of particular interest because it focusses mainly on the meanings we give to food and the role it plays in our lives, a role that carries greater significance and meaning for some people than for others.

The objectives of this study are to verify conceptually and empirically the construct of food meaning, adapting and validating the instrument proposed by Arbit *et al.* (2017) into Spanish and to compare groups with specific and non-specific eating patterns in relation to food meaning.

Method

Participants

The initial sample consisted of 321 participants between the ages of 18 and 74. Seven individuals who were identified as outliers were eliminated (Uriel and Aldás, 2005), obtaining a sample of 314 participants. Basic socio-demographic aspects such as gender, eating patterns and income level are described further (see Table.1)

Instrument

The MFLQ scale of meaning of food proposed by Arbit *et al.* (2017) was used. This scale is composed of 22 items and is structured into five factors (moral, sacred, health, social and

Table 1.
Socio-demographic
data of the sample

| Variables | <i>F</i> | % |
|--|----------|------|
| <i>Gender</i> | | |
| Male | 108 | 34.4 |
| Female | 206 | 65.6 |
| <i>Eating patterns</i> | | |
| Vegetarians/vegans | 32 | 10.2 |
| Gluten-free and/or lactose-free | 33 | 10.5 |
| Diabetic control | 9 | 2.9 |
| Caloric restriction | 39 | 12.4 |
| Patterns associated with religious practices | 2 | 0.6 |
| No specific dietary patterns reported | 199 | 63.4 |
| <i>Income level</i> | | |
| Less than 1000 | 80 | 25.5 |
| Between 1001 and 1500 | 75 | 23.9 |
| Between 1501 and 2000 | 72 | 22.9 |
| Between 2001 and 3000 | 87 | 27.7 |

aesthetic). Each item is answered on a Likert-type scale with seven points in which 1 represents “totally disagree” and 7 “totally agree”. The scale had to be translated into Spanish because no previous measuring instrument was found in Spanish covering the meaning of food construct. The final translation of the scale proposed by [Arbit *et al.* \(2017\)](#) can be found further ([Table 2](#)). In addition, a small scale was added with socio-demographic variables as well as their eating patterns.

Procedure and data analysis

The meaning of food scale proposed by [Arbit *et al.* \(2017\)](#) was first adapted to Spanish, taking into account the indications of [Muñiz *et al.* \(2013\)](#) when translating the scale. The items were translated from English to Spanish and again from Spanish to English by different translators in order to verify the level of consistency with the items in the original version.

Data collection took place on the island of Tenerife (Canary Islands, Spain) during the month of May 2018. The Qualtrics data collection tool was used to access a sample of university graduates in Social Work and Psychology from the University of La Laguna and to gather data from the general population on the streets.

A confirmatory factor analysis was then carried out using the maximum likelihood method, studying reliability, internal consistency and factors of the construct. The sample meets the requirements proposed by [Henson and Roberts \(2006\)](#) to perform a confirmatory factor analysis of 11 subjects on average per variable.

A variety of goodness-of-fit indices were used to evaluate model fit, as recommended by the literature on confirmatory analysis. The following indices are used: CFI, GFI, RMSEA and the Chi-square to df ratio (χ^2/df). A multivariate analysis of variance (MANOVA) between the five factors of the meaning of food with specific and non-specific eating patterns is then performed. All this was done using the data analysis software IBM SPSS Statistics 25 and SPSS Amos 24.

Results

The theoretical five-factor, 22-item model proposed by [Arbit *et al.* \(2017\)](#) was tested by confirmatory factor analysis, to determine if the model fits the sample data used. This initial

| Factors | Statements |
|------------|---|
| Moral | 1. I care about the impact of my food choices on the world |
| Moral | 1. Me importa el impacto que tienen mis elecciones alimentarias sobre el mundo |
| | 2. My food choices are an important way that I can affect the world |
| | 2. Mis elecciones alimentarias son una manera importante con las que puedo influir sobre el mundo |
| | 3. I eat in a way that expresses care for the world |
| | 3. Como de cierta manera para expresar preocupación por el mundo |
| | 4. When I eat food I think about where it came from |
| | 4. Cuando como, pienso de dónde provienen los alimentos |
| | 5. My food choices reflect my connection to nature |
| | 5. Mis elecciones alimentarias reflejan mi conexión con la naturaleza |
| Sacred | 6. From a spiritual perspective, some foods are better than others |
| Espiritual | 6. Desde una perspectiva espiritual, algunos alimentos son mejores que otros |
| | 7. Some foods are spiritually polluting |
| | 7. Algunos alimentos son espiritualmente contaminantes |
| | 8. What I eat is a reflection of my spiritual beliefs |
| | 8. Lo que yo como es un reflejo de mis creencias espirituales |
| | 9. My food choices are a way for me to connect with the sacred |
| | 9. Mis elecciones alimentarias son una manera de conectarme con lo sagrado |
| Social | 10. Food is closely tied to my relationships with others |
| Social | 10. Los alimentos están estrechamente vinculados a mis relaciones con los demás |
| | 11. When I eat I feel connected to the people I am eating with |
| | 11. Cuando como me siento conectado con la gente |
| | 12. Sharing food with others makes me feel closer to them |
| | 12. Compartir comida con otros me hace sentir más cercano/a a los demás |
| | 13. Making food for others is a main way I show care for them |
| | 13. Preparar comida para otras personas es la mejor forma de cuidar de ellas |
| | 14. Food is a way for me to connect with my cultural traditions |
| | 14. Los alimentos son para mí una manera de conectarme con mis tradiciones culturales |
| Aesthetics | 15. A good meal is like a work of art |
| Estético | 15. Un buen alimento es como una obra de arte |
| | 16. Preparing a good meal is like creating a work of art |
| | 16. Preparar una buena comida es como crear una obra de arte |
| | 17. Eating a good meal is an aesthetic experience like going to a good concert or reading a good novel |
| | 17. Disfrutar de una buena comida es una experiencia estética, como un buen concierto o leer una buena novela |
| | 18. I can appreciate the beauty of a dish even if I do not like it |
| | 18. Puedo apreciar la belleza de un plato de comida, incluso si no me gusta |
| Health | 19. I get satisfaction from knowing that the food I eat is good for my health |
| Salud | 19. Me satisface saber que los alimentos que como son buenos para mi salud |
| | 20. Eating foods that I know are good for my body brings me comfort |
| | 20. Comer alimentos que conozco que son buenos para mi cuerpo me reconforta |
| | 21. I eat in a way that expresses care for my body |
| | 21. Como de una manera que expresa el cuidado por mi cuerpo |
| | 22. I feel that nourishing my body is a meaningful activity |
| | 22. Siento que nutrir mi cuerpo es una actividad significativa |

Table 2.
Items and factors of MFLQ and Spanish translation

model presented low goodness-of-fit indices according to the criteria of [Hu and Bentler \(1999\)](#) and [Kline \(2005\)](#) with $CMIN/DF = 3.932$; $CFI = 0.837$; $GFI = 0.800$; and $RMSEA = 0.097$. Furthermore, errors were correlated and adequate indices could not be achieved. We then observed that the average variance extracted (AVE) usually used to measure convergent validity was low (<0.50) in the Moral, Social and Health factors ([Ab Hamid et al., 2018](#)). In this

sample, four items are below 0.50 for AVE, these are items 4 (AVE = 0.477), 13 (AVE = 0.422), 14 (AVE = 0.367) and 21 (AVE = 0.461).

In order to improve convergent validity (Correa and Miranda, 2012), the decision was made to eliminate these items (4, 13, 14 and 21) and to correlate the errors between items 1 and 2, 6 and 7, and 17 and 18. Thus, good convergent validity was achieved (AVE: Moral = 0.512; Sacred = 0.617; Social = 0.507; Aesthetic = 0.609; and Health = 0.623). Furthermore, AVE is inferior to composite reliability (CR), CR being for the factors: Moral = 0.808; Sacred = 0.863; Social = 0.742; Aesthetic = 0.861; and Health = 0.825. This aspect further ratifies the convergent validity of the construct (Rebello-Pinto *et al.*, 2014). Following these modifications, the goodness-of-fit indices proved to be excellent (CMIN/DF = 2.069; CFI = 0.959; GFI = 0.919 and RMSEA = 0.058).

Discriminant validity according to the criteria of Rebello-Pinto *et al.* (2014) is also good since AVE was in all cases higher than the maximum shared variance (MSV), MSV for the factors: Moral = 0.356; Sacred = 0.356; Social = 0.275; Aesthetic = 0.088; and Health = 0.103. Following is the result of the confirmatory factor analysis after eliminating the four items and with the correlation of errors (see Figure 1)

Using MANOVA, groups with specific and non-specific eating patterns were compared and differences were observed between them regarding the meaning of food. The group with specific eating patterns is composed of the following: people with a vegetarian/vegan diet, people with gluten and/or lactose intolerance and people who restrict caloric intake in their diet. We excluded people who controlled their diet due to diabetes and those who had specific diet due to religious practices as we did not obtain a sufficiently large sample for this purpose. People who had specific dietary patterns and those who had no specific dietary patterns differed significantly in moral and sacred meanings (see Table 3).

Table 4 shows the significant differences between groups with specific eating patterns in food meaning factors.

People with a vegan/vegetarian diet differ significantly from people who do not consume gluten and/or lactose and from those who restrict their diet on the moral, sacred and social factors. No significant differences were found on the aesthetic and health factors. Nor were any differences found between the gluten/lactose-free and caloric restriction groups.

Discussion

This study presents the adaptation and validation of the meaning of food in a life scale proposed by Arbit *et al.* (2017), an instrument that focusses on the range of meanings we give to food, establishing 22 items and five factors of meaning (moral, sacred, social, aesthetic and health). Such adaptation and validations are especially valuable in our context, because until now there was no measurement instrument in Spanish dealing with the construct of food meaning. With the availability of the translated version, it will be easier to perform transcultural research to further extend the reach of the theory. In addition, this study analyses the relation of these five factors of food meaning comparing people with specific and non-specific eating patterns.

Our results confirm the factor structure proposed by Arbit *et al.* (2017). The meanings attributed to moral values, spiritual beliefs, social relations, sensory and aesthetic experiences and nutrition are also present in Spain despite cultural differences. However, four items were eliminated because they did not contribute to improving the convergent validity of the construct. This may be due to the aforementioned cultural differences and peculiarities of the sample, since the role of food in Spain has much to do with moments of enjoyment as well as social and family relations, unlike other countries (Díaz and García, 2017).

On the other hand, differences in the attribution of meanings to food between people who stated having specific eating patterns and those who did not were analysed. Only two (moral

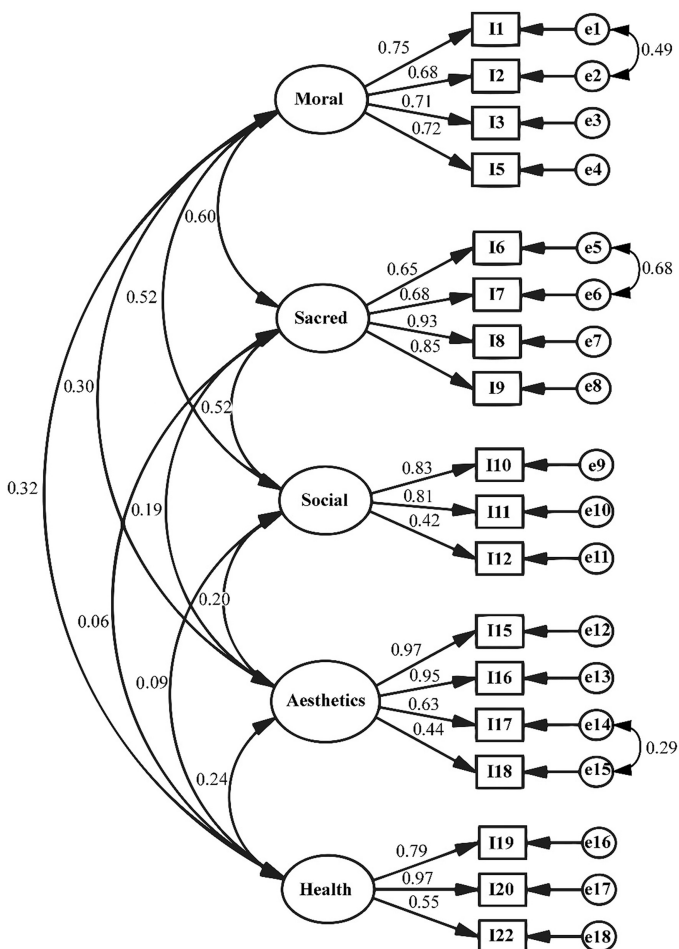


Figure 1. Results of confirmatory factor analysis without items 4, 13, 14 and 21 and correlating errors between items 1 and 2, 6 and 7, 17 and 18

and sacred) were found to have discriminating capacity. This suggests that purposes, values and beliefs play a very important role in dietary patterns.

Notably, when comparing the different types of specific eating patterns, people with a vegan or vegetarian diet differ from those who do not consume gluten and/or lactose and those who were dieting regarding the moral, sacred and social factors. Significant differences

| Factor | <i>F</i> | No specific eating patterns | With specific eating patterns | Difference in mean | <i>p</i> | Significant differences between people with specific and non-specific eating patterns |
|--------|----------|--|--|--------------------|----------|---|
| | | (<i>N</i> = 199) (<i>I</i>) <i>M</i> (SD) | (<i>N</i> = 104) (<i>J</i>) <i>M</i> (SD) | | | |
| Moral | 27.819 | 4.010 (0.103) | 4.907 (0.135) | -0.896* | 0.000 | |
| Sacred | 10.610 | 2.776 (0.116) | 3.400 (0.152) | -0.624* | 0.001 | |

were expected to be found on the health factor, but this was not the case. This may be due to people with gluten and/or lactose intolerance and people who restrict their caloric intake not always altering their diet due to health concerns, as is the case with people with diabetes. Terms such as lactose-free/gluten-free/sugar-free on product packaging have positive connotations that can be used to increase the consumption of sustainable foods or, conversely, to encourage the consumption of less healthy products. For example, products labelled as “x” free can be consciously used to increase the value of products that are considered falsely unhealthy or that appear to be less attractive to consumers (Hartmann *et al.*, 2017).

People with a vegan or vegetarian diet, as proposed by Fox and Ward (2008), are more concerned about ethical issues regarding non-human animals and present a range of commitments towards environmental concerns. Hoek *et al.* (2004) showed that people with a vegan/vegetarian diet have more positive attitudes towards organic products, events and social relations than conventional meat consumers. This shows that vegetarians/vegans and people with a “meat” diet have different motivations and identify socially with different dietary categories, such as those proposed in the study by Rosenfeld and Burrow (2018).

Such significant differences towards the group that does not consume gluten and/or lactose and the one that restricts its caloric intake suggest the voluntary nature of eating patterns. Generally, a person with a vegan/vegetarian diet chooses their food for various reasons (ethical, health, environmental. . .) and maintains attitudes and values different from those who maintain a more conventional diet. A vegan or vegetarian person makes their diet a way of life, presenting a different world view than those who eat in a more traditional way (Ruby, 2012). This may be the big difference between the groups analysed. For people who do not eat gluten or lactose and those who restrict their caloric intake, eating does not become a lifestyle that is a central part of their identity, as values do not play as much of a role as they do for people with a vegan/vegetarian diet.

On the other hand, this research attempts a contribution to a more consistent meaning of food in life, because the various types of meanings have been maintained in a different culture and environment, but with the proper nuances for a Spanish sample. Besides, the differences of attributed meaning according to dietary patterns had not been studied till now. Knowing those meaning in the case of people having a diet different from the majority can be important for future interventions; for instance, to identify changes attributed to food in patients with dietary problems (anorexia, bulimia, obesity). In that case, professionals in the field of psychology of health, consumption and nutrition could also use the meaning of food in life to change dietary behaviours, for instance, to generate possible consumption behaviours of healthier foods or to promote eating behaviours helping environmental sustainability, because current food production systems have a profound impact on the quality of the natural environment.

| Factor | F | Vegan/vegetarian (N = 32) | Gluten/lactose-free (N = 33) y caloric restriction (N = 39) | Difference in mean (I-J) | P |
|--------|--------|------------------------------|--|-----------------------------|-------|
| | | (I) M (SD) | (J) M (SD) | | |
| Moral | 20.846 | Vegan/vegetarian | Gluten/lactose-free 4.561 (0.226) | 1.682* | 0.000 |
| | | 6.242 (0.230) | Caloric restriction 4.385 (0.208) | 1.858* | 0.000 |
| Sacred | 4.019 | Vegan/vegetarian | Gluten/lactose-free 3.129 (0.290) | 1.059* | 0.012 |
| | | 4.118 (0.295) | Caloric restriction 3.237 (0.267) | 0.950* | 0.019 |
| Social | 2.450 | Vegan/vegetarian | Gluten/lactose-free 3.869 (0.247) | 0.746* | 0.037 |
| | | 4.615 (0.251) | | | |

Table 4.
Significant differences between people with a vegetarian/vegan, gluten/lactose-free and caloric restriction diet

Regarding limitations of this study, it should be noted that more people with specific eating patterns could have participated to obtain better results or could have been treated differently, for example, using other instruments. In particular, within this group, it would have been interesting to obtain a larger sample with eating patterns associated with religion, as it has been shown that religious beliefs can influence food choices and the purchase of more sustainable products (Minton *et al.*, 2019). The MFLQ questionnaire proposed by Arbit *et al.* (2017) measures the wide variety of meanings we give to food; however, it would be interesting for future work to address the relationship between the different factors related to the meaning of food and observable behaviours; to check whether these meanings have a direct impact on our food choices and thus on more sustainable food preferences.

Conclusions

The MOF scale proposed by Arbit *et al.* (2017) has been validated and adapted to Spanish, demonstrating its convergent validity. In turn, the difference between groups with specific and non-specific eating patterns shows that people give different meanings to food according to what they eat in their daily lives, demonstrating its discriminant validity. For future investigations, it would be convenient and of special importance to study how the meaning of food influences responsible food consumption and how this relationship affects well-being.

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