Food values: How they relate to legality

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Introduction: A value is an implicit principle that arises from judgments about everything around people, whereas a value system is a set of values ordered according to personal preferences. In this context, values can be seen as the adherence to an implicit or explicit set of rules, many of which are related to legality. In this study, legality is understood as the willingness of citizens to abide by the existing set of formal laws. A value system can guide consumers' food choices and provide information on their preferences. In this way, the citizens' food value system can influence the decisions of producers and policymakers.

Methods: The present study investigates the food value system of a sample of young adults using the Best-Worst Scale method.

Results: Values such as environmental impact rank high in their value system, indicating that adherence to a set of implicit rules and regulations concerning the environment are very important values when choosing food.

Discussion: Although adherence to a legal system that protects a public good (the environment) is considered an essential value, legality *per se* is not. This might suggest, on the one hand, a lack of awareness of legality issues in the Italian food system and, on the other hand, a strong interest in issues perceived as more urgent.

KEYWORDS

best-worst scaling, values, food values, legality, maximum-difference scaling

1. Introduction

The line of analysis emphasized the circumstance that "[…] All humans have a value system that contains a finite number of universally important value types, but differ in terms of the relative importance they place on each of these value types (people's value priorities) […]" (Rohan, 2000, p. 262). A *value* is an implicit principle that arises from judgments about everything surrounding people, allowing for the best possible life (Rohan, 2000). It can also be considered that importance is given to an implicit or explicit set of rules. According to Lusk and Briggeman (2009), there may be a set of intermediate values related to people's food choices that are more stable than mere preferences related to food attributes or specific products (Lusk and Briggeman, 2009). A set of values, through the intermediate value explained by the middle-end chain theoretical framework (Gutman, 1982), is capable of being "an enduring organization of beliefs about preferred modes of conduct or end states of existence along a continuum of relative importance" (Rokeach, 1973). Therefore, identifying the value system that guides consumers' food choices can provide information about their preferences (Connors et al., 2001), turning them into a competitive advantage for entrepreneurs and a valuable guide for policymakers (Conner, 2004; Lindgreen and Wynstra, 2005).

Therefore, when thinking about food, it is natural to ask whether a set of values can guide food choices and, if so, in which direction. Indeed, a value system may guide people's choices toward elements that can positively affect the community. One example is the steady increase in the number of people moving toward a diet low in meat and meat products for

environmental reasons.[1] In addition, socially sensitive consumers who are turning to fair trade markets are growing (Konuk, 2019). Especially among young adults, there is a stronger push toward consuming environmentally and socially sustainable products (see text footnote 1) (Ma et al., 2012; Castellini and Samoggia, 2018). All this has meant that in recent years there has been a proliferation of private and public certifications and labels that talk about sustainability and corporate choices aimed at reducing environmental impact.

For this reason, the current paper aims to investigate the values underlying the purchasing choices of a sample of young adults and how these relate to the value of legality, understood as the willingness to abide by a formal system of laws. More specifically, we would like to investigate whether this group of consumers considers compliance with a legal system in their food purchasing choices. Furthermore, it will be analyzed how this relates to other food values. Indeed, one can also see values as an implicit or explicit set of rules, in some ways linked to legality. Legality can be seen as a baseline for other values, representing the framework in which food producers should organize their activity. Other studies considered legality to measure consumers' concern over food (Burnier et al., 2020) but not as a determinant of food purchase. Although there is a legal part in many other values (such as rules and norms for food safety or the requirements for certification), we decided to consider legality as a separate one to understand its weight in young adults' food value systems. The novelty of the current study lies in the decision to consider legality as a value on its own, connected with a value system, and a driver of individual behavior.

In order to do it, a survey was conducted among young university students, using the Best-Worst Scaling to order the values proposed in relation to their importance (Lusk and Briggeman, 2009) and thus identifying a value system. From the results, a focus on the environment emerges, whereas legality as a value and Fairness takes a back seat.

The paper is organized as follows: in the second section, the theoretical framework will be presented, where issues concerning values and the food value system, as well as the concept of legality, will be explored. The third section will present the material and methods, methodology and experimental design. The fourth section will present survey results, and the fifth will discuss them. Finally, the conclusions, summarizing the work done, will also provide an overview of the policy and managerial implications of the study.

2. Theoretical framework

2.1. Values and value system

Values can be seen as human needs and norms guiding human activities. Based on personal priorities, they can be ordered in a value system. It is an integrated structure which determines the relationships between priorities about each value (Rohan, 2000). They are thus organized according to personal inclinations, determined by preferences, experience, environment and social dimension (Rokeach, 1973). The theory states that values transcend particular actions and situations (distinct from norms) and are

linked to desirable goals (Schwartz and Bilsky, 1987; Schwartz, 1992). Several authors have written about human values and their role in everyday life (Rokeach, 1973; Schwartz, 1992, 1996, 2012).

Regarding the food sector, several scholars have paid attention to values, i.e., food value (Lusk and Briggeman, 2009; Cembalo et al., 2015). *Food value* is a multifaceted concept encompassing different dimensions of food choice (Dagevos and van Ophem, 2013). The value of food is not only the "value of the product" as a physical good but also the value of "feeling good" by consuming the product because of its ethical and emotional implications (Barlow and Maul, 2000; Canetti et al., 2002). Food choices thus imply the involvement of a "personal system" consisting of value negotiations and behavioral strategies. Consumer food value systems can have profound implications, both personally and globally. For example, consumers' power of choice can affect the behavior of producers, determining the spread of specific practices or the cessation of others (Vitell and Muncy, 1992; Zollo et al., 2018). Thus, identifying the value system that guides consumers' food choices is crucial because it can give information on their preferences and valuable indications to policymakers (Conner, 2004; Lindgreen and Wynstra, 2005).

2.2. Food values

There is a link between the consumer's food value system and purchasing behavior. It can indicate the personal instances that guide food choice. In addition, it can allow consumers to be divided into different segments. In the current study, the consumer value system concerns the importance attached to a legally constrained system, be it the market, work ethic, safety or environmental regulations. The level of importance attached to a given value can also be seen as that attached to compliance with a set of implicit or explicit rules. Among the food values studied by Lusk and Briggeman, we chose Naturalness, Price, Safety, Nutrition, Fairness, Environmental Impact, and added Legality (we discuss this choice in the next paragraph). *Naturalness* value can be defined as the extent to which food is produced with the lowest possible level of technological sophistication (Lusk and Briggeman, 2009). It can be traced back to emotional instances (Lockie et al., 2004; Kooijmans and Flores-Palacios, 2014) that may influence food choice behavior (Hauser et al., 2011). Indeed, those interested in Naturalness often express concerns about quality, the (local) origin of products, and the impact of production methods on their health (Innes and Cranfield, 2009; Nielsen et al., 2009; Sidali et al., 2016). From a managerial perspective, strategies to promote sustainability should recognize the component of Naturalness (Sidali et al., 2016), especially in introducing new food technologies (Nielsen et al., 2009).

Price is a product-related attribute linked to personal value. The importance of price may vary with consumer culture (Bazzani et al., 2018) and the segment analyzed (Innes and Cranfield, 2009). Indeed, consumers primarily interested in price may belong to a segment defined as "self-centered." However, there may also be environmental or social conditions that determine this interest.

Safety can be defined as the extent to which the consumption of food will not cause illness (Lusk and Briggeman, 2009). It has come to play a crucial role in purchasing decisions (Loader

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and Hobbs, 1999; Henson and Northen, 2000) mainly due to the increasing focus on quality and Safety that pervades the food supply chain (Ménard and Klein, 2004; Hobbs et al., 2005; Loureiro and Umberger, 2007). *Nutrition* is a value related to the nutritional value of food (Lusk and Briggeman, 2009). Regarding nutritional value, there is a general interest in nutrition labeling, although it differs between products, consumer segments and countries (Grunert and Wills, 2007; Cavaliere et al., 2015; Marchini et al., 2021). When choosing food, health and nutrition beliefs are involved in a negotiation between values (Furst et al., 1996). This negotiation is mediated by nutritional knowledge, eating behavior, consumption habits and lifestyle (Wardle et al., 2000).

Fairness is linked to the ethical aspects of food (Lusk and Briggeman, 2009; Bazzani et al., 2018). Consumers are increasingly aware of the impact of current consumption patterns on the stock of social, human and economic capital. Often those who attach importance to this value are those belonging to a more "altruistic" segment of consumption and interested in ethical and human needs.

Environmental impact regards the effect of food production on the environment (Lusk and Briggeman, 2009). Just as with Fairness, pro-environmental preferences and behavior could be interpreted as a form of altruism that aims to improve the distribution of public goods (Stern, 2000; Young et al., 2010). However, awareness of environmental issues is only sometimes linked to reduced or sustainable consumption (Macdiarmid et al., 2016). Indeed, many manufacturers have exploited the growing environmental concern (Banterle and Cavaliere, 2014), making considerable efforts to communicate environmental sustainability characteristics through (more or less accurate) claims on packaging or labels (Cavaliere et al., 2014; Marchini and Riganelli, 2015). This information can be provided in good faith but can also constitute a form of so-called "greenwashing." However, environmental attributes can also become essential policy tools to ensure consumer safety and protection (Caswell and Mojduszka, 1996; Teisl and Roe, 1998; Nilsson et al., 2004).

2.3. A role for legality

Regarding *Legality*, scholars are increasingly paying attention to the food sector, i.e., to the legal state of food production and consumption. It concerns the implications of food law on production and consumption and the dimension of individual behavior linked to values. How producers and consumers comply with the law is a relevant aspect of food practices (Lei and Zhou, 2015) as well as of the role of civic organization (Counihan and Siniscalchi, 2013; Siniscalchi, 2013) or of emerging innovative practices (Hayden, 2014). Legality concerns Agri-food systems under different perspectives related to both the production and the consumption side. More precisely, legality in the food system can be intended both as compliance with regulations and laws and the absence of criminality (primarily organized crime) from the production system. Regarding the first aspect, a positive attitude toward legality can be recognized at the roots of compliance with the laws concerning food safety and Geographical Indications of production and supply. Under this view, adopting food standards raises the systems of practices

that substantiate that attitude (Fritz et al., 2008; Martino, 2010). Likewise, compliance with agricultural labor market regulation is a fundamental divide among groups of farmers [Osservatorio Placido Rizzotto (a cura di), 2022]. As for a "negative" attitude toward legality, e.g., the adoption of illegal practices, much evidence is provided in the literature which underlines the existence of various behaviors (Manning et al., 2016). Burnier et al. (2020) considered legality an essential aspect of constructing a scale to measure consumers' concerns over the meat production process. In particular, they considered the indications provided to implement the Rainforest Alliance Sustainable Agriculture Standard (Rainforest Alliance, 2022). They involve several aspects of legality regarding water use, workers' conditions, ownership, use of chemicals, and waste management, making legality a crucial element for other food values (such as environmental impact, safety and equity).

On the other hand, legality in the food sector can also be related to the absence of organized crime from the supply chain. In Italy, organized crime ("mafia") is widely spread in the agri-food sector (Santos, 2004; Rizzuti, 2022). It is responsible for food fraud (Lord et al., 2017), labor exploitation, illegal investments and procurements in distribution and logistics (Rizzuti, 2022).

The current study assumes that legality is connected with value systems as a driving force of individual behavior. From a theoretical point of view, this hypothesis is justified because scholars have identified an expressive function of law as the driving force of behavior. Law and Economics scholars have primarily emphasized the imperative role of the law (Posner, 1983) and have progressively recognized the relationship between legal rules and social norms (Ellickson, 1998; Stout, 2006; Feldman, 2009). Sustein (1996) states, "Many laws have an expressive function. They make a statement about how much, and how, a good or bad should be valued. They are an effort to constitute and affect social meanings, norms, and roles. Most simply, they are designed to change existing norms and to influence behavior in that fashion." Namely, the expressive function of the law is mainly explained by its ability to (Cooter, 2000; Pearce, 2013):

1. Create focal points and facilitate coordination;
2. State morality;
3. Impose a social cost in order to prompt agents to implement the norms;
4. Reflect and existing consensus, especially in democratic societies.

In other words, they constitute and influence social meanings, norms and roles. Consequently, legality maintains a role in the constitution of social relations (Deakin et al., 2017). Above all, it is being studied to investigate its influence in shaping and channeling the behavior of economic agents. Several definitions of legality are adopted, which variously reflect the emphasis on law enforcement's role in shaping economic agents' activities. For the current study, *Legality* is operationally defined as the willingness of citizens to comply with the existing set of formal laws. This definition has nothing rigorous concerning the relationship between the rule of law and the principle of legality (Bobbio, 1959). However, this definition is closest to the common sense of legality and the widespread understanding of legality as the engine of the behavior of economic agents.

Legality is linked to values in various ways. For example, concern for a fair price implies that consumers and the food supplier rely on the market's legal functioning of the pricing process. Fairness also implies an interest in legality as an ethical dimension of food practices. Similarly, safety and environmental concerns have to do with the legal interest of consumers.

While most of the literature on legality and its influence focuses on how legality drives behavior, our study takes a different perspective. This study considers, in particular, the consumers' assessment of the legality pursued in the food supply system. More precisely, we investigate whether and how food consumers consider compliance with the legal system in producing and supplying food.

3. Material and methods

3.1. Method

We used best-worst scaling (BWS) to study the relevance of food values in consumer choices. The value system was developed by adapting that of Lusk and Briggeman (2009), who attempted to identify consumers' food value systems using the BWS. Legality was added to their set of values to investigate the relationship between this value, which is directly dependent on consumers' willingness to comply with a legal system, and other values, which may be more related to ethical and moral judgements as moral behavior. Legality is linked to the other values but involves a different evaluation process. People often do not have a thorough knowledge of the law; therefore, legal judgements are made under uncertainty (Tversky and Kahneman, 1974). Furthermore, there may be discrepancies between ethical judgements and the law (Pearce, 2013), although illegal conduct is often considered unethical. As previously mentioned, food values related to ethical aspects (such as Fairness, Safety and the environment) and legal values may be correlated (Vitell and Muncy, 1992; Vitell, 2003).

The best-worst (BW) choice experiment is a variant of the widely adopted binary choice experiment approach to measuring preferences based on Random Utility Theory (Thurstone, 1927; McFadden, 1973; Louviere et al., 2015). There are three types of BWS: (1) the object case (Case 1), (2) the profiling case (Case 2), and (3) the multi-profile case (Case 3) (Louviere et al., 2015). The object case typically allows obtaining measures for each person (respondent) on a differential scale with known properties (Marley and Louviere, 2005). Several sets are shown, each including options based on the experimental design. This case is suitable for our study because we are interested in measuring a set of objects (values). In addition, a model can be interpreted as a constrained sequence of repeated choices (i.e., best/worst choices). Finally, it is suitable for a web-based questionnaire because participants must choose in a particular order (Louviere et al., 2015).

3.2. Research design

The idea behind BWS is that people can choose the two items in three or more choices representing their extreme (lowest and highest) preferences. The respondents are shown a set of items and asked to indicate the best (or most important) and the worst (or

least important). The statistical model under this method assumes that the relative choice probability of a given pair is proportional to the distance between the attribute levels on the latent utility-scale (Flynn et al., 2007). Respondents make several repeated choices, and each time they make a difference between the value that maximizes the utility and the value that minimizes it.

The widely used rating scales ensure that all individuals use the same numerical scale, but in practice, it is possible to find various idiosyncrasies in response style (Auger et al., 2007). These idiosyncrasies can arise from individuals' differences using rating scales (Lee et al., 2008). BWS is a way to avoid and overcome these limitations (Louviere et al., 2013) because it allows us to compare the relative impact of attributes. Therefore, BWS has several advantages compared to other measurement methods (such as the Likert scale). In fact, with these methods, the respondents are free to make trade-offs between the relative importance of the issues (Lusk and Briggeman, 2009). Indeed, all the issues become "important" for the respondents. To demonstrate it, Lee et al. (2007) have applied the best-worst approach to measuring people's life values. Their results suggested that this method better measures people's values than some frequently used rating approaches.

Table 1 presents the seven food values of interest. We built the choice set using a Balanced Incomplete Block Design (BIBD) to assign each of the J objects (values) to various subsets of a fixed size k (in our case, three) (Colbourn and Dinitz, 2007). Each subset is called a "block" and can be seen as a "comparison set," and the objects in a block are what is presented to the sample (Louviere et al., 2015). A block or comparison set is a "choice set." Our experimental design was obtained using the R software to assign each of the seven values to the choice sets. The resulting design consisted of seven choice sets of three values per set (Table 2). In our BIBD, there are seven objects (j), repeated three times (r), in seven blocks (b, i.e., the total number of subsets, or choice sets) of three observations (k, the size of the subset). The fifth parameter, lambda (λ), records the number of blocks where every pair of treatments occurs in the design (Louviere et al., 2015). In a nutshell, a BIBD table has a b subset of k items. Each item occurs r times and co-occurs with each other item l times. Thus, each respondent answers to seven choice sets containing three values. Each of the seven values appeared three times, and the respondents were asked to indicate the most essential and negligible values for each set. Figure 1 shows an example of one choice set. Respondents were also asked about socio-demographic characteristics: age (ranked from under 20 to over 28), studies, country of origin, and Italian area from which they came (Center, North-East, North-West, South, and Islands). Respondents were also asked about their purchase habits: where food is purchased (such as discount, market, or organized distribution) and the purchase frequency.

3.3. Econometric analysis

We used a conditional logistic regression for the quantitative analysis, performed using Stata 13 (Train, 2009). The choice is treated as a function of the alternatives' characteristics rather than the individuals' characteristics. Thus, we used a conditional logit model (Hoffman and Duncan, 1988). Conditional Logit is used

TABLE 1 Food values and descriptions.

Value	Description	References
Naturalness	Limits within which food is produced without the use of additives, chemicals, or modern technology (e.g., low-processed foods)	Small et al., 2005; Lusk and Briggeman, 2009;
Price	The price paid for food	Lusk and Briggeman, 2009; Andreyeva et al., 2010
Safety	Extent to which consumption of food is safe and it will not cause illness (e.g., reliability of producers, security of origin)	Lusk and Briggeman, 2009; Dowd and Burke, 2013
Nutrition	Nutritional characteristics of food: amount and type of fat, proteins, vitamins, etc.	Loureiro et al., 2006; Lusk and Briggeman, 2009
Fairness	Limits within which all participants in the value chain receive fair benefits for their work or business (e.g., working conditions, dignified wages)	Lusk and Briggeman, 2009; Dowd and Burke, 2013; O'Connor et al., 2017
Environmental impact	Effect of food production on the environment (environmental sustainability of the process)	Lusk and Briggeman, 2009; Dowd and Burke, 2013; Salazar-Ordóñez et al., 2018
Legality	The respect of the laws during the production and distribution (e.g., supply chain not controlled by organized crime, animal conditions according to the laws)	Croall, 2013; Burnier et al., 2020

Authors' elaboration based on Lusk and Briggeman (2009).

TABLE 2 Balanced incomplete block design.

	Options		
Set	1	2	3
1	Naturalness	Price	Equity
2	Safety	Nutrition	Equity
3	Naturalness	Safety	Environmental impact
4	Price	Safety	Legality
5	Price	Nutrition	Environmental impact
6	Naturalness	Nutrition	Legality
7	Equity	Environmental impact	Legality

Authors' elaboration.

| Most Important		Least important
☐	**Naturalness** (limits within which food is produced without recourse to modern technology)	☐
☐	**Price**	☐
☐	**Fairness** (limits within which all participants in the value chain receive fair benefits for their activity, e.g. a fair price)	☐

FIGURE 1
Example of a choice set.

to analyze an individual's choice between a set of alternatives J (Hoffman and Duncan, 1988), focusing on the set of alternatives for each individual. We made two estimates: one for the best choice and one for the worst choice, to establish the probability that each value is chosen as the most important and the least important (Louviere et al., 2015).

Considering N individuals and a set of J values, a person could choose J(J – 1) possible best-worst combinations across the seven choice sets. The pair of items chosen represents a choice out of all the J(J – 1) pairs that maximize the difference in importance. Let β_j represent the location of value j on the scale of importance (β is a vector of the value). The conditional logit McFadden-type choice model assumes that there is no correlation in unobserved attributes over the alternatives, and the utility (in our case, importance), for each alternative is only related to the attributes of that alternative (McFadden, 1973; Train, 2009). Each individual is denoted by i, and let the true or latent unobserved level of importance be given by:

$$I_{ij} = Z_j + \varepsilon_{ij} = \beta X_j + \varepsilon_{ij} \qquad (1)$$

Where Z_j is the representative importance from alternative j, given that not all factors which affect the respondents are observable. The term X_j stands for observable factors of alternative j. The term ε_{ij} is a random error term. Thus, the probability that the
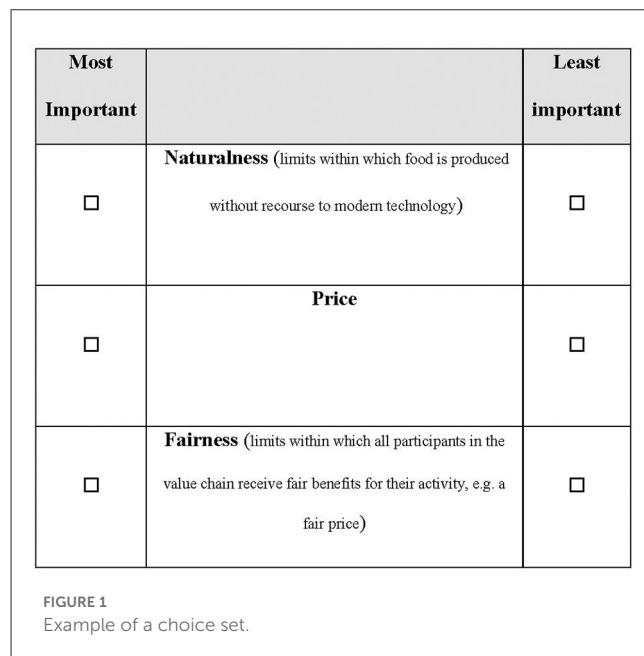
respondents choose item j as the best (or worst) item, in choice set J is:

$$P_j = \frac{e^{\beta X_j}}{\sum_{j=1}^{J} e^{\beta X_j}} \qquad (2)$$

Given the potential confusion with the scale, we calculated the "preference share" (Lusk and Briggeman, 2009) for each value ($Share_j$), i.e., the expected probability that each food value is chosen as more (or less) important:

$$Share_j = \frac{e^{\beta_j}}{\sum_{j=1}^{J} e^{\beta_j}} \qquad (3)$$

These shares of preference must sum to one across the seven values. In fact, the Equation (3) reports the importance of the value j on a ratio scale, so the probability that a value is picked as more important than another.

3.4. Data

A convenience sample of young adults was interviewed for the analysis. A questionnaire was administered to them using Google Forms in Italian (the mother tongue of most of the respondents) in April 2018. The final sample consisted of 333 students. Table 3 summarizes the characteristics of the sample. The age of the respondents was mainly between 21 and 24 (56.2%), while 23.4% are aged 20 or under, 15% around 25-28 and only 5.4% over 28. Most currently only have a high school diploma (68.5%), 29.7% have a Bachelor's degree, and only 1.8% have a Master's degree. The geographical area of origin of these students is Central Italy (80.2%), followed by 12% from Southern Italy, and the rest from the North-East (2.7%), North-West (1.8%) and Islands (3.3%). Most of the interviewees usually go to the supermarket to buy (71.5%), 9% of the interviewees go to the neighborhood shop, 6.6% of the interviewees buy at the hypermarket (GDO), 6 % discount, 5.1% at the farmers' market and only 0.9% buy from Fairtrade buying groups or the local market. 44.1% of respondents shop 2/3 times a week or once a week (38.4%), 9.3% of respondents every day and 8.1% are not responsible for the purchase.

4. Results

4.1. Descriptive results

To perform the first descriptive analysis, we used a ranking based on the ratio score. To compare the importance of the attribute, we derive the ratio scores by taking the square root after dividing the best total score (B) by the worst total score (W) for each respondent (Table 4). The square root of B/W for all attributes [SQRT (B/W)] has been scaled by such a factor that the most important attribute with the highest SQRT (B/W) becomes 100, in our case Safety (Lusk and Briggeman, 2009). The result is interpreted as X per cent as it is likely to be chosen as the most important value. Table 4 shows that Safety, on average and according to Lusk and Briggeman, is the most important value, while Fairness is the least important. Generally, Safety is widely preferred; the second is Environmental Impact with 48%, and the third is Nutrition (44%). Legality and Naturalness have a 37% and 34% probability of being chosen as the best (i.e., the most important), and the last two values are Price and Fairness, with 30% and 27%. Therefore, Fairness is usually not considered an important value by the consumer and is less critical than legality and values related to food.

4.2. Quantitative results

Table 5 (for the best) and Table 6 (for the worst) report food values' relative importance. It was estimated with respect to the least important food value, "Fairness" (Lusk and Briggeman, 2009). Each of the 333 respondents chooses the "most important" and "least important" value from three choices, repeated in 7 sets of choices. The total number of alternatives was 21, so the number

TABLE 3 Socio-demographic characteristics of the sample.

Variable			Total
Responsible for Food Shopping (frequency)			333
	Never	28	
	Once a week	129	
	Two or three times a week	146	
	Every day	30	
Age			333
	≤20	80	
	21–24	185	
	25–28	51	
	>28	17	
Origin			333
	Northern Italy	15	
	Center Italy	268	
	South Italy	39	
	Islands	11	
Customary place of purchase for food			333
	Convenience store	20	
	Fairtrade buying groups	3	
	Superstore	21	
	Farmer market	17	
	Local market	3	
	Corner shop	31	
	Grocery store	238	
Education			333
	High school	228	
	Bachelor degree	100	
	Master degree and over	5	

Authors' elaboration.

of choices analyzed was 6,993 (333 * 21) for the best and 6,489 for the worst, as 54 cases were dropped due to missingness. Assessing the importance of each value from the conditional logit results is difficult because there is no natural interpretation of the estimates themselves (Lusk and Briggeman, 2009). Therefore, we report the share of preferences to interpret the results using Equation (3) (Lusk and Briggeman, 2009). All values are statistically significant; therefore, the food values analyzed would influence the consumption behavior of the sample. According to the conditional estimation, about 25% of the sample would evaluate Environmental Impact as the most important food value. The second highest preference share is Naturalness, with 22%. These two values are closely linked to environmental sustainability. The 15% and 16% of the sample would rate Price and Safety as the most important. Only 10% of the sample chose legality as the most important, and 11% chose Nutrition. The results mostly agree with Lusk and Briggeman (2009), according to which natural and environmental values are more important than Convenience and Fairness.

TABLE 4 Descriptive statistics for the sample.

Attributes	Total counts/7 BWS tasks across respondents n^*		(B/W)	SQRT(B/W)	Ln(SQRT)	Scale by a factor such that the most important (safety) becomes 100
	Most important	Least important				
Safety	791	61	12.97	3.60	1.281	100
Environmental impact	603	204	2.96	1.72	0.542	48
Nutrition	575	225	2.56	1.60	0.469	44
Legality	495	273	1.81	1.35	0.298	37
Naturalness	509	346	1.47	1.21	0.193	34
Price	453	399	1.14	1.07	0.063	30
Fairness	401	435	0.92	0.96	−0.041	27

$^*n = 333$.
Authors' elaboration.

TABLE 5 Model estimation: beta coefficients and odds ratio for the most important (best) values.

Variables	Econometric estimates		Share of preference
	β	Odds ratio	
Environmental impact	1.18*** (0.14)	3.26*** (0.45)	25%
Naturalness	1.04*** (0.19)	2.82*** (0.53)	22%
Safety	0.74*** (0.19)	2.10*** (0.40)	16%
Price	0.65*** (0.18)	1.92*** (0.35)	15%
Nutrition	0.39* (0.21)	1.47* (0.30)	11%
Legality	0.25* (0.13)	1.28* (0.16)	10%

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. There are robust standard errors in brackets.
No. of cases = 333.
No. of observations = 6,993.
Log pseudolikelihood = −3101.6878.
Authors' elaboration.

TABLE 6 Model estimation: beta coefficients and odds ratio for the least important (worst) values.

Variables	Econometric estimates		Share of preference
	β	Odds ratio	
Nutrition	−0.69** (0.29)	0.50** (0.12)	23%
Price	−0,93*** (0.17)	0,39*** (0.08)	18%
Legality	−0.96* (0.28)	0.38* (0.06)	18%
Naturalness	−0.99*** (0.18)	0,37*** (0.07)	17%
Safety	−1.09*** (0.19)	0.34*** (0.05)	16%
Environmental impact	−1.76*** (0.20)	0.17*** (0.03)	8%

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. There are robust standard errors in brackets.
No. of cases = 309.
No. of observations = 6,489.
Log pseudolikelihood = −2,851.8364.
Authors' elaboration.

The parameter estimates can be interpreted as "low priority grade" regarding the worst values. Table 6 shows that Nutrition is the highest grade of low priority (23%), followed by Price and Legality (18%). 17% of the sample would choose Naturalness as the least important value, while 16% would choose Safety. Only 8% of the sample would rate the Environmental Impact as the least important food value. However, except for the latter, all values would be rated mainly with the same degree of low priority, which means that compliance with some regulation (written or not) is a reassurance sought by most consumers in the sample.

5. Discussion

In the present research, we analyzed a young sample's value system composed mainly of young adults. In particular, the paper attempts to evaluate the system of values of a young sample and how ethical/legal judgments are considered with respect to other food values. Focusing on individuals of given characteristics is relevant because people's value priorities would change in response to experiences and changes in their life (Braithwaite and Scott, 1991).

A food value system can identify peoples' food and consumption preferences (Lusk and Briggeman, 2009) and the relative importance of multiple values that guide action, attitudes, and behaviors (Schwartz, 1992, 2012). According to Schwartz's theory (Schwartz, 1992, 1996, 2012), values are followed by actions, which can conflict with some other values and agree with still others. Therefore, a specific value system may lead to particular choices.

Considering a value system as the relative importance given to an implicit or explicit set of rules, consumers' preference for individual values and how their food value system is composed can also tell us which rules/laws/regulations are crucial. People's different importance to different values, and therefore the value system, is mainly led by goals or motivations that values express (Schwartz, 2012).

Thus, the current study follows the research line of the previous studies about values and food values (Rokeach, 1973; Rohan, 2000; Lusk and Briggeman, 2009), and it tries to evaluate values relations and oppositions with respect to food consumption and food equity, considering a food value system as the relative importance that consumers give to the compliance with different sets of rules. However, unlike Lusk and Briggeman (2009), we also included "Legality" to evaluate the relation with other values. Considering the economic and political power of consumers' choices, especially young adults (increasingly aware of these issues), the results may be relevant.

The results show that the young adults in our sample built a particular awareness during their lives, mainly related to Environmental Impact and Naturalness. At the same time, in the study of Lusk and Briggeman (2009), the most important value was Safety. In our study, this value is the third in terms of importance. Environmental sustainability, Naturalness and Safety are often related, probably due to companies' marketing strategies (Caswell and Mojduszka, 1996; Teisl and Roe, 1998; Nilsson et al., 2004). On the other hand, Price and Nutrition, which are values that are given importance in relation to the country and cultural background (Grunert and Wills, 2007; Bazzani et al., 2018), are not the first interests of the sample. Finally, Fairness and Legality are not considered as important as the other values, in accordance with Lusk and Briggeman (2009).

Based on our definition of value and Schwartz's theory, the value system emerging from the data analysis presents specific features. Environmental Impact and Naturalness are two values that prioritize compliance with both an implicit and explicit set of rules. The first concerns consumers' natural and sustainable consumption, and the second concerns national and international regulations about production sustainability and related incentives. However, the ethical component of food consumption and production (Fairness) and Legality are less important than protecting the environment and Naturalness. This result can be due to two factors: first, Fairness and the Legality of food are usually taken for granted. There are international certifications (standards) for occupational health and safety management systems (like OHSAS 18001) and trade unions to guarantee Fairness and the authority to enforce laws. Therefore, consumers may not feel they must encourage compliance with these legal systems through their consumption choices. However, it should not be taken for granted. Slavery and un-ethic work are still present, especially in the food system. In Italy, particularly in the agro-industrial sector, the spread of organized crime follows a profit logic based on illegality. Within this framework, there is a range of criminal behaviors, from fraud to the exploitation of immigrant labor.

Furthermore, work ethic is not only about fair-trade productions and slavery. As the facts of Kellogg's have shown, Fairness in food production is not always ensured, even with specific laws to protect workers and trade unions. Talking about these themes implies sharing some views about work ethic, and for the companies may be dangerous to expose themselves to these issues. The instability of the labor market and the weakness of the trade unions can lead workers to fear exposing themselves to the problems they encounter in the workplace. Legality is as tricky as Fairness to talk about, especially in countries (such as Italy) where organized crime is still widespread (Perone, 2018; Acemoglu et al., 2020). On the other side, the media pay much attention to environmental sustainability and the Naturalness of food. Companies may also drive engagement in these aspects because, on the one hand, they are easier to implement and promote through marketing strategies. On the other hand, these aspects engage consumers.

The current study aimed to shed light on what value system guides young adults' consumer choices and, in particular, how Legality is positioned within that system. By isolating Legality as a value, we could observe how it relates to other values which embed a legal part, both in terms of norms/laws and requirements. However, although compliance with a legal system which protects a public good (the environment) is considered an essential value, legality *per se* is not. It indicates that the legal part is not what concerns consumers, as it is taken for granted. This finding might suggest, on the one hand, a lack of knowledge of the issues surrounding legality in the Italian agri-food system and, on the other, a strong interest in issues perceived as more urgent by the sample in question.

6. Conclusions

This paper has tried to evaluate a system of food values by valuing the importance consumers give to compliance with different sets of formal and informal rules. It was also observed how ethical/legal judgments are considered with respect to other food values.

We used best-worst scaling (BWS) to study the relevance of food values in consumer choices and a conditional logit to evaluate preference share. The resulting food value system puts values relating to the environment and nature first, followed by Safety and Price. Legality and Fairness are the least significant values. However, in the last few years, the awareness of labor exploitation and poor working conditions has increased, especially among the youngest consumers. For example, in December 2021 in Italy, a scandal arose around a Parmigiano Reggiano commercial, which seemed to praise unsustainable working conditions. Moreover, Kellogg's faced a social media backlash and a boycott important and that consumers' choices may lead to fundamental organizational and political changes.

The current study has some limitations. Firstly, the sample considered consists mainly of young adults from central Italy, not allowing comparisons between subgroups. It might be interesting, for further research, to conduct the analysis on a larger sample that would allow this type of assessment. Second, it was conducted before COVID-19, which has disrupted the job market, supply chains and lifestyle. Finally, another significant limitation lies in the research design. It would be interesting to include preliminary qualitative research (interviews or focus groups) to select the values worth having in the questionnaire. We selected values included in previous studies, but future researchers should consider them.

In this regard, it can be interesting to repeat this study in different countries, maybe comparing the results. As the theory states, several values depend on the country and the cultural background (such as price and Nutrition). Furthermore, comparing the results across different ages could be interesting to assess how social media and generations affect personal value systems.

From a managerial point of view, companies may start to pay attention to legal and ethical aspects other than the environment. However, as the growing attention to the environment has led to the need to favor ethical practices from the view of sustainability, so can the increasing awareness of ethical and legal issues.

It seems that legality is not perceived as an essential element, taken for granted from a political standpoint until a scandal involving the food world occurs. Organized crime, especially in Northern and Center Italy, is perceived as something distant from everyday life, not concerning the food production process. However, as previously illustrated, organized crime is often involved in several food supply chains (Perone, 2018; Rizzuti, 2022), posing a threat to safety and equity in the sector. Over the years, excellent communication has been done on the need to make food production more environmentally sustainable, both by private entities and institutions, putting food sustainability as one of the priorities on the European agenda (Di Marzio, 2015). Similarly, efforts should be made to improve communication on aspects related to the legality of food. In this way, interest in this aspect could be increased, thus leading to a push toward consuming "legal" and "fair" food.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

AM contributed to the conceptual framework, writing, and revising. BP performed the statistical analysis, wrote result interpretation, and contributed to the writing. GC collected the data. EM organized and prepared the dataset. GM designed the questionnaire and contributed to manuscript writing and revision. All authors contributed to manuscript revision, read, and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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