



In support of framing Food Identity towards pro-environmental food choices through empirical evidence

Mariarosaria Simeone¹ · Fabio Verneau¹

Accepted: 22 December 2023

© The Author(s), under exclusive licence to Springer Nature B.V. 2024

Abstract

The relation between food and identity has not been investigated extensively in environmental research so far. People value food products not only for the material and concrete benefits, but also for what they symbolize to themselves and to the other members of the community. The aim of this study is to detect the predictable significance of eating behavior with identity and to observe how the production process of traditional food can restrict consumer choices towards a more sustainable process. The whole objective is to achieve a deep knowledge regarding the impact of strong food identity on food choices and on the spreading of novel foods for sustainable food consumption among adults. In this research some of the major values describing food choices have been selected to test the relation with identity to investigate the consequences on sustainable attitudes through the analysis of 396 questionnaires in Italy. From this study, a great symbolic value for food emerges. It seems closely linked to traditions and history and also a certain consumers' reluctance to changing products when food production traditions can be undermined by sustainable practices. Changing strong tradition in food consumption requires the diffusion of a new awareness about quality dimensions such as generating new automatisms in food choices. Results from this manuscript could be of interest for policy-makers strategies to support initiatives which drive people to be conscious of the environmental effects of daily life and to nudge lifestyles towards a required track through socially conventional approaches.

Keywords Traditions · Food choices · Meat consumption · Sustainable behavior · Food values · Alternative proteins, local products, Italy

1 Introduction and literature review

Food consumption has a very high environmental effect. Policy-makers are concerned about finding socially appropriate approaches to encouraging citizens/consumers to assume more environmentally-friendly lifestyles. There is a widespread interest in current practices

✉ Mariarosaria Simeone
mariarosaria.simeone@unina.it

¹ Department of Political Science, University of Naples Federico II, Largo San Marcellino 10, 80138 Naples, Italy

to ‘nudge’ lifestyle on a path with the use of community approaches without confining consumer sovereignty.

Nowadays, policy-makers’ strategies try to boost policy initiatives which drive consumers to be interested in the global effects of local behavior.

The selection of food choices converges less on organic attributes as for example subjective preferences, and instead it reasonably reflects the ideals of the consumer. In deciding what to consume, people believe in food-choice and it’s connected with identity. Food choice is complex because consumers ask for diverse nutritive schemes drawn up by many spheres of impact on food-choice identity (Rosenfeld and Burrow 2018; Amato et al. 2022).

This confirms that food was expected to be associated with identity. Regarding this case as stated by previous research focused on determining whether identity is useful in gaining insights into personal attributes, a Japanese study showed how food identity sensibilities of people could be defined. They considered the part of the left-wing population that ascribes devotion to environmental concerns and the right-wing part of the population that has a larger regard for global distribution and ethically traditional values (Sasahara 2019). Assuming this interpretation, food identity might be relevant as a surrogate for subjective features and allow comprehension for potential purchasing patterns. The association between identity and food has become lately of interest in research focused on the understanding of personal choices, in particular to understand consumers attention to sustainable choices. People are determined to enhance a sense of identity that differentiates them from other people, and additionally their actions are considered closely interconnected to subjective identity. The understanding that consumers’ eating behavior has an important role in expressing identity perception is a segment of the studies in consumer attitude (Brillat-Savarin and Fisher 2009). Research offers an indication of the importance of consumers’ personal identity that determine actions compliant with the environment: people with a personality characterized by a strong attention to the environment are expected to prefer pro-environmental products and thus and in order to regard themselves in a positive light.

The main idea of this research is to investigate how food identity in consumer choices, defined by the relation with selected variables that come from the literature, can affect pro-environmental food choices among adults (Lusk and Briggeman 2009). We want to investigate the level to which food choices as identity ritual can be managed by sustainable and social behavior as mentioned in the article of Stapleton (2015): food and identity are strictly connected. A central argument in current literature is that food is crucial in revealing who we are to describe our personality to ourselves and to our community. Research conducted identifies the value of ethical consumption which is no longer a marginal issue but now mainstream (Haws et al. 2014).

In this research paper a selection of the main values explaining food choices have been carefully chosen to test the relation between food choices and identity and to define the effect on pro-environmental choices. To be specific, starting from the categories formed by Lusk and Briggeman (2009), all the variables associated with identity and with sustainable features have been selected and tested. These variables are Nutrition, Tradition, Convenience, Origin, Fairness, Naturalness and Environmental impact. Therefore, this research paper investigates how some attributes of food values defined above are incorporated into the perception of food identity. Specifically, variables taken from the classification above and used in our study, focus on the affection to local food products, to eating behavior in relation with to nutritional and environmental views, to preservation of the local community, the trade-off between traditional food products and more environmentally friendly products, the attention to specific values and to the entire chain of food products.

Regarding the variable nutrition as for example the type of proteins consumed, coming from plants or from animals, previous studies as such has observed a relation to consumer food identity. Research shows that in some situations the willingness and the capacity to transform consumers' diets depends on the group and ethnic community. A study observed that some students declared to have problems with a vegetarian diet because their typical eating habits were regularly based on meat products typical of Latin origin (Stapleton 2015). Diets which are based on meat products are the typical food model of advanced societies. Empirical research has revealed the presence of low numbers of individuals concerned about the impact of meat production on the ecosystem and that are keen to reduce meat consumption (Haws et al. 2014). These individuals are unaware that a reduced consumption of meat is much more environmentally friendly than a dietary regime including meat in great quantity. In all these cases of gastronomic tradition, cultural food choices and consumption models are important aspects to describe meat intake as well. Traditional food definition, according to a common view, is an association between a specific geographical location and food with a set of traditions, culinary typical practices, production processes and cooking heritage (Caputo et al. 2018). Consumers increasingly demand local food and foods with a traditional image and story, which are often habitually used because considered superior and respond to a necessity of their individual cultural identity (Simeone and Scarpato 2014).

Moreover, economic studies regarding food identity converge on cultural selections showing that cultural concepts of food identity depend on gender. Gender explains consumer behavior with regard to the frequency of meat consumption (Oleschuk et al. 2019).

Throughout history, large parts of the population in the world have prospered on diet plant-based and meatless diets, encouraged by the basis of religious beliefs, ethical reasons, or moral values and not for scientific reasons. The growing use of local foods and farmer's markets, the attention of the community to local agriculture have developed with the actions of social groups that are associated by their identity in order to find alternatives to modern and global agriculture (Cicia et al. 2012). In this context there are some academics that have begun to emphasize the scarcity of attention to these issues within these social groups' actions like the difficulty to having access to more sustainable and healthier food alternatives (Alkon and Agyeman 2011). Traditional food products are able to advertise the country of origin's gastronomic traditions and they are supposed to have superior health benefits compared with products coming from other countries. In turn, short chain products are assumed to be safe, a promise of quality and can support rural development, they help promote local communities and defend the landscape and the economy of rural areas from migration of young adults.

In turn, eating local food products has a positive impact for the community and also for the environment. However, in this research we focused on the effects of ascribing to food a strong implication of one's identity and on how a more sustainable model can be accepted by those who are characterized by a strong food identity.

Despite several research papers exploring the effects of food identity on consumer choices a systematic comprehension of consumer behaviour connected to a strong sense food identity towards sustainable food, is still lacking. Many researches have further concentrated on the possibility that consumers' behavior may or may not be affected by environmental aspects, especially in the situation where there are food choices associated with traditional food products.

Looking at the main studies conducted on the impact of food identity on pro-environmental food choices, the objective of this paper is to give answers to the following three research questions:

- H1. Is Eating an identity practice and can food identity be related to sustainable choices?
- H2. Can traditional diet and specific food process limit sustainable practices?
- H3. Can stronger food identity limit the development of novel foods?

First, the aim of this study is to detect the predictable significance of eating behavior with identity and the relations with sustainable food choices. Second, the research conducted aims to observe traditional diets and how the importance given to traditional production process can restrict consumer choices for products produced with more sustainable methods. Finally, increasing the studies of strong consumers' food identity can support policies for creating a more complex concept of food identity connected with more sustainable food development.

2 Material and methods

The aim is to investigate the issues that emerged, confirming consumer behaviour described in the theory and identify possible discrepancies with them. Our empirical study utilizes a survey with a sample of social network users with the age above 18 years old and living in Italy. The questionnaire was validated with adults from 18 to 80 years with different educational level. The pilot study was conducted on 30 individuals and it allowed to simplify some questions to be more suitable to be administered by social channels so as to avoid the problem related to the comprehension of questions.

The online questionnaire was administered to Italian contacts using social network. during the month of January and February 2023. The questionnaire was set up and administered through Google Forms platform. The interview was directed to the respondents by sending the generated link via the main social channels: Facebook, Instagram, Telegram and WhatsApp. The study conducted was exploratory and was directed to a non-probability sample of consumers resulting from a reasoned choice.

It did not include open-ended answers and it was proposed with multiple-choice questions. The questionnaire was structured into four parts. It starts with an informative introduction to the topic of the survey, the method used and the times it takes to complete the form. This first section is organized by the use of multiple-choice questions and frameworks that aim to recognize respondents based on interest and familiarity to the sustainability issue in general terms; relationship with the food, how they interpret the concept of food quality, whether or not they recognize the contribution of food to ethical and sustainable causes and to what extent, the importance of traditional products and the feeling in the consumption of food, the food values perceived and the connection with the consumption of sustainable food products is specifically investigated, the characteristics associated with them and the reasons that encourage and reduce their consumption. The second section presents a single multiple-choice grid that reports a list of 28 behaviors associated with critical and sustainable expenditure and consumption at home. For each behavior, it is necessary to indicate the frequency with which this is implemented by choosing from the options "not at all", "little", "enough", "a lot". We detected consumer attitudes and behaviors including to buy local, to the importance of sustainability in the production process, to buy ethical products, to the consumption of alternative proteins from plants, to buy from short chains.

The third section categorizes the simply sustainable behaviors already presented in the previous section, asking to indicate, for each one, the main reason for which the specific

practice is or would be implemented. Respondents can refer to their behavior to purposes such as: environmental protection, better and/or healthier nutrition, savings, animal protection, support for fair trade, support for the local economy. The fourth and final section collects sociodemographic features of respondents, that are summarized in Table 1. This data will be used to research specific consumption trends among different segments of the population. The data was set in binary form. The reason for this was that from the analysis of the frequencies all the modalities could not be considered as they are very small numerically. Results and analysis were carried out using IBM SPSS.

3 Empirical model

The research was directed on data gathered and then analyzed with the use of a probit model. This probit model was realized considering different factors that were based on the economic literature. A formal economic model with variables used to define food identity that could serve as an adequate basis for testable predictions is not available.

Despite several research papers exploring the role of consumers value and food identity and trying to draw from this typology a more sustainable consumers' model, a systematic comprehension of the characteristics of a deep food identity as one of the values in consumer decision-making is still lacking. In the absence of this model, we will examine food identity in the context of food values.

Some tensions between eating as an identity practice and eating as a sustainable practice appear, and this does not reveal the extent to which eating is influenced by larger cultural and social background (Stapleton 2015). Drawing from these theories a number of factors that are hypothesized to influence food identity are used as explanatory factors.

They were taken into consideration for defining "Food identity" and they were utilized as explanatory variables. The methodology applied will identify how the dependent variable food identity is explained by the considered explanatory variables. The results will give

Table 1 Socio-demographic characteristics of the sample

<i>Gender</i>	Sample
Female	63.38%
Male	35.35%
Non-binary	1.32%
<i>Age</i>	
18–24	17.42%
25–34	32.57%
35–44	9.84%
45–54	5.55%
55–64	26.77%
> 64	7.85%
<i>Education</i>	
Primary	2.53%
High School	28.28%
Degree I	18.43%
Degree II	41.67%
Post-graduate	9.09%

also information about how food identity is connected with some factors which are relevant to develop a sustainable food consumption pattern. The whole objective is to achieve a deep knowledge about the role of strong food identity in consumer choices and how it can impact the spreading of novel sustainable foods for sustainable food consumption among adults (Civero et al. 2021). In the following part there is an analysis of each factor analyzed in our model to determine strong consumer food identity and the variables importance in our study has been motivated.

The variable “Strong consumption of protein derived from plants” has been selected because the previous studies about identity dedicated to cultural habits explain consumers behavior in terms of meat consumption in their diet (Oleschuk et al. 2019). Meat consumption is considered the basis of female nutrition because proteins guarantee a slim body whereas male proteins allow to have a sculpted body. Consumers are not really conscious about the impact of the meat chain on the environment and therefore of the importance of decreasing meat intake as good behavior for the environment. In addition, in many studies, it appears to be a general unwillingness and resistance to decrease meat consumption as part of a goal for a sustainable diet because it belongs to family traditional dietary habits. This behavior has an effect on the environment. The importance of this variable that measures a pro-environmental choice allows us to understand the relation between food identity and the strong consumption of protein from plants.

The variable “local food is important for my community” measures the awareness of consumers regarding social and economic sustainability of his/her local community. This factor appears from this study and this is in line with the theory that showed the importance of local communities in supporting movement to promote regional products rather than industrialized food products (Alkon and Agyeman 2011). This could be an advantage because it brings a pro-environmental consumer food choice.

The variable “preparing many meals at home” is considered because it is part of the consumers behavior and values. Consumption at home is typical of a traditional lifestyle in which the preparation of food could be also the result of a ritual rich of meaning, the role of food in their lives is determined also by the sense of food identity and how they consider food intake. In previous studies there are examples of the several behaviors in which identities, throughout life course, are contested through food consumption and the way of eating and cooking (Valentine et al. 1999). Food is also used to give self-importance to oneself by conducting food practices but it is also a decision influenced by environment, nutritional needs, as well as social, traditional, and psychological aspects. Understanding the different social identities for consumers may help practitioners and researchers to understand food choices better (Reddy and van Dam 2020).

Strong consumption of local fruit and vegetables is a variable included because the choice of short chain consumption and of local products could belong also to consumer food values and traditions. How self-identity is associated with reasons in favor of short chain for supporting the environment, positive product perception, knowledge about origin, natural and freshness of products and also reasons against short chain like price and adverse product perception has been studied in previous research (Kumar et al. 2021). The choice of short chain has important effects also on the environment along with the local community. The variable age is important in defining the relation between consumers identity and food choices. Studies showed a particular attention to food values in the last generations, and in many cases food in young people lives articulated identities related to culture, family, class and ethics (Tatlow-Golden 2020).

The variable “Sustainable food overturn tradition and habits” is a variable considered because looking at the food consumption there is a trade-off between a sustainable practice

and a consolidated practice: consumers with a strong identity remain attached to tradition (Trudel 2019) and they are reluctant to consume new products. In this case we include this variable because the strong identity could be a limit to changing food consumption. In this case food identity is in contrast with a variable that detects the possibility to go into direction of more sustainable food choices.

Finally, we include the variable “quality food tells a story of production and values”. This variable according to the literature is strictly related to food identity and explain a particular meaning that food products could have in consumer minds. There is an increasing interest in food products which belongs to traditions. This represents an important segment of the European food market and product innovation are controversial in this traditional context where consumers give importance to the entire story of food products (Guiné et al. 2021). Consumers are accustomed from early childhood to prefer familiar foods (Tuorila and Hartmann 2020).

All these variables will explain how a strong food identity is determined by each factor in a positive or negative sign and will allow to make some considerations about how food identity factors can drive consumer choices towards more pro-environmental food products.

The application of this model permitted us to explain the effect of single factors on the probability of obtaining an affirmative response, assumed the binary and dependent variable. It was conducted in the cases that independent variables influence a dichotomous result.

The function proposed is: P (Yi)=F (Strong consumption of proteins derived from plants, Local food important for my community, Majority of meals prepared at home, Strong Consumption of local fruit and vegetables, Age 18–44, Sustainable foods overturn traditions and habits, Quality food tells a story of production and values).

The purpose arguments were the variables, that can define the probability P (Yi) that the reply to the demand “Food is strongly part of my identity” is affirmative. Detailed arguments of the probit model presenting the probability of choosing P may be stated as:

$$P_i = F(I_i) = F(\beta_1 + \beta_2 x_{i2} + \dots \beta_1 x_{ik}) = F(x_i/\beta) \tag{1}$$

$$F = P = \int \frac{1}{\sqrt{2\pi}} e^{-0.5z^2} dz \tag{2}$$

with z standard normal random variable.

4 Results

The total number of 396 interviews out of 550 contacted consumers that are responsible for food purchases came back and were examined for gender, education level, demographics (Table 1).

Variables utilized in the probit model were described, specified and defined for econometric analysis (Table 2) and lastly examined (Table 3). The likelihood test of hypothesis that all the coefficients are 0 on a chi-square value of 557,911 was completed. Outcome showed that this hypothesis might be rejected where the variable Y = “Food is strongly part of my identity”.

Table 2 Variable description

Variables	Description
Strong consumption of proteins derived from plants	1 = Yes, 0 = otherwise
Local food important for my community	1 = Yes, 0 = otherwise
Preparing many meals at home	1 = Yes, 0 = otherwise
Strong Consumption of local fruit and vegetables	1 = Yes, 0 = otherwise
Age 18–44	1 = Yes, 0 = otherwise
Sustainable foods overturn traditions and habits	1 = Yes, 0 = otherwise
Quality food tells a story of production and values	1 = Yes, 0 = otherwise

Table 3 Probit model results

Variables	Coefficient	SE	Significance
Strong consumption of proteins derived from plants	−0.251	0.087	0.004
Local food important for my community	0.237	0.067	<0.001
Preparing many meals at home	0.167	0.071	0.018
Strong Consumption of local fruit and vegetables	0.169	0.078	0.031
Age 18–44	0.19	0.068	0.005
Sustainable foods overturn traditions and habits	0.339	0.131	0.01
Quality food tells a story of production and values	0.204	0.068	0.003
Intercept	−3.394	0.075	0
Sample Size	396		
Chi square	557.911		
Degree of Freedom	388		

In this research the variable strong consumption of proteins derived from plants showed a negative relation with variable “Food identity” and this result is in line with literature. The consumption of animal proteins characterized the typical diet connected with culture and tradition habits of population from Latin countries (Stapleton 2015). To confirm the attention to the local community there is the variable “local food important for my community” which is positive related with the variable strong food identity and showed the importance of belonging to a territory. This result is confirmed by the positive relation between the intake of local products like vegetables and fruit that are positively related with the variables “strong consumer food identity” and this result is also confirmed by the previous researches (Stapleton 2015). The variable “sustainable food overturn tradition and habits” is very interesting and positively related with “Strong Consumer Food identity”. Sometimes the production in a sustainable way of both agricultural products and livestock products generates a change in the traditional production processes which are not well accepted where there is a deep belonging to the territory and to local traditions. People value food products not only for the material aspects and dietary benefits based on their tangible needs, but also for the symbolic and intangible aspects and for what products represent to their community and to themselves.

Finally, the variable “quality food tells a story of production and values” is positively related with consumers that declare to have a strong food identity. It is an interesting result

because it explains the involvement of consumers in the products history and background and associated values.

5 Discussion

The results of this empirical research show how food identity could go against the adoption of environmentally sustainable food behaviors and attitudes. Food identity seems to be present in the younger age group, but it seems clear from the analysis that it is in contrast with a greater consumption of vegetable proteins and also of sustainable foods perceived as something that overturns habits and tradition. It seems that in the perception of consumers the use of vegetable proteins could threaten food habits and traditions. As said also by Yazdanpanah and Forouzani (2015) the youngest consumers will govern the consumption into the next years and therefore they could act in changing the future of consumer behavior also because they could change the individual scheme of beliefs and food values. Most probably, young adults will keep their habits into the next decades. For these reasons to study their behavior and their routine could help policy makers in implementing strategies to stimulate the future generations to make sustainable food choices.

Furthermore, the value of the food is perceived to be the result of the foods' values and of its history. Therefore, products transmit all their stories in the mind of consumers who consider food an important part of their identity. In line with this theory, Burton (2004) drew attention to the sense of identity because it may be one of the critical aspects where consumers feel a threat to important traditional symbols and attributes of food products caused by new products on the market. A trade-off between identity and sustainability arises: the trade-off between a new sustainable practice and a consolidated practice used in food production. Consumers with a strong food identity remain anchored to traditions and this could lead to the loss of sustainable products or processes. In some cases, food identity can be negatively correlated to new processes and products even if they are more sustainable. Proceeding now to respond to the initial hypotheses on the base of findings it is possible to conclude that this study demonstrates that the first hypothesis can be confirmed but only in part.

Identity leads to the consumption of local products and therefore this reduces the environmental costs of products that come from afar or consumed out of season. Locally produced food products, seasonal, short chain products are very important and take advantage of environmental production strategies and methods. On the other hand, if environmental reasons in some cases would suggest changes towards less traditional food products consumption, consumers are not willing to give up traditions and history to consume more environmentally food. In that regard we can consider the consumers' perspective, looking at Guerrero et al. (2009) that give a description of traditional food products. Their definition of traditional products associates them to the food products consumed mainly in association with some specific events or celebrations. Usually, they are products consumed also by a traditional and older group with a precise recipe that responds to a gastronomic culture, well known and closely connected with the local community for its specific attributes connected to the product composition and ingredients.

This exhaustive definition is in line with our results. Clearly the other side of the coin reveals precisely the difficulty in getting new products changed in environmental way seldom accepted even if they are aimed at increasing sustainability and they come from an ecofriendly process. This explains the second hypothesis: Traditional diet and traditional

production process can limit the adoption of sustainable products and practices and this result was expressively stated by consumers in this study.

Innovation in the food sector is not always viewed as positive and consumers tend to doubt big changes in products that are increasingly at risk of not being successful in the market because different points of views arise. This is also the case of food neophobia explained by the feeling of consumer hesitancy to accept unfamiliar foods (Henriques et al. 2009). Because of the diffidence of persons to accept new ingredients, before struggling to create new products, producers need a deeper knowledge of the perception and consumption behavior of those consumers. In other words, a central role on the part of the buyer in the new development of food product is required.

The evaluation of trends for different users to agree to accept novel foods is a crucial earlier phase to the progress of effective product innovation. Personal identity and food consumption behavior are currently so narrowly related there are means to judge their own nature and personality (Hamilton 2010). Traditional foods are closely connected to the person philosophy and to the identity of residency of the area from which products come from. The strong sense of identity does not necessarily bring advantages for sustainability while it seems confirmed by the third hypothesis: the traditional diet can limit the use of novel foods. An example could be the difficulty in spreading cultured meat or the attempt to limit animal proteins by alternating them with alternative proteins, from insects or even the simple consumption of a vegetable hamburger, among consumers who have a strong food identity (Verneau et al. 2020; Simeone and Scarpato 2021).

To this end, the result of the study by Ortega et al. (2022) is in line with our study. In their research they offer an estimation of consumer preference and demand for novel foods produced in China and they evaluate the importance of food identity labels (Schwartz et al. 2020).

Finally, we can say that for some aspects cited above, like novel foods for example, food identity can be negatively correlated to sustainable food choices unless some actions from policy makers, also through communications are taken in order to create awareness of how, in the long run, unsustainable food products and unsustainable diets can have impacts also on the local community (Ortega et al. 2022).

6 Conclusions

From this research paper, there emerges a great symbolic value of food that seems closely linked to traditions and history and a certain consumers' reluctance to change food products when production traditions can be undermined by sustainable practices emerges. In the trade-off between sustainability and traditions, consumers with a strong food identity do not want to lose their traditions that give a strong connotation to the product with both intangible and material aspects (Schwartz et al. 2020).

To this extent results show how values can limit changing dietary habits. In line with other contributions, consumers are not conscious of the impact of meat production and moreover the consumption of animal proteins seems to belong to typical tradition of food consumption. Moreover, some attitudes detected in this model bring out an information problem. In particular, it seems there is a resistance made of strong beliefs that are difficult to change. Similar problems seem to arise for the concern regarding the impact of sustainable practices that, in the eyes of consumers, undermine traditions and quality of food products. Daily changes in people's behavior can have important positive environmental

impacts (Amato and Musella 2017). To this end, the role of policies in encouraging food choices with positive pro-environmental outcomes are crucial. In this scenario a new perception of quality must be disseminated through information campaigns. The diffusion of information about novel foods might help to create a new awareness able to cause new automatisms in the choice of foods. Food consumption is to a significant level an ordinary action and in many cases a rather unthoughtful process, therefore it is quite susceptible to modifications (Verneau et al. 2016).

This study, while giving interesting indications for a future research path, has some limitations. First of all, considering the mode frequencies included in the answers and sometimes the low variability between them, it is suggested for future studies to define the scales more precisely to avoid distortions in the answers. For this reason, some responses in this study were categorized ex-post.

Finally, the sample of the study, while being valid for an empirical study, could be improved in the methods of administration. We understand the limitation of using social media as we excluded from the analysis some groups of persons that are not familiar with social media. Therefore, our sample could present some bias regarding age, social segment, education of respondents and location.

Further research can detect these findings more deeply through the use of a qualitative techniques in order to analyze the more personal reasons of food choice on the basis of familiar traditions, roots and the perception of sustainable processes.

A theme such as identity lends itself well to qualitative analysis as sometimes there is no awareness of a preference or a motivation which is at the basis of food choices. In light of the small numbers of researches on food identity and the great interest in this topic, especially regarding the correlation to environmental issues, results of this research encourage us to continue this research path, hoping that other scholars too can enrich the findings with new insights into this research area. Food choice has a strong impact on the environment and it is a thoughtless process, which makes it prone to change, therefore results are key for policy makers.

Funding The authors declare that no funds, grants, or other support were received during the preparation of this manuscript.

Declarations

Competing interests The authors have no relevant financial or non-financial interests to disclose.

Declaration of interest statement The authors declare that they have no competing financial interests or personal relationships that could have inappropriately influence the work reported in this paper.

References

- Alkon, A.H., Agyeman, J. (eds.): *Cultivating Food Justice: Race, Class, and Sustainability*. MIT Press, Cambridge MA (2011)
- Amato, M., Musella, M.: Quantification of food waste within food service in the historic centre of Naples: A case study. *Qual-Access Success* **18** (2017)
- Amato, M., Marescotti, M.E., Demartini, E., Gaviglio, A.: Validation of the Dietarian Identity Questionnaire (DIQ): A case study in Italy. *Food Qual. Prefer.* **102**, 104690 (2022)
- Brillat-Savarin, J., Fisher, M.: *The Physiology of Taste: or Meditations on Transcendental Gastronomy*. Knopf Doubleday Publishing Group, New York (2009)
- Burton, R.J.: Reconceptualising the 'behavioural approach' in agricultural studies: A socio-psychological perspective. *J. Rural. Stud.* **20**(3), 359–371 (2004)

- Caputo, V., Sacchi, G., Lagoudakis, A.: Traditional food products and consumer choices: A review. In Cavicchi, A., Santini, T.F.S. (eds.) *Case Studies in the Traditional Food Sector*, 47–87 (2018)
- Cicia, G., Cembalo, L., Del Giudice, T., Verneau, F.: Agri-food system and the postmodern consumer: New challenges for research and for markets. *Economia Agro-Alimentare* **14**(1), 117–142 (2012)
- Civero, G., Rusciano, V., Scarpato, D., Simeone, M.: Food: Not only safety, but also sustainability. the emerging trend of new social consumers. *Sustainability* **13**(23), 12967 (2021)
- Guerrero, L., Guàrdia, M.D., Xicola, J., Verbeke, W., Vanhonacker, F., Zakowska-Biemans, S., et al.: Consumer-driven definition of traditional food products and innovation in traditional foods. A qualitative cross-cultural study. *Appetite* **52**(2), 345–354 (2009)
- Guiné, R.P., Florença, S.G., Barroca, M.J., Anjos, O.: The duality of innovation and food development versus purely traditional foods. *Trends Food Sci. Technol.* **109**, 16–24 (2021)
- Hamilton, C.: Consumerism, self-creation and prospects for a new ecological consciousness. *J. Clean. Prod.* **18**(6), 571–575 (2010)
- Haws, K.L., Winterich, K.P., Naylor, R.W.: Seeing the world through GREEN-tinted glasses: Green consumption values and responses to environmentally friendly products. *J. Consum. Psychol.* **24**(3), 336–354 (2014)
- Henriques, A.S., King, S.C., Meiselman, H.L.: Consumer segmentation based on food neophobia and its application to product development. *Food Qual. Prefer.* **20**(2), 83–91 (2009)
- Kumar, S., Talwar, S., Murphy, M., Kaur, P., Dhir, A.: A behavioural reasoning perspective on the consumption of local food. A study on REKO, a social media-based local food distribution system. *Food Qual. Prefer.* **93**, 104264 (2021)
- Lusk, J.L., Briggeman, B.C.: Food values. *Am. J. Agr. Econ.* **91**(1), 184–196 (2009)
- Oleschuk, M., Johnston, J., Baumann, S.: Maintaining meat: Cultural repertoires and the meat paradox in a diverse sociocultural context. *Sociol. Forum* (2019)
- Ortega, D.L., Sun, J., Lin, W.: Identity labels as an instrument to reduce meat demand and encourage consumption of plant based and cultured meat alternatives in China. *Food Policy* **111**, 102307 (2022)
- Reddy, G., van Dam, R.M.: Food, culture, and identity in multicultural societies: Insights from Singapore. *Appetite* **149**, 104633 (2020)
- Rosenfeld, D.L., Burrow, A.L.: Development and validation of the Dietarian Identity Questionnaire: Assessing self-perceptions of animal-product consumption. *Appetite* **127**, 182–194 (2018)
- Sasahara, K.: You are what you eat: A social media study of food identity. *J. Comput. Soc. Sci.* **2**(2), 103–117 (2019)
- Schwartz, D., Loewenstein, G., Agüero-Gaete, L.: Encouraging pro-environmental behaviour through green identity labelling. *Nat. Sustain.* **3**(9), 746–752 (2020)
- Simeone, M., Scarpato, D.: The low commercial value fish. How can we increase its consumption. *Agric. Econ. Rev.* **15**, 389–2016–23502, 43–59 (2014)
- Simeone, M., Scarpato, D.: Consumer perception and attitude toward insects for a sustainable diet. *Insects* **13**(1), 39 (2021)
- Stapleton, S.R.: Food, identity, and environmental education. *Can. J. Environ. Educ. (CJEE)* **20**, 12–24 (2015)
- Tatlow-Golden, M.: Food, eating and identities. In: Cooper, V., Holford, N. (eds.) *Exploring Childhood and Youth* (2020)
- Trudel, R.: Sustainable consumer behavior. *Consumer Psychol. Rev.* **2**(1), 85–96 (2019)
- Tuorila, H., Hartmann, C.: Consumer responses to novel and unfamiliar foods. *Curr. Opin. Food Sci.* **33**, 1–8 (2020)
- Valentine, G.: Eating In: Home Consumption and Identity. *Sociol. Rev.* **47**(3), 491–524 (1999). <https://doi.org/10.1111/1467-954X.00182>
- Verneau, F., La Barbera, F., Kolle, S., Amato, M., Del Giudice, T., Grunert, K.: The effect of communication and implicit associations on consuming insects: An experiment in Denmark and Italy. *Appetite* **106**, 30–36 (2016)
- Verneau, F., La Barbera, F., Amato, M., Riverso, R., Grunert, K.G.: Assessing the role of food related lifestyle in predicting intention towards edible insects. *Insects* **11**(10), 660 (2020)
- Yazdanpanah, M., Forouzani, M.: Application of the Theory of Planned Behaviour to predict Iranian students' intention to purchase organic food. *J. Clean. Prod.* **107**, 342–352 (2015)

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.