Validation and application of a German version of the Dietarian Identity Questionnaire: Revealing differences between omnivores, vegetarians, and vegans

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ABSTRACT

The Dietarian Identity Questionnaire (DIQ; Rosenfeld & Burrow, 2018) assesses how an individual thinks, feels, and behaves regarding the consumption or eschewal of animal products. This instrument offers a useful method for understanding how omnivores, vegetarians, and vegans alike construct their eating behaviours. In the current study ($N = 961$), we validated a German translation of the DIQ – the DIQ-D – and compared the dietarian identity profiles of omnivores, vegetarians, and vegans. Confirmatory factor analyses replicated the factor structure reported for the DIQ in English-speaking samples. Compared to omnivores, vegetarians considered their diet to be more central to their overall sense of identity, felt stronger motivations to follow their diet, adhered to their diet more strictly, evaluated their dietary in-group more favourably, evaluated their dietary out-group more negatively, and felt as though their dietary in-group was judged more negatively by others. For all of these effects, vegans reported more extreme scores than did vegetarians. Exploratory analyses of more nuanced dietary subgroups revealed differences in dietarian identity profiles between vegans who consume honey versus vegans who eschew honey and between pescetarians who self-identify as vegetarians versus pescetarians who do not. Our findings suggest that the DIQ-D offers a valuable method for identifying psychological correlates of people's dietary relationships with animal products.

1. Introduction

Vegetarianism is becoming an increasingly salient part of dietary norms in Germany. According to a representative survey conducted by the German Ministry of Food and Agriculture (*Bundesministerium für Ernährung und Landwirtschaft, BMEL*), 6% of the German population follows a vegetarian diet (i.e., eschews meat) and 1% follows a vegan diet (i.e., eschews all animal products). Beyond this, a much larger 35% of the population finds it important that food packages display information on whether or not a product is vegetarian/vegan. Moreover, the number of people who consume meat every day declined from 34% in 2015 to 28% in 2018, and 38% of people surveyed in 2018 reported being open to buying plant-based meat substitute products (forsa Politik- und Sozialforschung GmbH, 2018). These figures highlight that, although vegetarians and vegans remain a rather small segment of the total population in Germany, consumer interest in plant-based diets is substantial and growing.

Paralleling this development, psychological research on vegetarianism is expanding as well. Researchers have started to address questions regarding what differentiates people who choose a plant-based diet from those who eat meat, what underlying motivations lead to such different food choices, and what implications an individual's particular dietary style has for his or her sense of identity (Rosenfeld, 2018; Ruby, 2012).

There is a substantial number of qualitative interview studies assessing vegetarian motivations (Bisogni et al., 2002; Fox & Ward, 2008; Romo & Donovan-Kicken, 2012). Conversely, quantitative research on the topic is much sparser. A key reason for this may be that operationalisations that allow systematic empirical investigations of food choices and related psychological processes have been lacking. In response to the need of validated instruments, Renner et al. (2012) developed The Eating Motivation Survey (TEMS), a questionnaire to investigate everyday food choices. The TEMS captures fifteen basic eating motives in order to explain why people choose to eat what they eat.

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Lyerly and Reeve (2015) followed a similar approach and introduced a scale to measure food choices values. In order to address the question of the meaning of food in life, Arbit et al. (2017) developed the Meaning of Food in Life Questionnaire (MFLQ). Although useful for a wide range of important research questions, these scales do not capture the psychological meaning of how food choices relate to identity, nor do they offer precise ways of assessing the underlying motivations and meanings of plant-based dieting (i.e., vegetarianism and veganism).

A popular framework in investigations of plant-based dietary motivations is the distinction between ethically motivated and health-motivated vegetarians (Hoffman et al., 2013). In this framework, concerns about animal welfare or ecological/environmental impacts of meat consumption are subsumed under ethical motivations, whereas health motivations comprise concerns about personal health and weight (Rosenfeld & Burrow, 2017b). However, as Rosenfeld and Burrow (2017b) have pointed out, the ethical-health approach poses several notable shortcomings that limit its psychological versatility. One limitation is its oversimplification, as it cannot distinguish between specific types of ethical and health motivations, nor can it adequately capture cases in which individuals have multiple different motivations for choosing a plant-based diet.

In order to enable more detailed and comprehensive investigations of plant-based dieting from a psychological perspective, Rosenfeld and Burrow (2017a) introduced the Unified Model of Vegetarian Identity (UMVI), "a conceptual framework for understanding the role of vegetarianism in an individual's self-concept" (Rosenfeld & Burrow, 2017a, p. 81). Going beyond the level of food choices, the UMVI conceptualises vegetarianism as a form of social identity, defining *vegetarian identity* as "an individual's thoughts, feelings, and behaviours regarding being vegetarian" (Rosenfeld & Burrow, 2017a, p. 80). The model comprises ten dimensions organised into three levels: Contextual dimensions (historical embeddedness, timing, and duration), externalized dimensions (dietary pattern, label and strictness), and internalized dimensions (salience, centrality, regard, and motivation). Taken together, these ten dimensions represent measurable components of a vegetarian identity, thus enabling its psychometric assessment.

In order to expand the UMVI's conceptualisation to all groups of dieters, beyond simply vegetarians, Rosenfeld and Burrow (2018) have proposed that vegetarian identity falls within a broader overarching identity domain called *dietarian identity* - "an individual's thoughts, feelings, and behaviours regarding consuming or eschewing animal products" (Rosenfeld & Burrow, 2018, p. 183). As an instrument to assess not only vegetarian identity, but dietarian identity in all of its forms, Rosenfeld and Burrow (2018) developed the Dietarian Identity Questionnaire (DIQ). Based on the UMVI, the DIQ comprises eight multi-item scales of centrality, private regard, public regard, out-group regard, prosocial motivation, personal motivation, moral motivation and strictness.[1] An overview of the conceptual definitions of these scales is displayed in Table 1.

Often, one might think about vegetarians as having a dietarian identity that omnivores lack. For example, vegetarians deviate from the social norm of eating meat, which makes their diet a more salient and defining part of their identity, thus leading them typically to adopt a label (i.e., self-identifying as "vegetarian"). Because omnivores, to the contrary, *adhere* to social norms, the fact that they eat meat does not typically arise any need for them to explicitly label themselves and identify as omnivores. However, as Rosenfeld and Burrow (2018) emphasize, possessing an identity transcends beyond one's self-identified label. One can have an omnivorous identity without labelling oneself in this way, or in any way. Omnivorous identity may simply be less salient

and less central to one's sense of self, given its socially normative status. Nevertheless, one's status as an omnivore may become a meaningful part of one's identity when one encounters a vegetarian. In a social context that includes both omnivores and vegetarians, heightened salience of food choice can make one's diet a marker of social group membership. Through a self-categorization theory lens (Turner et al., 1987), the basis for self-categorization can readily shift depending on social context, at times making the fact that an omnivore *does* include all foods in their diet a defining aspect of their identity—one that sets them apart from other people.

Due to the detailed capture of individuals' dietary pattern as the combination of animal products (red meat, poultry, fish, eggs, and dairy) they generally include in or exclude from their diet, the DIQ can measure dietarian identity among individuals in all dietary groups across the spectrum from omnivore to vegan. Restricted (e.g., lacto-ovo-vegetarian, vegan, pescetarian) as well as unrestricted (omnivorous) diets can be examined with regard to the underlying motivations, social implications and behaviours forming the respective dietarian identity. To capture these idiosyncrasies, in completing the DIQ, respondents first indicate their dietary pattern as a combination of what animal products they usually eat and do not eat. Then, they rate their agreement with 33 items belonging to the eight DIQ subscales on 7-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree). These items are phrased with regard to the participant's own dietary pattern, as to capture how one thinks about one's own specific diet.

In validation studies by Rosenfeld and Burrow (2018), the DIQ showed satisfactory psychometric properties (internal consistencies, factor structure, construct validity, test–retest reliability, and replicability) in United States samples of individuals who follow a variety of dietary patterns. In addition, validation of the DIQ in a purely vegetarian sample also revealed its sound psychometric properties (Rosenfeld, 2019b). We believe that the DIQ can offer a valuable instrument for understanding the psychology of eating behaviour in Germany; however, the DIQ has yet to be validated – or even administered – in any language other than English. Accordingly, the present study aimed to validate a German version of the DIQ in order to provide a psychometrically sound instrument to study dietarian identity in German-speaking populations.

Previous studies have pointed out remarkable differences in values, personality, and attitudes between different dietary groups in Western cultures (for reviews see Rosenfeld, 2018; Ruby, 2012). For instance, vegetarians tend to hold more liberal values and are more open to new experiences, whereas meat eating is associated with a more conservative attitude and the preservation of traditional values (Pfeiler & Egloff, 2018; Ruby, 2012). Differences even exist within subgroups of plant-based dieters: Comparing vegetarians and vegans, Kessler et al. (2016) found that vegans have more open and compatible personality traits, are more universalistic and empathic, as well as more ethically oriented than vegetarians are.

The use of the DIQ has expanded this research by identifying valuable new findings on the correlates of what diet people follow. First, Rosenfeld and Burrow (2018) found that vegetarians differed significantly from omnivores on all DIQ scales, scoring higher on centrality, private regard, all three motivational scales, and strictness, but lower on public and out-group regard. This suggests that for vegetarians, dietarian identity is more important to their self-concept than it is for omnivores. Vegetarians also have stronger personal, prosocial, and moral motives for adhering to their diet and adhere to their diet more strictly than do omnivores. Furthermore, as compared to omnivores, vegetarians showed higher in-group regard, evaluated people who do not follow their dietary pattern less favourably, and felt that their own dietary group is evaluated more negatively by out-group members. Second, as Rosenfeld (2019a) reports, vegetarians and vegans show different dietarian identity profiles as well. Vegans exhibited higher centrality, higher prosocial, personal, and moral motivations, higher private regard, lower public, and out-group regard. These studies

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[1] For the remaining UMVI dimensions not covered by the DIQ items (historical embeddedness, timing, duration, salience, dietary pattern, and label), Rosenfeld and Burrow (2018) recommend that assessment is adapted to the specific research question of the investigator.

Table 1
Conceptual definitions of dietarian identity variables, assessed by the DIQ (table adapted from Rosenfeld, 2019b).

Variable	Conceptual definition
Centrality	The extent to which one views following one's dietary pattern as a predominant feature of one's self-concept
Private Regard	One's personal feelings toward following one's dietary pattern and toward other people who also eat this way
Public Regard	One's feelings about how dietary out-group members and the larger society evaluate those who follow one's dietary pattern
Out-Group Regard	One's evaluation of people who follow a dietary pattern that differs from one's own
Prosocial Motivation	The extent to which a desire to benefit something beyond oneself is a reason for following one's dietary pattern
Personal Motivation	The extent to which a desire to benefit oneself is a reason for following one's dietary pattern
Moral Motivation	The extent to which beliefs about rightness and wrongness is a reason for following one's dietary pattern
Strictness	The extent to which one adheres to one's dietary pattern

suggest that the more restrictions a dietary pattern involves, the stronger the motivations are to follow this dietary pattern and the greater the importance of the diet is for one's identity. The higher centrality of the dietarian identity seems to go along with a stronger distinction of in-group and out-group members, which appear in form of more positive evaluations of people who follow the same dietary pattern as oneself and more negative evaluations of others.

Recent research has also used the DIQ for research questions beyond dietary pattern correlates. For instance, two studies have shown that specific dietarian identity factors are related to how pescetarians (Rosenfeld & Tomiyama, 2019) and flexitarians (Rosenfeld et al., 2020) subjectively self-identify as vegetarian. Other studies have compared dietarian identity profiles between vegetarian men and women (Rosenfeld, 2020) and evaluated links between vegetarians' dietary motivations, feelings of disgust toward meat, and levels of dietary adherence (Rosenfeld, 2019c).[2]

This young literature highlights value in using the DIQ, yet the potential to use the DIQ cross-culturally remains limited, as it has only been validated in English-speaking U.S. samples. Particularly of interest in building a multicultural empirical literature on plant-based dieting is to ensure psychometric rigor in measurement, as the validity of any research findings may be only as valid as are the measures that yielded them. Differences in the psychometric properties of a measure may emerge in translation into another language, making it critical to validate the scale in any new language before using it in research. As the first attempt to expand the use of the DIQ beyond English-speaking populations, we set to validate this questionnaire in a sample of German-speaking individuals. In doing so, we hope to advance research on eating behaviour in Germany methodologically while also providing initial key DIQ data on dietary groups within this population.

1.1. Hypotheses

In addition to validating the DIQ for the use in German-speaking samples, this study aims to extend existing research on differences between dietarian identity profiles of omnivores, vegetarians, and vegans by

providing a comparison of all three groups simultaneously. Based on previous findings, we expected higher scores on centrality; personal, prosocial, and moral motivations; and in-group/private regard the more restrictive one's dietary pattern is – in other words, vegans, who eschew all animal products, should score higher than vegetarians, who only eschew meat; vegetarians, furthermore, should score higher than omnivores. Regarding out-group and public regard, we expected lower scores, the more restrictive one's dietary pattern is. Beyond differences regarding the scales of the DIQ, we also tested for ecological welfare concern (Lindeman & Väänänen, 2000). We predicted that the dietary groups would show different levels of ecological welfare concern. We expected vegetarians and vegans to report higher ecological welfare concern than omnivores (Ruby et al., 2013), as well as vegans to report higher concern than vegetarians.

2. Methods

2.1. Materials

2.1.1. German version of the Dietarian Identity Questionnaire

The German version of the Dietarian Identity Questionnaire (DIQ) constituted the core part of the study. The original DIQ (Rosenfeld & Burrow, 2018) has been developed to assess thoughts, feelings, and behaviours related to the consumption or abandonment of animal products within any chosen dietary pattern. The German version, the DIQ-D, is designed analogously with the small exception of adding honey to the categories of animal products in the dietary pattern. The DIQ-D is presented for the first time in the context of the present study.

For the purpose of assessing German-speaking samples, we translated the DIQ into German. The translation process was guided by the 'TRAPD' (Translation, Review, Adjudication, Pretest, Documentation) procedure for questionnaire translation (see Harkness et al., 2003): Two independent translations were made, one from a professional translator and one from a German native speaker living in an English speaking country. We discussed and reviewed these translations as adjudicators and combined them into a final version, which was then pretested for comprehensibility within a small sample. The items of the final version of the DIQ-D can be found in the Appendix A.

2.1.2. Additional DIQ items

To enable future users of the DIQ-D to measure also the contextual UMVI dimensions Timing, Duration and Historical Embeddedness, as well as the externalized dimension Label, six additional items were added to the original DIQ items. As the contextual dimensions were not of interest in the present study, these items are only included as a suggestion for the use in future studies (additional items 1 to 4 in Appendix A). Furthermore, a single-choice item that captures the main motivation for the dietary pattern in question was formulated (additional item 7 in Appendix A). Here, participants could choose between taste, health, habit, medical necessity, religion/spirituality, weight gain or loss, ecological reasons, animal welfare, financial reasons, solidarity with others, or other reasons.

2.1.3. Ecological welfare scale

A German translation of the Ecological Welfare Scale (Lindeman & Väänänen, 2000) was used to assess concerns about ecological aspects when purchasing and consuming food products. This scale has been developed as a complementary scale to the Food Choice Questionnaire (Steptoe et al., 1995). In the present study, only the subset of five items concerning animal welfare and environmental protection had to be answered on a scale ranging from 1 (not at all important) to 4 (very important).

2.2. Study procedure

This study was approved by the local ethics committee. Participants were first informed about the aims of the study, the conditions of participation, and data privacy. If they confirmed their consent and stated that they were of legal age and did not suffer from any eating

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[2] To the best of our knowledge, the studies reviewed here are the only ones published that have used the DIQ thus far. As the DIQ has been introduced into the scientific literature very recently in 2018, all empirical studies implementing it have been conducted by Rosenfeld and colleagues. We recognize that this is a limitation to the current field's intellectual diversity and emphasize that there is much to gain from more widespread use of the DIQ across a variety of research teams.

disorder, the questionnaire began. First, they had to indicate their dietary pattern as the combination of animal products (red meat, poultry, fish, eggs, dairy, and honey) they generally exclude from their diet, and then answer the DIQ-D items in randomised order. After the DIQ-D, participants completed the Ecological Welfare Scale. Finally, participants answered some questions related to their socio-demographic background (e.g., age, educational level, family status). They were offered to receive a summary of the results by e-mail after the end of the study. No further compensation was paid. On average, participants completed the questionnaires in 19.69 min (SD = 6.19).

2.3. Participants

The study was conducted online via SoSciSurvey (Leiner, 2019). Participants were recruited via flyers and posters at the Universities of Bonn and Coblenz, on the trade fair 'veganfach' in Cologne, and in public places. Social media platforms as Facebook, Xing and Twitter, mailing lists, and the study platform SurveyCircle were used for online acquisition.

In total, 1010 participants completed the online study. Based on conspicuous response patterns, comments or a working time below 7.31 min (two standard deviations below the mean working time of 19.69 min) 21 participants were excluded. Additionally, 28 participants were excluded from the analyses because they named financial or medical reasons as the main motivation for their diet. According to Rosenfeld and Burrow (2017b), these reasons can be best conceptualized as constraints on one's ability to make food choices freely, rather than as motivations for voluntary food choices. Thus, data from a remaining 961 participants (769 female, 181 male, 11 other), ranging from 18 to 83 years in age (M = 32.00, SD = 12.20), were analysed. This sample size provided sufficient power for our main confirmatory factor analyses (based on Worthington & Whittaker, 2006 guidelines).

Dietarian groups were identified using the indicated combinations of animal products (red meat, poultry, fish, eggs, dairy, and honey) participants stated to generally exclude from their diet. *Omnivores* were defined as people who eat any sort of meat (red meat and/or poultry) and animal products; *pescetarians* as people who do not eat meat, but do eat fish and other animal products; and *vegetarians* as those who do not eat meat or fish but do eat eggs and/or dairy. Among people practicing veganism, the permissibility of eating honey is a grey area—some vegans eschew honey, as it is an animal product, whereas other vegans view honey as an acceptable part of a vegan diet (Greenebaum, 2012). Thus, it may be useful to distinguish vegans who eat honey from those who do not, as previous research has done (e.g., Hoffman et al., 2013). Therefore, the group of *honey-vegans* consisted of people excluding any sort of animal product except for honey from their diet, and the group of *vegans* consisted of those who eschew any sort of animal products including honey. Based on these definitions, the sample contained 319 (33.2%) omnivores, 46 (4.8%) pescetarians, 145 (15.1%) vegetarians, 63 (6.6%) honey-vegans and 388 (40.4%) vegans.

Another approach to cluster participants could have been to classify them based on how they label themselves. However, it has been shown in previous studies that self-designation of vegetarian status often does not reflect the actual eating behaviour (see Ruby, 2012), which also seemed to be the case in our sample (see Table 2). In order to keep the focus of our research on participants' dietary behaviours, we used what dietary pattern participants follow – rather than how participants subjectively label themselves – as our grouping variable.

Percentage of members of the dietary groups who label themselves as vegetarians, vegans, or neither vegetarians nor vegans.

Fig. 1 displays the main reasons to follow the chosen dietary pattern for each group respectively.

Analyses of differences between dietarian identity profiles focused on a comparison of omnivores, vegetarians, and vegans (for mean age and gender identity distribution per group, see Table 3). To be consistent with other studies, honey-vegans were added to the group of vegans for these analyses, as this specific subgroup is normally not

treated as a separate dietary group.

In order to provide findings concerning the other two, rather small, groups of pescetarians and honey-vegans, additional exploratory analyses of those are provided in Supplementary A (pescetarians) and Supplementary B (honey-vegans).

2.4. Data analysis

All data are freely available at the Open Science Framework (OSF)[3].

For validation of the German translation of the DIQ, we conducted a confirmatory factor analysis (CFA) using the lavaan package in R. Within this CFA, we specified the DIQ model in the same way as did Rosenfeld and Burrow (2018) and Rosenfeld (2019b). The model tested included eight distinct latent variables, which were the eight subscales of the DIQ: (1) centrality, (2) private regard, (3) public regard, (4) outgroup regard, (5) prosocial motivation, (6) personal motivation, (7) moral motivation, and (8) strictness. In this model, we assigned each of the 33 DIQ items to their respective factor, as outlined in Appendices A and B. Given the sample size dependence of χ^2 values (e.g., Kahn, 2006), we consulted additional goodness and badness of fit indices – namely the comparative fit index (CFI), the root-mean-square-error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR) for the evaluation of model fit. As a rule of thumb, a well-fitting model should provide a CFI close to or above 0.95, a RSMEA of < 0.06, and a SRMR of < 0.08 (Hu & Bentler, 1999; Kahn, 2006).

Cronbach's alpha served as a measure of the internal consistency for the DIQ-D scales and the Ecological Welfare Scale. For the purpose of construct validation of the DIQ-D scales, we aimed to replicate the structure of correlations that Rosenfeld and Burrow (2018) reported for the DIQ scales: Namely this refers to the pattern of bivariate intercorrelations between the DIQ-D scales as well as the observed correlation with ecological welfare. In case of missing values participants were excluded from the respective analyses. Since none of the measured constructs was normally distributed, Spearman's correlation coefficient was calculated.

In addition to the validation of the DIQ-D, we focused on differences in dietarian identity profiles between omnivores, vegetarians, and vegans. Potential differences in the DIQ scales and the Ecological Welfare Scale were examined by means of one-way analyses of variances (ANOVAs) with dietary pattern (omnivore, vegetarian, vegan) as the factor. Greenhouse Geisser correction for violation of sphericity was applied where appropriate. Significant effects in the ANOVAs were followed up by Bonferroni-corrected pairwise two-tailed *t*-tests.

3. Results

3.1. Validation of the DIQ-D: CFA, internal consistencies, and intercorrelations

The CFA conducted on the full sample revealed a good fit of the DIQ model with eight scales, χ^2 (467) = 1661.775, p < .001, CFI = 0.956, RMSEA = 0.052, SRMR = 0.049. The observed values are quite similar to those reported for the original English version of the DIQ (Rosenfeld & Burrow, 2018). In order to provide more detailed insights into the DIQ-D's fit among dietary subgroups, we conducted additional CFAs on the subsamples of omnivores and plant-based dieters (i.e., vegans and vegetarians). CFAs revealed good model fits for omnivores (χ^2 (467) = 956.75, p < .001, CFI = 0.925, RMSEA = 0.054, SRMR = 0.058) and a reasonable fit for plant-based dieters (χ^2 (467) = 1425.75, p < .001, CFI = 0.906, RMSEA = 0.058, SRMR = 0.054).

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[3] Link to original data (N = 1010) on osf: https://osf.io/72t3d/?view_only=7fb636e0b0604a4da4531de95a2adafcBesides the data analysed in the present study these include the Portrait-Values-Questionnaire (PVQ; Beierlein (2014), the Big-Five Inventory-10(BFI-10; Rammstedt (2013) and a political orientation scale (Carraro et al. (2011).

Table 2
Correspondence between label and dietary pattern, as proposed by the DIQ-D.

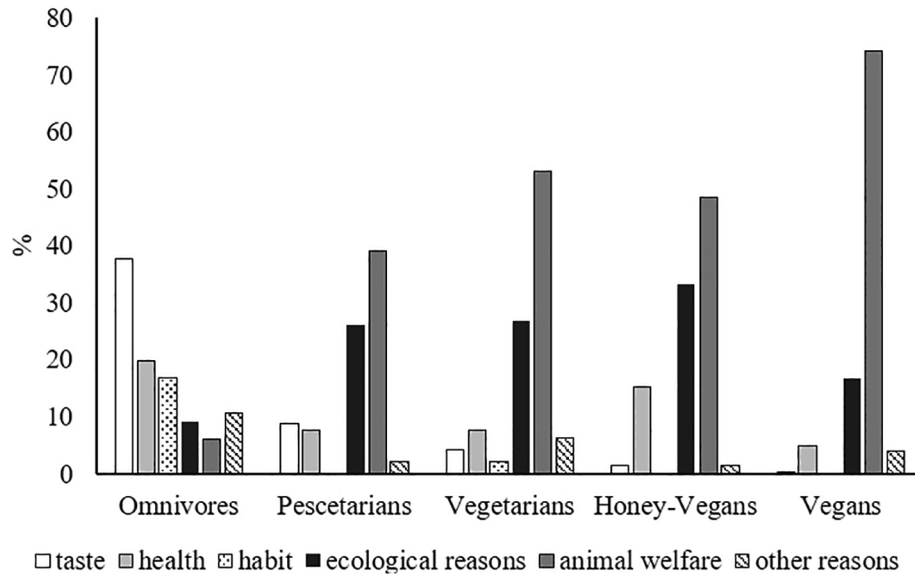|		Omnivores (*n* = 319)	Pescetarians (*n* = 46)	Vegetarians (*n* = 145)	Honey-Vegans (*n* = 63)	Vegans (*n* = 388)
"I label myself as…"	Vegetarian	0.6%	45.7%	93.1%	15.9%	2.1%
	Vegan	2.2%	4.3%	0.7%	76.2%	94.6%
	Neither	97.2%	50.0%	7.6%	7.9%	3.4%

Fig. 1. Main reasons to follow the different dietary patterns.

Table 3
Gender identity distribution in the dietary groups.

		Omnivores (*n* = 319)	Vegetarians (*n* = 145)	Vegans (*n* = 451)
Gender identity	Female	235 (73.67%)	127 (87.59%)	364 (80.71%)
	Male	82 (25.71%)	16 (11.03%)	80 (17.74%)
	Other	2 (0.62%)	2 (1.38%)	7 (1.55%)
Mean age (*SD*)		33.57 (14.40)	28.07 (9.41)	32.33 (10.72)

Table 4
Mean scale values, standard deviations and reliabilities (Cronbach's alpha) of the DIQ-D scales.

DIQ Scale	Mean (*SD*)	Cronbach's alpha
Centrality (5 items)	4.43 (1.64)	0.93
Private Regard (3 items)	4.78 (1.36)	0.77
Public Regard (3 items)	3.39 (1.65)	0.89
Out-group Regard (7 items)	4.64 (1.65)	0.94
Prosocial Motivation (6 items)	4.91 (1.70)	0.94
Personal Motivation (3 items)	4.96 (1.45)	0.74
Moral Motivation (3 items)	5.02 (1.96)	0.93
Strictness (3 items)	5.07 (1.89)	0.87

Internal consistencies were sufficiently high for all eight DIQ-D subscales, ranging from $\alpha = 0.74$ for personal motivation to $\alpha = 0.94$ for out-group regard and prosocial motivation (see Table 4 for all internal consistencies) as well as for the Ecological Welfare Scale ($\alpha = 0.86$).

For more details, descriptive statistics of all items, skewness indices, corrected item-total correlations and internal consistencies if items were removed are provided in Table B1 in the Appendix B.

We observed significant associations between the eight subscales of the DIQ-D (see Table 5) that pointed in the same direction as the ones reported previously for the DIQ (Rosenfeld & Burrow, 2018) but were generally stronger ($M_{diff} = 0.23$; $Min_{diff} = 0.02$ personal motivation with moral motivation; $Max_{diff} = 0.54$ public regard with private regard and private regard with strictness). Furthermore, all of the DIQ-D subscales were plausibly associated with ecological welfare (see Table 5).

3.2. Differences between omnivores, vegetarians, and vegans

To test for differences between dietarian identity profiles of omnivores, vegetarians, and vegans, we conducted ANOVAs and, when appropriate, follow up pairwise comparison tests.

For the DIQ-D dimensions, all ANOVAs conducted revealed a significant main effect of dietary pattern (see Table 6). Follow up Bonferroni-corrected pairwise *t*-tests revealed several differences between vegans, vegetarians, and omnivores that were well in line with what we expected. For centrality,

private regard, personal, prosocial, and moral motivation, we observed the graded pattern that was expected, such that a more restrictive dietary pattern corresponded to higher scores (centrality: all $t > 7.78$, all $p < .001$; private regard: all $t > 7.70$, all $p < .001$; personal motivation: all $t > 4.21$, all $p < .001$; prosocial motivation: all $t > 8.63$, all $p < .001$;. moral motivation: all $t > 10.55$, all $p < .001$). The same pattern of results – higher scores for vegans as compared to vegetarians and omnivores, and for vegetarians as compared to omnivores – also occurred for strictness (all $t > 3.86$, all $p < .001$). Conversely, also in line with our predictions, we observed lower scores of out-group and public regard as the restrictiveness of the dietary pattern increases – that is, declining scores from vegans to vegetarians, and from vegetarians to omnivores (out-group regard: all $t > 8.94$, all $p < .001$; public regard: all $t > 6.18$, all $p < .001$).

4. Discussion

4.1. Validation of the DIQ-D

With the present study, we aimed to provide a psychometrically

Table 5
Bivariate correlations of the DIQ-D subscales and ecological welfare.

	Cen.	Priv.	Pub.	Out.	Pro.	Per.	Mor.	Stric.
Centrality								
Private Regard	0.71*							
Public Regard	−0.51*	−0.50*						
Out-Group Regard	−0.65*	−0.66*	0.51*					
Prosocial Motivation	0.69*	0.71*	−0.56*	−0.66*				
Personal Motivation	0.50*	0.46*	−0.29*	−0.31*	0.48*			
Moral Motivation	0.70*	0.73*	−0.60*	−0.74*	0.83*	0.40*		
Strictness	0.50*	0.49*	−0.40*	−0.52*	0.52*	0.20*	0.61*	
Ecological Welfare	0.46*	0.46*	−0.31*	−0.40*	0.54*	0.38*	0.50*	0.38*

* $p < .001$; $N = 961$, $df = 959$.
Cen. = Centrality, Priv. = Private Regard, Pub. = Public Regard, Out. = Out-Group Regard, Pro. = Prosocial Motivation, Per. = Personal Motivation, Mor. = Moral Motivation, Stric. = Strictness.

sound instrument for investigating the intersections of food choices and identity in German-speaking populations. Given the decline of meat consumption and the growing interest in meat substitutes and plant-based foods in the German population (forsa Politik- und Sozialforschung GmbH, 2018), psychological and consumer research is increasingly interested in phenomena surrounding these developments. For English-speaking populations, the DIQ (Rosenfeld & Burrow, 2018) enables researchers to investigate various dietary groups in terms of their dietarian identity. Theoretically based on the UMVI (Rosenfeld & Burrow, 2017a), the DIQ measures how people think, feel and behave in the context of animal-product consumption or avoidance.

Here, we present the DIQ-D – a German translation of the DIQ, and the first translation of the DIQ into *any* language beyond English. The DIQ-D showed satisfactory psychometric properties. Confirmatory factor analyses revealed a good model fit comparable to the one of the DIQ, suggesting similar structures of the English and the German version of the DIQ. Internal consistencies (ranging from 0.74 to 0.94) were also comparable to those of the DIQ (max. $\Delta\alpha = 0.13$ for personal motivation).

4.2. Differences between omnivores, vegetarians, and vegans

In addition to the validation of the DIQ-D, our data allowed us to compare the dietarian identities of different dietary groups. In order to extend previous findings on differences between omnivores, vegetarians, and vegans in the U.S. (Rosenfeld, 2019a; Rosenfeld & Burrow, 2018), we compared these groups on the DIQ-D scales. Based on the results obtained in U.S. samples, we expected higher scores on centrality; personal, prosocial, and moral motivations; and private regard the more restrictive one's dietary pattern is. For public regard and out-group regard, the opposite pattern was anticipated. Results supported our hypotheses, as omnivores, vegetarians, and vegans differed from each other in the expected directions.

Furthermore, differences in strictness (i.e., dietary adherence) were significant, such that strictness was higher in vegetarians as compared to omnivores and in vegans as compared to either vegetarians or omnivores. Thus, our data plausibly suggest that the more animal products one excludes from his or her diet, the more important food choices are psychologically for one's sense of identity (higher centrality) and the more strictly one adheres to one's dietary rules. Moreover, a more restrictive diet seems to be motivated more strongly by personal, prosocial, and moral reasons. Omnivores, vegetarians, and vegans also differed in their evaluation of in-group and out-group members. Compared to vegetarians, vegans evaluated their in-group members more positively (private regard) and judged out-group members more negatively for eating animal products (lower out-group regard). Omnivores seemed to have less positive feelings towards other omnivores than vegetarians and vegans have for their own in-groups, respectively. Omnivores also judged dietary-restrictive groups less negatively for avoiding animal products than plant-based dieters judged omnivores for eating them. In contrast to this, more restrictive dietary groups reported lower public regard, that is, a more negative impression of how their own group is judged by others.

Going beyond comparisons of dietarian identity, we expected omnivores, vegetarians, and vegans to report different levels of ecological welfare (Ruby et al., 2013). As expected, the groups all differed significantly from one another. Vegans scored highest on the ecological welfare scale (Lindeman & Väänänen, 2000), followed by vegetarians, and lastly omnivores. These results are well in line with prior findings (Ruby et al., 2013) and the above mentioned motivation data displaying that vegans (and honey-vegans) most often reported ecological concern or animal welfare as their main motivation to be vegan.

4.3. Cross-cultural comparisons of dietarian identity

As we are first, to our knowledge, to use the DIQ (or, more specifically,

Table 6
DIQ-D differences between omnivores, vegetarians, and vegans.

	Omnivores ($n = 319$)	Vegetarians ($n = 145$)	Vegans ($n = 451$)	*F*-value	*p*-value	η_p^2
	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)			
Centrality	3.16 (1.42)	4.26 (1.39)	5.41 (1.17)	282.91	< 0.001	0.38
Private Regard	3.68 (1.20)	4.84 (1.05)	5.58 (0.99)	290.97	< 0.001	0.39
Public Regard	4.58 (1.51)	3.65 (1.50)	2.37 (1.06)	272.33	< 0.001	0.37
Out-group Regard	5.96 (1.16)	4.85 (1.41)	3.60 (1.66)	323.79	< 0.001	0.42
Prosocial Motivation	3.16 (1.40)	5.26 (1.71)	6.03 (0.84)	625.25	< 0.001	0.58
Personal Motivation	4.27 (1.46)	4.88 (1.38)	5.43 (1.30)	67.51	< 0.001	0.13
Moral Motivation	2.88 (1.43)	5.44 (1.28)	6.43 (0.86)	890.39	< 0.001	0.66
Strictness	3.32 (1.49)	5.72 (1.53)	6.19 (1.18)	437.80	< 0.001	0.49

$df = 2, 912$.
As expected, the ANOVA performed on ecological welfare also revealed significant group differences, $F(2, 912) = 166.65$, $p < .001$, $\eta_p^2 = 0.27$. Omnivores ($M = 3.05$, $SD = 0.68$) showed significantly lower ecological welfare scores than either vegetarians ($M = 3.56$, $SD = 0.43$), $t(462) = 8.34$, $p < .001$, $d = 0.90$, or vegans ($M = 3.71$, $SD = 0.35$), $t(762) = 17.63$, $p < .001$, $d = 1.22$. Vegetarians and vegans also differed significantly from one another, $t(594) = 4.20$, $p < .001$, $d = 0.38$, with vegans scoring higher than vegetarians.

its German adaption, the DIQ-D) outside the U.S., our data provides a first insight into cross-cultural similarities with regards to the construct of dietarian identity. We replicated the differences in dietarian identity between vegetarians and omnivores reported by Rosenfeld and Burrow (2018) as well as those between vegetarians and vegans (Rosenfeld, 2019a). Extending prior work, we realized an integrated comparison of all three groups – that is, omnivores, vegetarians, and vegans – within one study. Even though not concretely realized previously, a holistic view of the previous studies suggests that the graded pattern of dietary restriction that we observed in a German sample might also account for the U.S. (Rosenfeld, 2019a; Rosenfeld & Burrow, 2018). Our results of plant-based dieters reporting higher ecological welfare concern as compared to omnivores are also well in line with previous observations in North America (Ruby et al., 2013). As Germany and the U.S. are both countries of Western culture, these similarities are not surprising. Ruby et al. (2013) pointed out that vegetarianism in the Western world has developed as a countercultural dietary practice, mainly motivated by concerns about the killing of animals, personal health and environmental sustainability. In light of our data, this seems to be a well-fitting characterisation of plant-based dieting in the U.S. and Germany as well. Future research, investigating the dietarian identity of different dietary groups in other cultural contexts than the West could reveal interesting findings on cross-cultural similarities and differences as well as the cross-cultural validity of the DIQ's psychometric properties.

4.4. Strengths and limitations of the present study

Besides being restricted to the Western culture, another limitation of the present study that comes with the sample is the lack of representativeness due to the self-selection of participants. As this study was promoted as an online survey on personality, values, and beliefs of different dietary groups, it might have attracted individuals who tend to attach high importance to their food choices. This might be particularly true for plant-based dieters, and especially vegans, who are generally overrepresented in the sample ($n = 319$ omnivores, $n = 145$ vegetarians, $n = 451$ vegans). Moreover, omnivores who took the time to answer a questionnaire on the topic of consuming animal products might not be representative of the 'typical meat-eater'. Thus, when interpreting our results, one should note that effects of self-selection may have led to an unrepresentative sample and reduce generalizability of effect.

Instead of relying on participants' self-identification as vegetarians or vegans, we chose to categorize dietary groups based on participants' indicated dietary pattern (i.e. the combination of animal-products one includes or excludes from his or her diet). This allowed us to group individuals based on their actual food choices. Previous research (Ruby, 2012), as well as our data (see Table 2), have shown that self-identification (or label) and actual eating behaviour do not always coincide. The chosen approach of clustering by means of the indicated dietary pattern provided further interesting information as it allowed us to differentiate not only between the common dietary groups of omnivores, vegetarians, and vegans, but to identify additional subgroups, namely honey-vegans and pescetarians. With respect to the subgroup of pescetarians, exploratory analyses (see Supplementary A) revealed further remarkable variance in the dietarian identity profiles even within individuals who share the same (i.e. pescetarian) dietary pattern, simply depending on whether they self-identified as vegetarians or not. Specifically, pescetarians who self-identified as vegetarians differed from pescetarians who did not self-identify as vegetarians with regard to centrality, out-group regard, and strictness (also see related findings by Rosenfeld & Tomiyama, 2019). These results point to the value of further differentiation in eating behaviour research that considers both actual food choices and how individuals subjectively identify (i.e. label) themselves.

4.5. Future directions

Our study provides the first evidence that the DIQ-D can be useful to investigations of the relationship between food choices and identity in German-speaking areas. Its promising psychometric properties still need replications and further examinations that confirm reliability and construct validity. To gain deeper insights into cross-cultural comparisons, future research would benefit from testing for measurement invariance in dietarian identity assessment across languages and cultures. Incorporating perspectives from cultural psychology to interpret these comparisons meaningfully and with *a priori* predictions would be valuable. Moreover, investigations drawing a line from the self-reported dietarian identity to actual behaviour would be of interest. In particular, future research could focus on associations of dietarian identity to cognitive and motivational aspects of food choices as well as long-term aspects of dietary behaviour. For instance, dietarian identity could affect attentional processing of food cues as it has been shown for different dietary groups (Stockburger et al., 2009), decision-making processes in the context of food choices (e.g., actual food purchases), or approach and avoidance tendencies. The use of neurophysiological methods could also be of great value in order to uncover differences in the attentional and affective processing of food stimuli in combination with dietarian identity. Some studies have already demonstrated the value of periphal psychological and electrophysiological measures for investigations of different dietary groups (Anderson et al., 2019; Giraldo et al., 2019; Stockburger et al., 2009).

One great advantage of the DIQ and the DIQ-D is that they are not restricted to one specific dietary pattern but instead can be used to investigate dietarian identities across all levels of animal product consumption. Here, we mainly focused on omnivores, vegetarians, and vegans, as these are three common groups of interest and in order to be consistent with previous studies (Rosenfeld, 2019a, 2019b; Rosenfeld & Burrow, 2018). However, a more comprehensive view requires taking a closer look at more nuanced subgroups, such as honey-vegans or pescetarians in future studies.

Lastly, we note that dietarian identity – like many aspects of eating behaviour – is flexible and can change over time. As dietary motivations might evolve over the lifespan and individuals might alter their food choices (Ruby et al., 2013), dietarian identity should best be understood in terms of a developmental perspective (Rosenfeld & Burrow, 2017a). In this view, long-term studies on the development of dietarian identity, especially in individuals changing their food choices (e.g., from eating meat to being vegetarian or from being vegetarian to vegan), would be of great value. Furthermore, in the light of recent events and debates about climate change, sustainable lifestyle, and the role of food choices in this context, not only individuals but also society as a whole (in Germany and other western countries) is likely to change when it comes to the acceptance of eating animal products. A shift in public opinion presumably will have an impact on personal dietarian identity, especially with respect to in-group and out-group regard. In order to monitor such developments, the DIQ-D could be very useful for researchers in psychology, sociology, and consumer research.

5. Conclusion

In this study, we introduce the DIQ-D – a German translation of the DIQ (Rosenfeld & Burrow, 2018) – as an instrument for assessing what type of identity an individual has when it comes to consuming or eschewing animal products. Confirmatory factor analyses and internal consistency tests revealed sound psychometric properties of the DIQ-D, comparable to those of the DIQ. Tests of differences in the dietarian identity profiles of omnivores, vegetarians, and vegans showed a graded linkage of dietary restriction with higher centrality; prosocial, personal, and moral motivations; private regard; and strictness, as well as lower public and out-group regard – with vegans scoring the most extreme, followed by vegetarians, followed by omnivores. These results are in line with investigations of dietarian identity in the U.S., emphasizing the transnational construct validity of dietarian identity as conceptualized in the DIQ and DIQ-D. Prospectively, investigators in German-speaking areas can make use of the DIQ-D when turning to a diverse range of other dietary groups, such as pescetarians, flexitarians, or honey-vegans and in addressing longitudinal research questions on the development of dietarian identity over the lifespan. These

and many other questions about vegetarian and omnivorous eating behaviours eagerly await empirical testing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A

Dietarian Identity Questionnaire - deutsch (DIQ-D):

Ernährungsmuster (*dietary pattern*):
Welche der folgenden Lebensmittelgruppen essen Sie im Allgemeinen **nicht**?
Bitte wählen Sie alle aus, auf die dies zutrifft. Falls Sie generell all diese Lebensmittelgruppen essen, wählen Sie bitte die letzte Antwort.

- Im Allgemeinen esse ich **kein** rotes Fleisch.
- Im Allgemeinen esse ich **kein** Geflügel.
- Im Allgemeinen esse ich **keinen** Fisch.
- Im Allgemeinen esse ich **keine** Milchprodukte.
- Im Allgemeinen esse ich **kein** Ei.
- Im Allgemeinen esse ich **keinen** Honig.
- Im Allgemeinen esse ich all diese Lebensmittelgruppen.

Im Folgenden beachten Sie bitte, dass Ihr "Ernährungsmuster" jene Lebensmittel ausschließt, die Sie oben angegeben haben. Wenn Sie z.B. "rotes Fleisch" und "Milchprodukte" ausgewählt haben, schließt Ihr Ernährungsmuster rotes Fleisch und Milchprodukte aus. Wenn Sie die letzte Antwort ausgewählt haben, enthält Ihr Ernährungsmuster all diese Lebensmittel.

In diesem Fall beziehen Sie die in manchen Fragen verwendete Formulierung "Menschen, die Lebensmittel essen, die meinem Ernährungsmuster widersprechen" auf Menschen, die im Gegensatz zu Ihnen, auf eine oder mehrere Lebensmittelgruppen verzichten.

Bitte geben Sie an, in wieweit Sie jeder der folgenden Aussagen zustimmen bzw. sie ablehnen.
[Antwortskala für alle Items: 1 (starke Ablehnung) bis 7 (starke Zustimmung)]

Zentralität *(centrality)***:**

1. Mein Ernährungsmuster ist ein wichtiger Teil davon, wie ich mich selbst beschreiben würde.
2. Mein Ernährungsmuster hat großen Einfluss darauf, wie ich über mich selbst denke.
3. Ein großer Teil meines Lebensstils dreht sich um mein Ernährungsmuster.
4. Mein Ernährungsmuster bestimmt einen wesentlichen Aspekt dessen, wer ich bin.
5. Mein Ernährungsmuster zu befolgen ist ein wichtiger Teil dessen, wer ich bin.

Private Wertschätzung *(private regard)***:**

6. Menschen, die meinem Ernährungsmuster folgen, sind in der Regel gute Menschen.
7. Meinem Ernährungsmuster zu folgen ist eine respektable Lebensweise.
8. Menschen, die mein Ernährungsmuster befolgen, sollten stolz auf ihre Ernährungsweise sein.

Öffentliche Wertschätzung *(public regard)***:**

9. Menschen, die meinem Ernährungsmuster folgen, werden negativ für ihre Ernährungsweise beurteilt. (R)*
10. Personen, die mein Ernährungsmuster befolgen, werden tendenziell für ihre Ernährungsweise kritisiert. (R)
11. Das Befolgen meines Ernährungsmusters ist mit negativen Vorurteilen verbunden. (R)

Außengruppen-Wertschätzung *(out-group regard)***:**

12. Ich betrachte Menschen als weniger moralisch, wenn sie Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)
13. Ich beurteile Menschen negativ, wenn sie Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)
14. Zu sehen, wie Menschen Lebensmittel essen, die meinem Ernährungsmuster widersprechen, verärgert mich oder macht mich wütend. (R)
15. Wenn ich jemanden sehe, der Lebensmittel isst, die meinem Ernährungsmuster widersprechen, mag ich ihn oder sie weniger. (R)
16. Es stört mich, wenn Menschen Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)
17. Zu sehen, wie jemand Lebensmittel isst, die meinem Ernährungsmuster widersprechen, macht ihn oder sie weniger attraktiv für mich.
18. Menschen sollten sich schuldig fühlen, Lebensmittel zu essen, die meinem Ernährungsmuster widersprechen. (R)

Prosoziale Motivation *(prosocial motivation)***:**

19. Ich betrachte mein Ernährungsmuster als einen Weg, die Welt für andere zu einem besseren Ort zu machen.

20. Sorgen über soziale Probleme motivieren mich, meinem Ernährungsmuster zu folgen.
21. Ich folge meinem Ernährungsmuster, weil ich für die Gesellschaft Gutes tun möchte.
22. Ich fühle mich motiviert, meinem Ernährungsmuster zu folgen, weil ich mir Sorgen über die Auswirkungen meiner Ernährungsweise auf andere Lebewesen mache.
23. Ich bin motiviert, meinem Ernährungsmuster zu folgen, weil ich anderen helfen möchte.
24. Ich folge meinem Ernährungsmuster, weil diese Art zu essen gut für die Welt ist.

Persönliche Motivation *(personal motivation)***:**

25. Ich folge meinem Ernährungsmuster, weil ich mir Gedanken über die Auswirkungen meiner Ernährung auf mein eigenes Wohlbefinden mache.
26. Ich folge meinem Ernährungsmuster, weil dies mein Leben verbessert.
27. Wenn ich darüber nachdenke, welche tierischen Produkte ich konsumieren sollte, ziehe ich die Auswirkungen meiner Ernährungsweise auf meine Gesundheit in Betracht.

Moralische Motivation *(moral motivation)***:**

28. Ich fühle mich moralisch dazu verpflichtet, meinem Ernährungsmuster zu folgen.
29. Ich bin motiviert, meinem Ernährungsmuster zu folgen, weil das Essen von Lebensmitteln, die meinem Ernährungsmuster widersprechen, unmoralisch ist.
30. Ich folge meinem Ernährungsmuster, weil es moralisch betrachtet das Richtige ist.

Strenge *(strictness)***:**

31. Ich kann flexibel sein und manchmal Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)
32. Von Zeit zu Zeit esse ich Lebensmittel, die meinem Ernährungsmuster widersprechen.
33. Ich würde etwas essen, das meinem Ernährungsmuster widerspricht, wenn ich hören würde, dass es außergewöhnlich gut schmeckt. (R)

*(R) = revers codierte Items.
Additional items:*
Zeit und Dauer *(timing and duration):*

1. Mit welchem Alter haben Sie (erstmals) begonnen, sich nach Ihrem aktuellen Ernährungsmuster zu ernähren?
   Mit __ Jahren.
2. Wie lange befolgen Sie Ihr aktuelles Ernährungsmuster bisher insgesamt
   __ Jahre und/oder __ Monate
3. Planen Sie, Ihr Ernährungsmuster auf lange Sicht beizubehalten?
   Ja/Nein

Historische Einbettung *(historical embededness)*:

4. Wird Ihr Ernährungsmuster von Ihrem Umfeld größtenteils...?
   a) akzeptiert
   b) unterstützt
   c) geteilt

Label:

5. Ich bezeichne mich selbst als...
   Vegetarier_in
   Veganer_in
   nichts davon
6. Wie genau ich meine Ernährungsweise bezeichne, hängt davon ab, wie sich mein(e)
   Gesprächspartner_in ernährt.
   Ja/Nein

Motivation:

7. Ich folge meinem Ernährungsmuster hauptsächlich aus folgendem Grund
   a) Geschmack
   b) Gewohnheit
   c) Medizinische Notwendigkeit (Allergien/Erkrankungen/Medikation)
   d) Religion/Spiritualität
   e) Gesundheit (ohne unmittelbare medizinische Notwendigkeit)
   f) Diät (Gewichtsabnahme/-zunahme)
   g) ökologische Überlegungen (Nachhaltigkeit/Umweltschutz)
   h) Tierwohl

 i) finanzielle Lage
 j) Solidarität mit nahestehenden Personen
 k) Sonstiges, bitte angeben _____

Appendix B

Table B1
Item descriptives and scale reliability analyses.

Scale	Item	Item mean	SD	Skewness	CITC	Alpha if item removed
Centrality	Mein Ernährungsmuster ist ein wichtiger Teil davon, wie ich mich selbst beschreiben würde.	4.41	1.89	−0.41	0.84	0.90
	Mein Ernährungsmuster hat großen Einfluss darauf, wie ich über mich selbst denke.	4.59	1.84	−0.50	0.75	0.92
	Ein großer Teil meines Lebensstils dreht sich um mein Ernährungsmuster.	3.94	1.86	−0.17	0.74	0.92
	Mein Ernährungsmuster bestimmt einen wesentlichen Aspekt dessen, wer ich bin.	4.55	1.87	−0.50	0.85	0.90
	Mein Ernährungsmuster zu befolgen ist ein wichtiger Teil dessen, wer ich bin.	4.65	1.89	−0.57	0.85	0.90
Private Regard	Menschen, die meinem Ernährungsmuster folgen, sind in der Regel gute Menschen.	4.11	1.53	−0.36	0.51	0.78
	Meinem Ernährungsmuster zu folgen ist eine respektable Lebensweise.	5.47	1.57	−0.98	0.62	0.67
	Menschen, die mein Ernährungsmuster befolgen, sollten stolz auf ihre Ernährungsweise sein.	4.76	1.83	−0.54	0.69	0.58
Public Regard	Menschen, die meinem Ernährungsmuster folgen, werden negativ für ihre Ernährungsweise beurteilt.	3.58	1.77	0.53	0.76	0.85
	Personen, die mein Ernährungsmuster befolgen, werden tendenziell für ihre Ernährungsweise kritisiert.	3.34	1.82	0.64	0.81	0.81
	Das Befolgen meines Ernährungsmusters ist mit negativen Vorurteilen verbunden. (R)	3.26	1.92	0.64	0.76	0.85
Out-Group Regard	Ich betrachte Menschen als weniger moralisch, wenn sie Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)	4.32	1.97	0.00	0.83	0.93
	Ich beurteile Menschen negativ, wenn sie Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)	5.05	1.71	−0.31	0.82	0.93
	Zu sehen, wie Menschen Lebensmittel essen, die meinem Ernährungsmuster widersprechen, verärgert mich oder macht mich wütend. (R)	4.70	1.91	−0.21	0.84	0.93
	Wenn ich jemanden sehe, der Lebensmittel isst, die meinem Ernährungsmuster widersprechen, mag ich ihn oder sie weniger. (R)	5.19	1.66	−0.43	0.78	0.94
	Es stört mich, wenn Menschen Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)	4.53	1.95	−0.11	0.86	0.93
	Zu sehen, wie jemand Lebensmittel isst, die meinem Ernährungsmuster widersprechen, macht ihn oder sie weniger attraktiv für mich.	4.18	2.04	0.06	0.81	0.93
	Menschen sollten sich schuldig fühlen, Lebensmittel zu essen, die meinem Ernährungsmuster widersprechen. (R)	4.55	2.08	−0.20	0.77	0.94
Prosocial Motivation	Ich betrachte mein Ernährungsmuster als einen Weg, die Welt für andere zu einem besseren Ort zu machen.	5.06	2.05	−0.84	0.86	0.92
	Sorgen über soziale Probleme motivieren mich, meinem Ernährungsmuster zu folgen.	4.27	1.94	−0.27	0.67	0.94
	Ich folge meinem Ernährungsmuster, weil ich für die Gesellschaft Gutes tun möchte.	4.73	1.90	−0.63	0.82	0.92
	Ich fühle mich motiviert, meinem Ernährungsmuster zu folgen, weil ich mir Sorgen über die Auswirkungen meiner Ernährungsweise auf andere Lebewesen mache.	5.56	1.88	−1.20	0.84	0.92
	Ich bin motiviert, meinem Ernährungsmuster zu folgen, weil ich anderen helfen möchte.	4.60	2.02	−0.46	0.80	0.93
	Ich folge meinem Ernährungsmuster, weil diese Art zu essen gut für die Welt ist.	5.29	1.91	−0.97	0.87	0.92
Personal Motivation	Ich folge meinem Ernährungsmuster, weil ich mir Gedanken über die Auswirkungen meiner Ernährung auf mein eigenes Wohlbefinden mache.	5.19	1.70	−0.91	0.68	0.53
	Ich folge meinem Ernährungsmuster, weil dies mein Leben verbessert.	5.16	1.76	−0.87	0.56	0.66
	Wenn ich darüber nachdenke, welche tierischen Produkte ich konsumieren sollte, ziehe ich die Auswirkungen meiner Ernährungsweise auf meine Gesundheit in Betracht.	4.54	1.89	−0.48	0.48	0.77
Moral Motivation	Ich fühle mich moralisch dazu verpflichtet, meinem Ernährungsmuster zu folgen.	5.01	2.08	−0.77	0.86	0.89
	Ich bin motiviert, meinem Ernährungsmuster zu folgen, weil das Essen von Lebensmitteln, die meinem Ernährungsmuster widersprechen, unmoralisch ist.	4.81	2.21	−0.62	0.84	0.90
	Ich folge meinem Ernährungsmuster, weil es moralisch betrachtet das Richtige ist.	5.23	2.01	−0.91	0.85	0.89
Strictness	Ich kann flexibel sein und manchmal Lebensmittel essen, die meinem Ernährungsmuster widersprechen. (R)	4.74	2.19	−0.40	0.82	0.75
	Von Zeit zu Zeit esse ich Lebensmittel, die meinem Ernährungsmuster widersprechen.	5.11	2.08	−0.60	0.73	0.83
	Ich würde etwas essen, das meinem Ernährungsmuster widerspricht, wenn ich hören würde, dass es außergewöhnlich gut schmeckt. (R)	5.37	2.11	−0.89	0.70	0.86

CITC = corrected item-total correlation; *SD* = standard deviation; (R) = reversed items.

Appendix C. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.foodqual.2020.103988.

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