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Consumers' motivations for adopting a vegan diet: A mixed-methods approach

Abstract

The adoption of a vegan diet might have public, health, and environmental benefits; however, still little is known about veganism as the majority of studies on dietary lifestyles have focused on vegetarianism. Hence, in order to address this gap, the present study adopted a sequential and mixed (qualitative; quantitative) research approach based on laddering interviews (n = 20) and a survey (n = 400) to validate the motives for adopting a vegan diet. The results identified seven motives: economic, ethical, health-related, hedonic, animal empathy, respect for animal rights, and personal accountability. Three motives in particular – (i.e., animal empathy, accountability, and animal rights) appear to be the key determinants of consumer's self-identification as vegan-oriented individuals. The study found five attributes (price, nutritious, freshness; tasty, eco/animal friendly ingredients) of vegan products associated with the afore-mentioned motives. Food marketers and policy makers could highlight such attributes to encourage the adoption of a vegan diet.

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Key words veganism; laddering interviews; means-end chain; consumers; confirmatory factor analysis

Accepted Article

Introduction

Plant-based diets have become increasingly popular in advanced economies. Over 20% of North American consumers are interested in purchasing plant-based proteins (Nilsen 2017) and about 50% of European consumers have cut down meat consumption in recent years (Intel 2018). Supporters of plant-based diet believe that it is beneficial to the environment because animal-based diets stimulate greenhouse gas emissions and global warming (Scarborough et al., 2014; Carlsson-Kanyama and González 2009; Stuart 2009; Thøgersen 2010; Tobbler, Visschers, and Sigrist 2011). The health benefits of a plant-based diet are acknowledged by governmental debates on meat production and increased taxes on meat in different parts of the world such as Germany, Denmark, and Sweden (Campbell and Campbell 2006; Campbell and Jacobson 2013; Hertwich et al. 2010; Carrington 2017). Furthermore, the increased popularity of plant-based diet has resulted in companies like McDonalds and Tesco to introduce vegan meals (The hectic vegan 2019; Tesco 2019).

As pure plant-based diet (i.e. veganism) is gaining popularity among consumers, prior research has attempted to investigate the reasons behind this behavior. Concerns about animal welfare (Fox and Ward 2008; Hussar and Harris 2009), personal health, negative emotions (e.g. disgust) towards meat consumption (Hamilton 2006; Jabs et al. 1998; Rozin, Markwith, and Stoess 1997), ethical (Rubi 2012; Fox and Ward 2008; Jabs, Devine, and Sobal 1998; Hoffman, Stallings, Bessinger, and Brooks 2013) and environmental concerns (Stuart 2009; Thøgersen 2010) are among the most relevant reasons. However, past research noted that consumers' personal values play a key role in determining the adoption of a vegan diet (e.g., Aertsens et al. 2009; Lindeman and Sirelius 2001; Hayley, Zinkiewicz and Hardiman 2015; Kalof et al. 1999; Linderman and Sirelius 2001).

Although previous studies have offered some insights into consumer motivations for adopting a vegan diet, there is limited understanding of its functional and psychological benefits (consequences). Some studies investigated these benefits by focusing only on vegan consumers (e.g., Janssen et al. 2016; Cherry 2015; Larsson, Rönnlund, Johansson, and Dahlgren 2003). However, existing studies are exploratory and largely overlooked systematic examinations of the interrelationships between product attributes, functional and/or psychological benefits, and

consumer values (see Brinkmann 2004). Recently, Marques da Rosa et al. (2019) found that the shape and color of packaging influence consumers' perceived product healthiness, tastiness and preferences. Considering that veganism is a culturally deviant phenomenon which evokes explicit consideration of values, the Means-End Chain theory (MEC) appeared more suitable than the practice theory that is used mainly in food consumption studies (e.g. Thorslund and Lassen 2017; Sahakian and Wilhite 2014). Against this backdrop, this study aims to investigate the motivations for adopting a vegan diet through identifying the hierarchical relationships between vegan product attributes, the benefits (consequences) of vegan consumption, and vegan consumers' personal values. Then, a quantitative follow-up study verified the validity of our findings.

Our study makes two contributions to the body of knowledge on the determinants of a vegan diet. First, we clarify what it means for consumers to be vegan. Toward this end, we identified the hierarchical relationships between vegan product attributes, the benefits (consequences) of these attributes, and consumer values using the MEC theory. According to this theory, consumers are "goal-oriented decision makers who choose to perform behaviors that seem most likely to lead to desired outcomes" (Costa, Decker, and Jongen 2004, p. 404). Furthermore, according to this theory, the utility of a product can be derived from product attributes but it is represented by its functional and psychological benefits (Bitzios, Fraser, and Haddock-Fraser 2011). This is important because people make sense of their consumption experiences by categorizing product attributes and the related consequences hierarchically with respect to their values (de Ferran and Grunert, 2007). Furthermore, hierarchical processes help marketers to gain an insightful understanding of consumers' reasons for purchasing products.

Second, this research highlights the usefulness of a mixed qualitative-quantitative methodology to gain an insightful understanding of veganism as a complex dietary choice. Some past studies have used quantitative approaches which lack deeper understanding of the motives for adopting a vegan diet (e.g. Kerschke-Risch 2015; Rozin et al., 2012) or qualitative approaches which are highly contextualized and limited in terms of generalizability (e.g. Fox and Ward 2008; Larsson, Rönnlund, Johansson and Dahlgren 2003). To overcome these drawbacks, this study adopts a qualitatively driven mixed methods approach (Leech and Onwuegbuzie, 2009) consisting of laddering interviews followed by a survey.

From a managerial point of view, the results of the study provide marketers and policy makers with useful indications about the product attributes and benefits that determine consumers'

adoption of a vegan diet. Such indications can be used to develop effective policies and marketing strategies aimed to increase the consistency between vegan product offerings and consumers' inner motivations for consuming vegan products. Food companies and policy-makers could emphasize the identified attributes and benefits to signal the values that vegan consumers prize, in order to align the market offerings with consumers' principles, which, in turn, can improve consumers' satisfaction.

In the remainder of the paper, we first review the current literature on plant-based diets, and provide a review of the perceived benefits and values that influence consumers' adoption of the vegan diet. Next, we introduce our methods (i.e., in-depth semi-structured laddering interviews complemented by projective techniques and the survey). Then, we report the research findings and conclude with theoretical and managerial implications, and suggestions for further research.

Theoretical Background

Consumer Motivations for Adopting Vegetarian and Vegan Diets

The term 'plant-based diet' has been mainly used to refer a dietary choice (e.g., Beverland 2014) and different diet categories, such as vegetarian, vegan, semi-vegetarian, lacto-vegetarian, ovo-vegetarian, pescatarian, or flexitarian diets (Corrin and Papadopoulos, 2016).

Despite some similarities between vegetarians and vegans, prior studies found various and sometimes different motivations for adopting a vegan and vegetarian diet (Radnitz et al., 2015; Izmirlı and Phillips 2011; Larson, Rönnlund, Johansson, and Dahlgren (2003). A multitude of psychological and behavioral factors determine the adoption of vegan diet (Beardsworth and Keil 1992; Rothgerber 2013). For example, Larsson et al. (2003) categorize vegan consumers into three groups based on their behavioral tendencies: conformed vegans, organized vegans, and individualistic vegans. 'Conformed' vegans socialize mainly with other vegans. 'Organized' vegans consider veganism as an ideology and pursue animal ethics, equality, solidarity, and non-political points; and, 'individualistic' vegans are like organized vegans but have no intention of associating with others. However, research on the vegan consumers' behavioral drivers has largely neglected to investigate the relationship between the distinctive characteristics of vegan products, the benefits that consumers derive from them, and their personal values.

Previous studies on plant-based diet mainly focus on vegetarianism and report a variety of reasons for this dietary choice ranging from disgust towards meat (Rosenfeld and Burrow 2017), ethical concerns about cruel slaughtering of animals (Hoffman et al. 2013; Ruby 2012; Fox and Ward 2008; Hussar and Harris 2009), desire for better health, weight loss, saving money (Hamilton 2006; Jabs et al. 1998; Rozin, Markwith, and Stoess 1997), environmental concerns, religious beliefs (Ruby 2012), spiritual concerns, to political activism (Linderman and Serelius 2001). Personal factors, such as financial constraints, influence of family and friends, and limited access to animal products result in an involuntary form of plant-based diet (Rosenfeld and Burrow 2017). Environmental and religious oriented concerns are other important motivations (e.g., Fox and Ward 2008; Rosenfeld and Burrow 2017).

Some studies documented a connection between gender and adoption of a plant-based diet where women were found to be more likely to adopt a plant-based diet than men (Beardsworth and Bryman 1999; Smart 1995; Stahler 2005). Other studies suggest that consumers with low levels of involvement in dietary choices may be more attached to meat and less likely to shift towards a plant-based diet (Berndsen and Van der Pligt 2004; Elzerman, van Boekel, and Luning 2013; Graça, Calheiros, and Oliveira 2015). Human sense of entitlement to use animal products and dependence on meat, meat enjoyment (Corrin and Papadopoulous 2017), lack of sufficient dietary information, and consumer unwillingness to change their dietary habits (Lea and Worsley 2008) may hinder the adoption of plant-based diet (Graca et al. 2015).

Although there are fewer studies on veganism as opposed to vegetarianism, the two dietary styles share similar drivers, such as health concerns (Radnitz et al. 2015; Dyett, Sabate, Haddad, Rajaram, and Shavlik 2013; Waldmann, Koschizke, Leitzmann, and Hahn 2003), ethical concern for animal rights (Adams 1991; Jabs et al. 1998; Larson et al. 2003) and environmental preservation (Kerschke-Risch 2015; Kalof et al. 1999). It is worth mentioning the role of social interactions in becoming vegetarian: recently, Séré de Lanauze, and Sirieix (2021) found social influences and individuals' relationship with their own communities to be important in the process of becoming and remaining a vegetarian diet. Similarly, Neulinger et al (2020) reported an alternative food network (e.g. food cooperatives (FoodCoops), box schemes, farmers' markets) for vegetarians' subjective wellbeing.

Thus, overall, health and ethical reasons (i.e. animal welfare and animal rights) are the primary motives for the adoption of plant-based diet (Jabs et al. 1998). Health oriented concerns are related to the health risks associated with consuming animal products (Rosenfeld and Burrow 2017), body mass index and obesity among adults and children (Sabate and Wien 2010). Ethical concerns refer to animal rights, environment protection and, religious or spiritual beliefs (Hoffman et al 2013).

It is important to note, however, that the overwhelming majority of studies on plant-based diets have focused on vegetarianism or diets which require less meat and more vegetable consumption (e.g., Jabs et al. 1998; Rozin, Markwith, and Stoess 1997; Hamilton 2006; Fox and Ward 2008; Hussar and Harris 2009; Ruby 2012; Hoffman, Stallings, Bessinger, and Brooks 2013). Thus, the current understanding of consumers' motivations for adopting a vegan diet is still limited.

Given the increasing popularity of veganism and its implications for public health (Waldmann, Koschizke, Leitzmann, and Hahn 2003) and environment preservation (Scarborough et al. 2014), an investigation of the relationship between vegan product attributes, the related consumption consequences, and vegan consumers' values could be of significant interest to marketers and food policy makers aiming to promote vegan diet.

Personal Values and Adopting a Vegan Diet

Schwartz (1992, p. 4) defines values as “concepts or beliefs, pertaining to desirable end states or behaviors, transcendent of specific situations, guiding selection or evaluation of behavior and events, ordered by relative importance”. Values capture trans-situational goals or motivations that inform attitudes and guide people's behavior (Bardi and Schwartz 2003). Human values are a more stable predictor of behavior than consumer attitudes as attitudes tend to change according to consumption contexts. Schwartz (1992) distinguishes ten universal values; *self-direction*, *stimulation*, *hedonism*, *achievement*, *power*, *security*, *conformity*, *tradition*, *benevolence*, and *universalism* which fall within two distinct higher-order value categories: *openness to change-conservation*, and *self-enhancement-self-transcendence* (Schwartz 1994; Schwartz et al. 2012). To increase the explanatory power of the value theory, Schwartz et al. (2012) expanded the value framework by introducing 19 values based on their compatible and conflicting motivations (i.e., expression of self-protection versus growth, and personal versus social focus) as shown in Table 1.

Schwartz's universal value theory is applied in several research domains, but only a limited number of studies have investigated the relationships between these values and adopting a vegan diet. On one hand, consumers who possess high level of *universalism* are more likely to be vegetarian or buy organic foods (Aertsens et al., 2009; Lindeman and Sirelius 2001), and less likely to consume meat or seafood (Hayley, Zinkiewicz and Hardiman 2015). On the other hand, consumers who hold *power and security value* develop positive attitudes towards meat and seafood consumption. Meanwhile, those who hold *conformity value* exhibit positive attitudes toward meat and seafood consumption (Hayley, Zinkiewicz and Hardiman 2015).

These findings demonstrate that there is a potential connection between consumer values and willingness to reduce meat consumption or adopting a vegan diet. However, research that investigates key value drivers of the vegan diet is limited (e.g., Saher, Lindeman, and Hursti 2006; Baker, Thompson and Palmer-Barnes 2002; Apostolidis and McLeay, 2016). Previous studies examined the value-consumption behavior relationship by adopting a quantitative approach based on Schwartz's original 10 universal values (Schwartz 1992). While these studies attempted to relate consumer values with adopting a particular diet, including veganism, they demonstrate weak explanatory power (Schwartz et al. 2012). The links between consumer values, product attributes, and consequences of adopting a vegan diet have not been established yet. This paper addresses this gap as it uncovers how values are connected to vegan food consumption motivations and vegan food attributes through the MEC theory and the laddering approach.

Means-End Chain Theory

The Means-End Chain (MEC) theory (Gutman 1982; Phillips and Reynolds 2009) investigates the link between product attributes, functional and psychological consequences derived from product attributes, and consumer values as shown in Figure 1.

According to the MEC theory, consumers are “goal-oriented decision makers who choose to perform behaviors that seem most likely to lead to desired outcomes” (Costa, Decker and Jongen 2004, p. 404). The MEC theory postulates that product “attributes (A) derive their relative importance from satisfying (functional and psychosocial) consequences (C) which, in turn, derive value from satisfying higher order values (V)” (Phillips and Reynolds 2009, p. 84). Thus, the

MEC theory establishes the cognitive linkages between product attributes, consequences of product consumption, and consumer values (Botschen et al. 1999; Bredahl 1999; Claeys et al. 1995; Grunert and Grunert 1995; Mulvey et al. 1994; Nielsen et al. 1998; Reynolds and Gutman 1988). Product attributes, in turn, can result in functional (i.e. satisfying hunger), emotional (i.e. feeling good) and social consequences (i.e. feeling good for protecting animals, environment). The consequences are linked to instrumental (i.e. preferred modes of conduct in order to achieve the end state goals) and terminal values (i.e. end state goals) (Peter and Olson, 1987). Previous studies used MEC theory to explore the cognitive structures and motivations for dietary habits in different types of food consumption including meat (Grunert and Valli 2001), fish (Valette-Florence et al. 2000), and vegetables (Kirchhoff, Smyth, Sanderson, Sultanbawa, and Gething 2011) consumption. However, research on the motivations for adopting a vegan diet is extremely scarce (Blatner 2008).

Laddering (Reynolds and Gutman 1988) is one of the key techniques of MEC to discover the factors underlying consumer decision-making (Phillips and Reynolds 2008). Laddering begins with eliciting a personally meaningful distinction or an attribute. It involves probing consumer motivations with an increasing level of abstraction (from attributes to consequences and values) and results in ladders which demonstrate how product attributes are linked to consequences and personal values (Phillips and Reynolds 2008). Laddering is an appropriate method to elicit the motives behind becoming vegan due to its ability to discover the linkages between the vegan product attributes and consumer values (de Ferren and Grunert 2007).

Laddering can be implemented in a soft or hard manner. *Soft* laddering involves developing ladders based on the natural flow of speech where individual ladders are generated through semi-structured interviews (Reynolds and Olson 2001; Wansink 2003). Some limitations of soft laddering include finding expert interviewers, geographic constraints, the time and costs associated with interviewing, coding and transcribing interviews (Reynolds and Phillips 2008; Veludo-de-Oliveira et al. 2006). However, soft laddering is the approach most commonly used by researchers (Russell 2004). On the other hand, *hard* laddering involves “interviews and data collection techniques where the respondent is forced to produce ladders one by one, and give answers in such a way that the sequence of the answers reflects increasing levels of abstraction” (Grunert and Grunert 1995, p. 216). Hard laddering mostly involves quantitative, paper and pencil-based surveys in which data are gathered using a structured questionnaire (Valette-Florence et al. 2000).

Methodology

We used a mixed-methods design to gain deeper understanding of motivations for adopting a vegan diet. More specifically, we used a qualitatively driven mixed method (Leech and Onwuegbuzie 2009), starting with soft laddering interviews, followed by a quantitative survey to verify the findings from the qualitative phase (Harrison and Reilly 2011; Mason 2006). Then, we conducted a follow-up quantitative study to validate the findings of the laddering interviews. For each of the motivations identified through the laddering (both enjoying eating and feeling positive together were considered as hedonic motivation), we created a list of statements based on the qualitative interviews and participants' verbatim quotes. The questionnaire included the statements and some demographic questions. The questionnaire was pretested prior to data collection with 60 vegan consumers. We made minor changes to the survey questions. We deleted the items that were deemed to be unrelated to the motivating factors that were identified after the laddering interviews. Then, the final questionnaire was administered via an online crowd-sourcing platform (Prolific Academic) and selecting only individuals who identified themselves as vegan consumers. In total, 423 people participated in the survey. Of these, 400 fully completed the questionnaire. The sample was above the recommended sample size of 200 for confirmatory factor analysis (Loehlin, 1998).

Measures

The motives for adopting a vegan diet were measured by multiple items derived from the laddering interview findings (see Table 5). Economic motives (e.g., 'Vegan products are less expensive than other food products'), ethical motives (e.g., 'I do not feel guilty when I eat these products'), personal accountability (e.g., 'I consider the consequences of my actions to the broader society') and hedonic motives (e.g., 'I enjoy these products' tastes and flavours') were measured by three items; health motive was measured by four items (e.g., 'Vegan products are healthier and more nutritious than other food products'); animal empathy (e.g., 'I am sympathetic to animals suffering') and animal rights were measured by five items (e.g., 'Animals live 'with us', not 'for us)'). The study measured participant's self-identification as vegan consumers using a two-item scale ('I think of myself as a vegan consumer'; 'I consider myself a vegan consumer') derived from Michaelidou and Hassan (2008). All items were measured on a 7-point Likert type scales from (1) Strongly Disagree to (7) Strongly Agree.

Qualitative study

Interview sample

We used a purposive snowball sampling technique to recruit respondents. Recruitment notices were distributed through print and electronic advertising in local supermarkets, community centers, events targeted at vegans (e.g., vegan festivals) and social media such as Facebook. Potential participants were asked to indicate their interest in taking part in the study via email or telephone and their eligibility to take part was determined based on a screening questionnaire, which was sent to them prior to the beginning of the interview. In the screening questions, the participants were asked to confirm whether they adhered to a vegan diet (i.e., a diet refraining from meat and all animal-based products). Appendix A shows the participants' profiles. Pseudonyms were used to ensure the anonymity of the respondents.

Interview Process

In depth interviews were conducted, followed by a MEC-based soft laddering analysis, to identify the values leading to consumers' adoption of a vegan diet and assess the link between their cognitive structures and their veganism. The soft laddering technique involves semi-structured interviews with probing (Reynolds and Olson 2001; Wansink 2003) to explore complex motives behind consumption (Costa et al. 2004). This technique generates means-end chains with higher predictive validity. Following Gutman's (1982) approach, we conducted 20 in-depth laddering interviews lasting between 45–90 minutes among British vegans over a two-month period to explore the motives for adopting a vegan diet.

In order to assess the reasons for adopting a vegan diet, consumers were asked to state their reasoning and motivations for being vegan. Subsequently, to elicit the personally meaningful and important attributes that vegan consumers consider when choosing vegan products, the laddering interviews were complemented by projective and enabling techniques that involved the use of 'word association tasks', 'sentence completion' and projective questions. They were employed because interpretive research often uses different data collection methods (Bahl and Milne 2009; Hollenbeck and Patrick 2016) that have the ability to generate rich and in-depth insights. Such an approach enables the researchers to obtain complementary insights and understandings, which may not be generated when a single method is used (Darbyshire et al. 2005). For example, in order to elicit the most important attributes that the respondents consider when choosing a vegan product, a sentence completion task was carried out: respondents were asked to imagine a food-

shopping scenario and think about the most important attributes that would motivate them to choose a vegan product. They were requested to fill in several sentences such as “I consider...when I buy a vegan product”.

Once the key product attributes were identified, the respondents were asked to indicate *why* it is important for them to consider that particular attribute when choosing vegan diet. This technique resulted in the construction of ladders, which demonstrate how product attributes are linked with consequences (motivations) and personal values. Word association was used to understand the concept of veganism from the respondents’ perspective. Respondents were asked to indicate the first words, images, associations, thoughts or feelings that come to their mind when they think of vegan products. We followed-up the laddering interviews with 10 member-checking interviews via email and telephone conversations approximately three weeks after the initial interview. Member checking involves checking the validity of the interpretive research findings (Wallendorf and Belk 1989). A complete transcript and a summary of the preliminary findings were sent out to the informants before contacting them for the member checking.

Data Analysis

The laddering data were analysed by following established laddering analysis procedures to develop Hierarchical Value Maps (HVMs). This involved content analysis, development of an implication matrix, and developing HVMs. In the content analysis stage, meaningful categories were identified that represent the attributes, consequences and values using the key words and phrases mentioned at the laddering interviews. These categories were refined in line with the literature review findings (Schwartz et al. 2012). Once the master categories and codes were determined, numbers were assigned to each code. These numbers were then used to score each element category in each ladder (i.e. attributes, consequences, and values) to produce the implication matrix. This matrix represented the number of times each category leads to another one (i.e. the frequency between attributes- consequences, attributes-values, and consequences-values). Once the implication matrix was constructed, we examined the adjacent relations between attributes, consequences and values to develop attribute-value chains that represent such relationships. As suggested by Reynolds and Gutmann (1988), a chain illustrates the sequences of elements which emerge from the implication matrix. Finally, HVM was developed by connecting all the chains identified. The HVM shows how product attributes represent, for consumers, means to achieve their desired end goals (or values). After this stage, the data from the in-depth

interviews were analyzed to establish the similarities/differences between themes from the interview data and the findings from the laddering technique analysis. This method of triangulation ensures the reliability of the findings (O'Donoghue and Punch, 2003).

Results of the Qualitative Study

The analysis of the transcripts identified a total of 46 constructs comprised of 14 attributes, 13 consequences and 19 values as shown in Table 2.

As can be seen from Table 2, the analysis yielded 10 product attributes (e.g., nutritional value, price, convenience, etc. taste, eco- and animal-friendly ingredients); 8 functional consequences, corresponding to the benefits that consumers may derive from a vegan diet (e.g., being healthy, protecting the environment, avoiding animal cruelty, etc.) and 5 psychological consequences corresponding to a series of emotional benefits connected with vegan diet (e.g., feeling guilt-free, feeling positive, feeling effective); 5 instrumental values, corresponding to short-term goals or end-states (e.g., self-direction action, power resources) and 14 terminal values, corresponding to long-term goals or end-states (e.g., stimulation, hedonism, achievement).

Hierarchical Value Map

Content analysis of the transcripts produced the implication matrix (Dennis, King and Wagner, 2007) which served to establish the number of times each element of a ladder led to another. Then, the data reported in the matrix were used to build the Hierarchical Value Map (HVM), that is, a graphical representation of the most meaningful associations between the attributes, consequences, and values as shown on Figure 2.

sociations that were detected at least five times in the analysis of the transcripts. Setting this cut-off value helps to reduce the complexity of the results and make the map more meaningful and clearly interpretable (Devlin and Birtwistle 2003). The line thickness in the HVM corresponds to the number of times a specific association among the categories was detected in the analysis: the thicker the lines, the greater the number of times that linkage was mentioned by the interviewed sample.

This procedure resulted in a clearer, more interpretable map which allowed for the identification of 5 attributes (nutritional values, freshness, and price, (taste, eco- and animal-friendly ingredients). The analysis yielded 8 consequences (motivations), 4 of which are functional (being healthy, avoiding animal cruelty, protecting the environment, thrift) and the other 4 are psychological (feeling effective, enjoying eating, feeling positive, feeling guilt-free); and 6 values, one of which is instrumental (self-direction action) and the other 5 are terminal (hedonism, achievement, universalism-concern, universalism-nature, personal security).

As can be seen from Figure 2, the strongest attribute-consequence-value (A-C-V) linkage was found between the nutritional value, taste, and eco- and animal-friendly ingredients of the products, health consequences, and hedonism values. Indeed, the findings of the study show the nutritional value of vegan products may help vegans to have a healthy life, which, in turn, allow them to pursue hedonic values and hence please themselves. Similarly, the respondents seemed to enjoy the taste of vegan foods, as it activated a sense of enjoyment leading to pleasure (hedonism). The HVM shows that eco- and animal-friendly ingredients are connected with two main benefits (consequences): avoiding animal cruelty and protecting the natural environment. Both benefits are ultimately linked with 'universalism' (a terminal value), particularly, with universalism-concern, which refers to a sense of commitment to equality, justice, and protection for all people, and universalism-nature, which refers to the importance of preserving the natural environment. Furthermore, eco- and animal-friendly ingredients are linked with emotional consequences, namely feeling less guilty, suggesting that eco- and animal-friendly vegan diets enable people to feel less guilty when they consume vegan food; this mirrors their inclination to prize universalism-concern.

The HVM reveals some other interesting A-C-V linkages. In particular, price emerged as a key attribute that vegans consider when selecting vegan products. This attribute seems to engender a

sense of financial security, which, in turn, appears consistent with consumers' tendency to value personal security as an important principle in life. The high nutritional value of vegan foods makes consumers feel effective (i.e., capable of adequately performing their tasks and managing their daily duties), and hence able to accomplish their desire to autonomously determine their own actions (self-direction actions). Moreover, the taste of plant-based vegan generates a positive feeling, which was associated with a sense of achievement.

Overall, the findings of the HVM suggest that vegan foods are chosen considering a range of attributes that benefit both individuals (nutritional value, freshness, taste, and price) and society as a whole (eco- and animal-friendly ingredients). Similarly, consumers who adopt a vegan lifestyle derive personal, psychological and social benefits from consuming plant-based foods (they feel physiologically and psychologically better and able to protect nature and the welfare of others). This behavior is linked with a number of desired end goals which are driven by personal values, some of which have a personal focus (self-direction actions, hedonism, achievement, and personal security), whereas others have a collective focus (universalism-concern, universalism-nature). These values are echoed under the two main themes, Self-transcendent values and Self-enhancement values, seen in the in-depth interviews, which are discussed below.

Values Relevant to Consumers Following a Vegan Diet

Overall, the findings of the laddering interviews suggest that the consumers in our study believe veganism is more than just what they eat; it is a way of life. Vegan consumers in our study appreciate self-transcendence values such as universalism-concern and universalism-nature, and care about self-enhancement values (hedonism and achievement) as they want to be in control of their actions to have a better life.

Self-Transcendence Values. These values are concerned with the welfare and interests of others (Schwartz et al 2012). These, according to our HVM, are universalism-concern and universalism-nature where individual consumers care about the protection of environment and others (Ibid). Vegan consumers question the extent to which they have the right to control the lives of other creatures and thus consider themselves to be part of the natural world rather than creators or masters of it. This creates a sense of responsibility for them to be mindful of their actions, in relation to in-group members such as family and friends as well as external members (e.g., animals, next generations). In our study, the participants talked about their mindfulness and awareness of the consequences of their deeds and behavior on the planet:

Well, my generation has grown up with an awareness of how we're affecting the world around us, much more than, perhaps, our parents' generation who were sort of taught not to worry and just consume everything and told, 'that's not your problem to worry about'. Whereas our generation, I think, has a conscience about what we consume, well, to a larger extent. (Fraser, 30)

I like the positive impact of knowing that I'm doing as much as I can to help the environment, and doing as much as I can to help animals. I just feel happier; I don't think I'd be happy [when] eating meat or dairy and feeling like I'm a good person, in a way. (Ryan, 38)

These quotes illustrate the cautiousness in individual vegans' behavior to make sure they are contributing to their surroundings, or at least reducing the harm they are causing to the environment, as well as doing good for themselves. This can be seen in the quotes below where consumers consider decisions to support an industry practice to be dependent on purchasing the supplied goods.

I didn't want to support an industry that, you know, condones the killing of baby animals, baby cows. (Rita, 53)

I found out just how much environmentally the industries impact our globe – global warming and the future of our planet – a strong reason not to support those industries. (Daisy, 33)

The sense of responsibility and action accountability confirm the universalism and self-direction action values identified in our HVM.

Self-Enhancement Values. These values refer to pursuing one's own interests and relative success over others (Schwartz et al 2012). In our study, we found personal security, achievement and hedonism as well as self-direction action to be the important self-enhancement values for adopting a vegan diet. The consumers in our study see veganism as a way to maintain their health in order to continue having control over their life.

I'm in better health than if I – you know, because I don't – I don't know. You know I hadn't – I have no health issues or anything like that but, maybe, but maybe I wouldn't have had if I'd continued eating animal produce (Sally, 55)

...When I'm eating, eating the food [vegan food] usually I'll feel like, I'll healthy and I'll feel well, as I'm eating the colorful healthy food, not the junk food (Sarah, 34)

Having control over their actions, vegan consumers found vegan products to increase their enjoyment from eating, in general through eliminating the level of guilt they felt when consuming animal-related products:

I'm not contributing to...you know, with the inequality and all the pain and suffering, so it makes me feel good. (Rose, 25)

So that's, that's good. I mean, it's still animals all the way down the line, but it's knowing that you're not having a big impact on the environment as well, or as little impact as possible, is a good reason. Definitely the swap from being, you know, vegetarianism, yeah that's great, but veganism, I felt better. (Rita,53)

Furthermore, our participants talk about the inclusivity that vegan products can offer, which refers to social welfare and the feeling of safety and security consumers experience by being vegan:

Veganism has been seen as something that's unobtainable because it's too expensive. They [consumers] can't use that [expensive prices] as a kind of excuse for not trying the vegan lifestyle. But, if you buy less of the processed food, and just cook more with fruits and vegetables, then the cost is not high and you just have to be able to prepare the food... Yeah, and just making it more accessible to people, so anyone can do it and it's not seen as an elitist thing, because anyone can have that cruelty-free life if they want. (Georgie, 50)

Similar to the findings from the HVM where self-direction action, security, hedonism, achievement, and universalism-concern and universalism-nature were found to be important values leading to the adoption of a vegan diet. The results from the interviews illustrate the nature of these values to be both self-motivated as well self-transcendence. For example, caring about nutritional values (i.e., product attribute) is clearly related to being healthy (i.e., consequence) which, in turn, could help individuals to enjoy life (i.e., hedonism value). On the other hand, when individuals care about eco and animal-friendliness (i.e., product attributes), they want to reduce the harm they are doing to the environment to eliminate the feeling of guilt (i.e., consequence) and protect the planet and the creatures within it (i.e., universalism-concern value).

The results of the qualitative study identified five main values – Self-direction action, Achievement, Personal security, Universalism, and Hedonism, which reflect vegan consumers' reasons behind eating vegan products. The results of the qualitative study identify seven different motivations for consuming vegan products: *accountability*, which is feeling responsible for one's own actions (which is reflected in the ladder depicting eco- and animal-friendly ingredients—feeling guilt-free—universalism concern), *economic* motivations (Price Thrift—Personal security), *ethical* motivations (eco- and animal-friendly ingredients protecting the environment—Universalism concern and nature), *health* motivations (freshness and nutritional values—becoming healthy—feeling effective—self-direction action and hedonism), *hedonic* motivations (taste—enjoying eating—feeling positive—hedonism and achievement), *animal empathy* (eco- and animal-friendly ingredients avoiding animal cruelty—universalism-nature), and care for *animal rights* (eco- and animal-friendly ingredients—feeling guilt free—universalism-concern).

Results of the Quantitative Study

Sample characteristics

As shown in Table 3 the sample consisted mainly of female consumers (75%) living in the UK (59%) and the USA (20%).

Cronbach's Alpha of each latent variable was greater than 0.70, which shows a high reliability for the measures (Nunnally, 1978). Convergent validity is achieved when the Average Variance Extracted (AVE) value exceeds 0.50 (Hair et al., 2010). The AVE value of each latent construct exceeds 0.50, indicating that the convergent validity of the measures is adequate. The discriminant validity was checked following the approach suggested by Fornell and Larcker (1981). Discriminant validity is achieved if the squared AVE score is above the inter-construct correlations (IC). Table 4 shows that the squared AVE scores are higher than ICs, supporting the discriminant validity of the motivating factors. Then, the construct validity of the seven motivating factors was assessed by confirmatory factor analysis (CFA) using AMOS 24 as shown in Table 5.

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The model exhibited a good fit: the Chi-Square index, $\chi^2(273) = 604.941$, was significant ($p < 0.001$). The other fit statistics reached the recommended acceptable minimum threshold level, TLI = 0.93, NFI = 0.91; CFI = 0.95; RMSEA = 0.05. All factor loadings were ≥ 0.40 and significant ($p < .05$), satisfying the criteria for construct validity (Hair et al. 2019). The findings correctly identified the seven motivations emerged from the qualitative study. The highest average score was for animal empathy motives (Mean = 6.43), followed by animal rights (Mean = 6.25) and accountability motives (Mean = 6.14).

After confirming the reliability and construct validity of the measures, we conducted a path analysis with AMOS 24 to investigate whether vegan diet motivations predict vegan identity (i.e. predictive validity). The model exhibited a good fit (CFI = 0.99, TLI = 0.95, NFI = 0.98, RMSEA = 0.05). The seven vegan diet motivations explain 30% of variance in vegan identity. Three vegan diet motivations – animal empathy (Standard Path Coefficient (SPC) = 0.24, $p < 0.01$), accountability (SPC = 0.22, $p < 0.01$) and animal rights (SPC = 0.12, $p < 0.05$) – are positively related to consumers' vegan identity. Overall, the findings of the quantitative study confirm that the seven motivating factors for adopting a vegan diet are reliable and valid.

Discussion

The present research investigates the motivational structures that prompt consumers to become vegan by focusing on the importance they place on vegan product attributes, the perceived consequences of adopting a vegan diet, and their personal values. Our findings indicate that such motivational structures are a complex mix of attributes, consequences and values, which are developed in a hierarchical manner. Some of the inherent motivations for adopting a vegan diet that emerged from this research – e.g., caring for one's health, protecting animals and the environment – appear consistent with those highlighted by previous studies (e.g., Hodson and Earle 2018; Greenebaum 2012). However, the main contribution of this research lies in the identification of the specific attributes of vegan products that fulfill these motivations and the final goals that consumers intend to achieve with a vegan diet.

Our results establish that three attributes (i.e., price, nutritional value, and freshness respectively) satisfy consumer desire for financial security, being healthy, and feeling able to effectively accomplish their daily duties. Furthermore, two product attributes, taste and eco- and animal-friendliness, satisfy a desire to enjoy eating while simultaneously protecting animals and

the environment. Vegan products seem, in fact, to provide consumers with functional (e.g., financial security, feeling effective) and psychological (e.g., feeling positive and guilt-free) benefits. By yielding these benefits, vegan products ultimately allow consumers to achieve a number of desired end-states identified by self-related values – self-enhancement values (i.e., personal security, self-direction action, hedonism, and achievement) and self-transcendent values that reflect a broader concern for people’s wellbeing and nature protection (i.e., universalism-concerns, universalism-nature).

This research found that the consequences of vegan consumption, which reflect consumers’ motivation for this dietary choice, have a mixed cognitive and affective nature. Indeed, by consuming vegan products, individuals may experience different feelings, including but not limited to, feeling safe from an economic point of view and in good health, and experiencing positive sensations, such as enjoyment, effectiveness, and moral righteousness. Globally considered, our results corroborate the finding that *animal-related* motives, *personal health and well-being*, and *environmental-related* motives induce consumers to adopt a plant-based diet (e.g., Dyett et al., 2013; Rothgerber 2013; Timko, Hormes, and Chubski 2012). This result is in line with Hodson and Earle (2018), who find that justice concerns (animal and environment protection) and personal reasons (health, taste) are some of the most relevant drivers of consumers’ decision to be vegan, and support Greenebaum’s (2012) classification of such drivers as ethical- and health-related motivations.

However, the findings of our study indicate that the reasons behind consumer willingness to adopt a vegan diet lie beyond this health-ethical dichotomy. For vegans, the findings suggest that veganism is more of a ‘philosophy of life’, comprised of self-enhancement and self-transcendent values, which are strongly linked with their personal desired end goals. Thus, a vegan diet is seen as a means through which consumers achieve their terminal and instrumental end values, and hence as a life-driving philosophy.

The survey results confirm the findings of the qualitative study and reveal seven motivations for adopting a vegan diet, namely: economic, health, hedonic, animal empathy, animal rights, accountability, and ethics. Similar to previous studies (Hussar and Harris 2009; Fox and Ward 2008; Stuart 2009), animal welfare (Animal empathy, animal right), ethics and accountability (protecting the environment and sense of responsibility for ones’ own actions) were found to be important motivations for adopting a vegan diet. However, contrary to previous studies where health and economicity were found to be among important motivations for individuals to adopt

vegan diet (e.g. Campbell and Campbell 2006; Hamilton 2006; Campbell and Jacobson 2013), our survey results show hedonic motivations to exceed health and economic motivations.

Managerial implications

Practitioners in the vegan industry and food specialists can use the consumers' value map regarding veganism to identify the attributes that predominately influence consumer choice of being vegan, and design policies and marketing strategies aimed at ensuring that such attributes reflect consumers' inner motivations to be vegan. Our results suggest, first of all, that such communication strategies could highlight the affordability of vegan products compared to more expensive products (e.g., animal products), which could be particularly appealing to consumers who prize personal security as an important value in their life. Communication strategies could emphasize the nutritional value and healthiness of vegan products to target health-conscious consumers who consider their health and daily life effectiveness as important pre-conditions to feel free to determine their own actions (self-direction action) and please themselves (hedonism). Strategies aimed to target the most hedonic and self-focused vegan consumers could stress the pleasing properties of vegan products, particularly their taste and freshness. Finally, strategies aimed to target ethically oriented vegan consumers, who are concerned about animal welfare and nature protection, could emphasize the eco and animal-compatibility of vegan products.

Based on these considerations, food policy makers and marketers in the vegan industry could target four main potential consumer groups, namely *personal security-oriented* consumers (who prize the affordability of vegan products), *health-oriented* consumers (who prize the health value of vegan products), *hedonic* consumers (who prize the pleasing properties of vegan products), and *ethically-oriented* consumers (who prize the 'righteousness' of vegan products). Designing communication strategies that revolve around the specific features of vegan products identified in this research would reduce the previously mentioned gap between consumer attitudes towards the vegan diet and their actual behavior. These strategies could, in fact, increase the number of consumers who decide to switch to this potentially sustainable dietary lifestyle and hence support the expansion of the vegan industry.

Limitations and Future Research

Although the majority of our respondents were from Western countries, it is important to consider that cultural factors might have influenced their answers about vegan product attributes, as well as the consequences of being vegan, and the priority that they attach to specific values. Thus, future studies could deepen the investigation of the role of cultural factors in vegan diets by extending the study into different cultural contexts. Social relationships (e.g., friendship, kinship) with other vegan consumers might have significantly affected respondents' answers, but in our study, we did not focus on this particular factor. Hence, future studies could investigate in greater detail the role played by societal ties. Finally, future studies could utilize the findings of the quantitative study to further investigate the relationships between consumer values, vegan motivations, and consumer purchasing behaviour in order to examine the predictive validity of our findings.

Conclusion

This study used a sequential and mixed (qualitative; quantitative) research approach based on laddering interviews and a follow up survey identified seven motives for adopting a vegan diet: economic, ethical, health-related, hedonic, animal empathy, respect for animal rights, and personal accountability. Five vegan product attributes (price, nutritious, freshness; tasty, eco/animal friendly ingredients) are associated with the afore-mentioned motives. Three vegan diet motives - animal empathy, accountability, and animal rights - appear to be the key determinants of consumer's self-identification as vegan. These findings contribute to the body of knowledge on the determinants of a vegan diet and the hierarchical relationships between vegan product attributes, the benefits (consequences), and consumer values. Moreover, the research suggests that using a mixed qualitative-quantitative methodology can be helpful in understanding the determinants of vegan consumers' complex dietary choice. From a managerial perspective, the results of the study provide marketers and policy makers with useful indications on the product attributes and benefits that determine consumers' adoption of a vegan diet in a way that increases the consistency between vegan product offerings and consumers' inner motivations for consuming vegan products.

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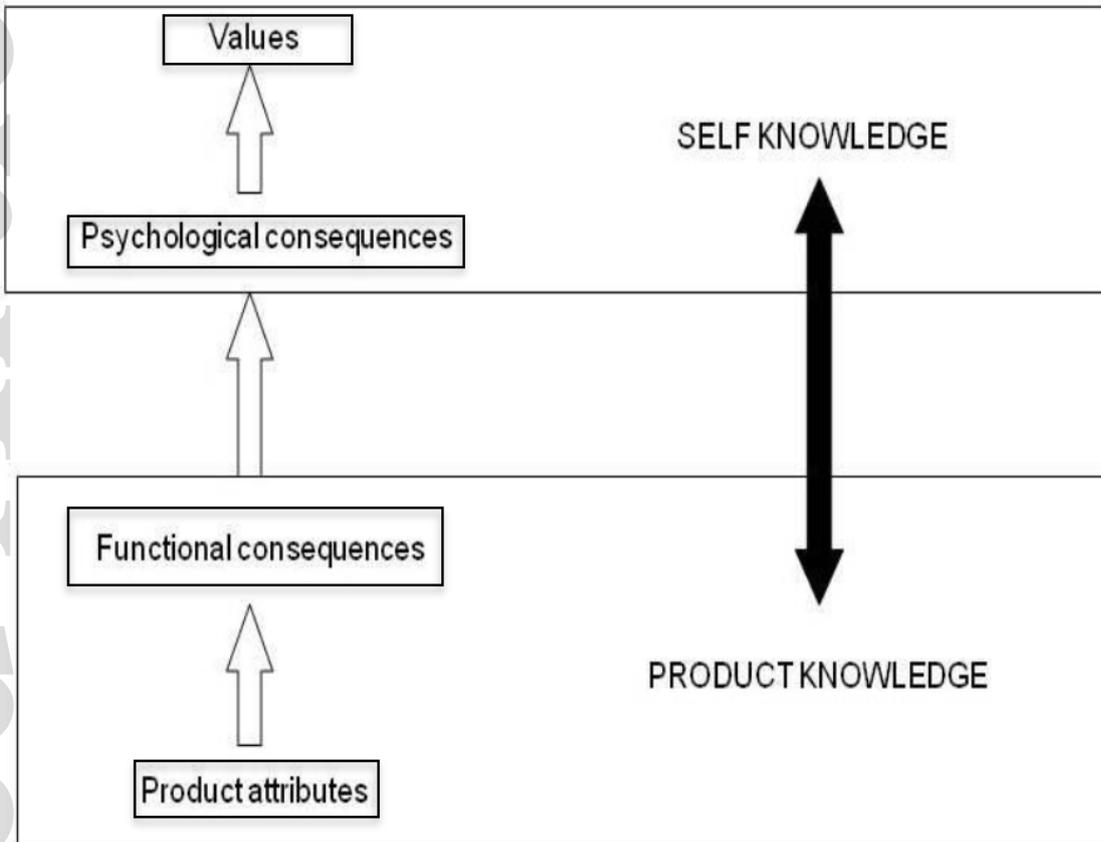


Figure 1. Means-End Chain framework

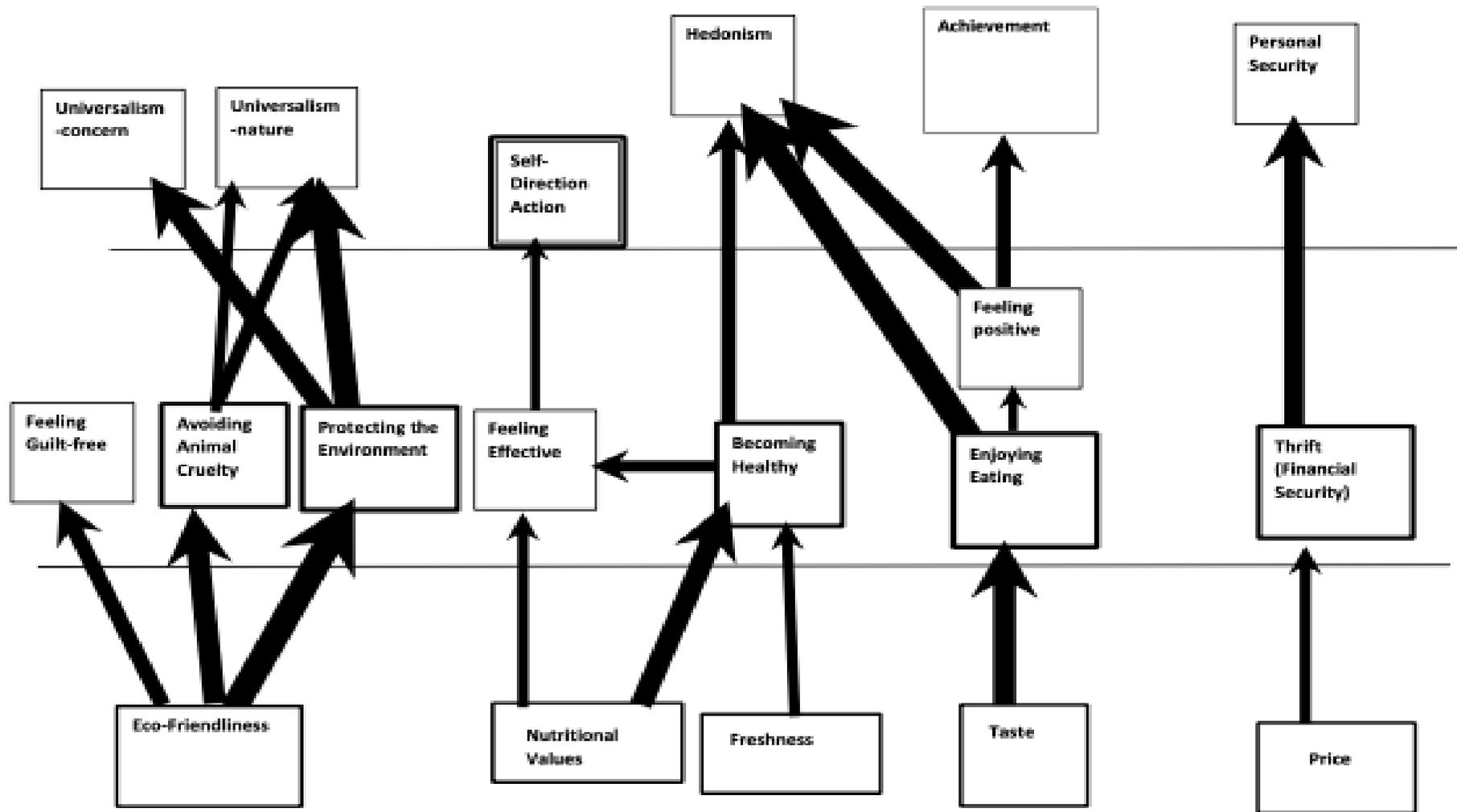


Figure 2. Hierarchical Value Map

Note: Cut-off point = 5 first row boxes identify product attributes; thick black squares identify psychological consequences; and double edge squares identify terminal values.

Table 1. Schwartz's (2012) nineteen values and their motivational goals

Value	Conceptual definitions based on motivational goals
Self-direction–thought	Freedom to cultivate one's own ideas and abilities
Self-direction–action	Freedom to determine one's own actions
Stimulation	Excitement, novelty, and change
Hedonism	Pleasure and sensuous gratification
Achievement	Success according to social standards
Power–dominance	Power through exercising control over people
Power–resources	Power through control of material and social resources
Face	Security and power through maintaining one's public image and avoiding embarrassment
Security–personal	Safety in one's immediate environment
Security–societal	Safety and stability in the wider society
Tradition	Maintaining and preserving cultural, family, or religious traditions
Conformity–rules	Compliance with rules, laws, and formal obligations
Conformity–interpersonal	Avoidance of upsetting or harming other people
Humility	Recognizing one's insignificance in the larger scheme of things
Benevolence–dependability	Being a reliable and trustworthy member of the in-group
Benevolence–caring	Devotion to the welfare of in-group members
Universalism–concern	Commitment to equality, justice, and protection for all

people

Universalism–nature

Preservation of the natural environment

Universalism–tolerance

Acceptance and understanding of those who are different from oneself

Source: Schwartz et al. (2012, p. 111).

Table 2. Findings of attributes, consequences, and values connected with plant-based diet.

Attributes (14)	Taste, nutritional value, Eco- and animal-friendly ingredients, ethicality, price, convenience (ease of cooking), quantity, local origin, freshness, peer recommendation, long-shelf life, product familiarity, availability, assortment (product diversity).
Consequences (13)	<i>Being healthy, protecting the environment, enjoyment from eating, avoiding animal cruelty, making social connections, feeling guilt-free, thrift (financial security), feeling positive, feeling efficient, looking good, feeling effective, contributing to public welfare, promoting sustainable business.</i>
Values* (19)	Self-direction action, <i>self-direction action</i> , stimulation, hedonism, achievement, power-dominance, <i>power-resources, face</i> , security-personal, security-societal, tradition, <i>conformity-rules, conformity-interpersonal</i> , humility, benevolence-dependability, benevolence-concern, universalism-concern, universalism-nature, universalism-tolerance.

Note: the text in italics identifies functional consequence and instrumental values. *Schwartz et al. (2012).

Table 3. Demographic characteristics of the sample

Demographic variables	Frequency (n=400)	Percent
Gender		
Male	95	23.8
Female	300	75.0
Other/Unwilling to disclose	5	1.3
Total	400	100.0
Nationality		
UK	235	58.8
USA	82	20.5
Other	83	20.8
Total	400	100.0
Vegan food purchase frequency		
Less than six times a year	5	1.3
Once a month	6	1.5
Once a week	48	12.0
More than once a week	216	54.0
Every day	125	31.3
Total	400	100.0
Length of being vegan		
For one year (or less)	83	20.8
For two years	125	31.3
For four years	86	21.5
For six years	30	7.5
For eight years	17	4.3
For ten years (or more)	57	14.3
I have always been a vegan dieter	2	.5
Total	400	100.0

The mean age of the sample consumers was 36 years (mean age: 36, SD = 10.30). The majority (54%) of these consumers purchased vegan products more than once a week, and 52.1% of them have been vegan for up to two years.

Reliability and validity of measures

Reliability of the motivation factors was assessed by Cronbach's Alpha and composite reliability as shown in Table 4.

Table 4. Composite reliability, Average Variance Extracted, correlations

	CR	AVE	ACC	ECO	ETH	HEL	HED	AEMP	ARIGHTS
Accountability (ACC)	0.76	0.52	(0.72)						
Economic motives (ECO)	0.91	0.78	0.09	(0.88)					
Ethical motives (ETH)	0.76	0.52	0.54	0.12	(0.72)				
Health motives (HEL)	0.91	0.73	0.20	0.23	0.31	(0.85)			
Hedonic motives (HED)	0.79	0.56	0.38	0.27	0.51	0.59	(0.75)		
Animal empathy (AEMP)	0.89	0.63	0.48	0.00	0.65	0.06	0.32	(0.79)	
Animal rights (ARIGHTS)	0.87	0.58	0.49	0.04	0.61	0.05	0.38	0.67	(0.76)

CR = Composite reliability; AVE = Average Variance Extracted, Squared AVEs in in bracket.

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Table 5. Descriptive statistics, reliability, and construct validity of the motivating factors.

Motivations	Items	Factor Loadings	Mean	Std. Dev	Cronbach Alpha	Composite Reliability	AVE
Economic Motives			2.83	1.50	0.90	0.92	0.79
Econom1	They are less expensive than other food products.	0.95					
Econom2	They allow me to save money.	0.97					
Econom3	They make me feel safe from an economic point of view.	0.71					
Ethics Motives			6.11	0.98	0.73	0.76	0.52
Ethic1	I do not feel guilty when I eat these products.	0.69					
Ethic2	They are produced without harming animals.	0.81					
Ethic3	They are environmentally friendly products.	0.64					
Health Motives			5.53	1.19	0.90	0.92	0.73
Health1	They are healthier and more nutritious than other food products.	0.88					

Health2	I want to be healthy.	0.84					
Health3	They make me feel well.	0.94					
Health4	They make me feel effective.	0.73					
Hedonic Motives			5.83	1.06	0.79	0.80	0.57
Hedon1	I enjoy these products' tastes and flavors.	0.78					
Hedon2	They are fresh food products.	0.71					
Hedon3	They please me.	0.75					
Animal Empathy Motives			6.43	0.82	0.89	0.89	0.63
AnimEmp1	I am sympathetic to animals suffering.	0.79					
AnimEmp2	I can relate to the feelings animals are going through.	0.65					
AnimEmp3	I am very concerned about pain and suffering in animals	0.90					
AnimEmp4	I care about animals and other creatures.	0.89					
AnimEmp5	I have feelings toward animals.	0.69					
Animal Right Motives			6.25	0.96	0.87	0.87	0.59
AnimRig1	Animal live 'with us', not 'for us'.	0.79					
AnimRig2	Human beings are not superior to other animal species.	0.76					
AnimRig3	Humans do not have the right to kills or use	0.85					

	animals.						
AnimRig4	Animals have the right to live.	0.79					
AnimRig5	Animals should be granted the same rights as humans.	0.58					
Accountability Motives			6.14	0.89	0.75	0.76	0.52
Account2	I consider the consequences of my actions to the broader society.	0.67					
Account3	I am conscious of the impact of my consumption activities on the planet.	0.84					
Account4	I think the world is the outcome of our behaviours.	0.63					

Appendix A: Interviewees' Profile

	Pseudonym	Years Vegan	Gender	Age	Education	Profession	Marital Status
1	Rachael	6.5	F	53	O-levels	Self-employed	Married
2	Rose	0.5	F	25	Post-graduate	Student	Single
3	Sarah	1	M	34	Master's degree	Part-time	Single
4	Noah	5	M	35	Doctorate	Academic	Married
5	Sally	36	F	55	Post-graduate	Mental health nurse	Married
6	Fraser	3	M	30	College graduate	Bar staff	Single
7	Evita	3	F	36	Bachelor's degree	Self-employed	Married
8	Dan	1	M	39	BTEC National Diploma	Taxi driver	Married
9	Daisy	1.5	F	33	Bachelor's degree	Customer experience manager	Living with partner
10	Georgie	3	F	31	Bachelor's degree	IT administrator	Married
11	Greta	4	F	35	Master's degree	Project manager	Single
12	Jenny	3	F	42	Bachelor's degree	Engineer	Living with partner

13	Kate	4	M	38	Master's degree	Hairdresser	Living with partner
14	Trish	10	F	30	PhD	Academic	Living with partner
15	Linda	21	F	34	PhD	Academic	Married
16	Rayan	5	F	38	Master's degree	Doctor	Married
17	Loretta	10	F	30	PhD	Academic	Living with partner
18	Samuel	8	M	32	Bachelor's degree	Manager	Married
19	James	4	M	44	Bachelor's degree	Healthcare professional	Married
20	Patrick	8	M	36	Master's degree	Teacher	Living with partner

As shown above, 12 of the 20 respondents were female and 8 were male. The majority of them had been vegan for at least 3-5 years and were either married or living with a partner. Moreover, seven respondents held a master's degrees 6 had a bachelor's degree and 4 had a PhD. The vast majority of respondents (18) were employed in different professional settings ranging from healthcare to customer experience managers.