

# Vegan diet: motives, approach and duration

Initial results of a quantitative sociological study

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## Summary

According to various surveys, the proportion of people following a vegan diet, i.e. people foregoing not only meat and fish but all products of animal origin, has increased in Germany in recent years. This article illustrates the initial descriptive results of a German quantitative sociological study, in which only vegans were questioned via an online survey. The three most important motives for following a vegan diet are reports on factory farming, climate protection and health. Most respondents believe that it is now easier to follow a vegan diet than in the past. More than a third of respondents had followed a vegan diet for more than two years.

**Key words:** vegan diet, quantitative sociological vegan study, dietary behavior

## Introduction

Vegans voluntarily choose to follow a diet that excludes meat and all other animal products. They are an example of a group which differs from the majority of the population in terms of diet. Up until now there has been no reliable data on the evolution in the number of vegans and on their exact proportion of the total population in Germany.

The above-mentioned study on the vegan diet, whose data was gathered as part of the project entitled “Ge-

*schlechtsspezifische Aspekte bei der Lebensmittelwahl*” [Gender-Specific Aspects in Food Choice]<sup>1</sup> at the University of Hamburg in July and August 2013, is the first quantitative sociological study of its kind in Germany. In previous quantitative research, such as e. g. the “Oxford Vegetarian Study” [1] or the “Gießener Vegetarierstudie” [Gießen Vegetarian Study] [2], vegans have only constituted a sub-group, if any at all, and were e. g. labelled as “strict vegetarians”. In contrast to vegetarians, vegans have only been perceived as an independent group with very strict dietary prescriptions for the last few years [3]; related publications however deal primarily with state of health and nutrient supply [4–8], rather than sociological determinants. The data basis of previous studies with sociological questions comprises qualitative interviews [9, 10], whereby in GRUBE [3] an additional 150 people took part in a written quantitative questionnaire in 1987/88.

There are no reliable figures on the

evolution of the group of vegans. Estimates in 1983 assumed a vegetarian proportion of 0.6 % in the former West Germany [3], and in the mid-1990s a proportion between 2 and 3 % [11] or 3.6 % [3] of the entire united German population. The proportion of vegans represented only a fraction of these figures, estimated at approximately 6–8 %, suggesting the likely number of vegans 20 years ago fell between 100,000 and a maximum of 230,000 [3, 11]. However, these figures are probably too high, as according to the *Nationale Verzehrsstudie II* (NVS II) [National Nutrition Survey II] between November 2005 and January 2007 less than 0.1 % of the German population is vegan, corresponding to only 80,000 people [12]. However, a survey by the market research agency YouGov [13] showed that the number of vegans in Germany may have risen sharply in recent years. According to their findings, the proportion of vegans in 2014 was approx. 1.5 %, corresponding to approx. 1.2 million people.

The increasing interest in a vegan diet is evident in the growing number of newly-published vegan cookery books: only 12 titles in 2011, rising to 50 in 2013 and already at 77 in the third quarter of 2014 [14]. The fact that these books primarily address issues of health, lifestyle and fitness (as evident in most titles), and

### Citation:

Kerschke-Risch P (2015) Vegan diet: motives, approach and duration. Initial results of a quantitative sociological study. *Ernährungs Umschau* 62(6): 98–103

This article is available online:  
DOI: 10.4455/eu.2015.016

<sup>1</sup> The project is supported by the *Gleichstellungsfonds* [Equality Fund] from the University of Hamburg and by the *Frauenförderfonds* [Development Fund for Women] from the WiSo-Faculty.

thus do not address the original political and ethical motives of vegans, suggests that a broader spectrum of people is being targeted. This could indicate a change in image from a theory-based veganism to a lifestyle. Furthermore, supermarkets offering exclusively vegan products have opened in recent years, which can be seen as further evidence of a correspondingly large and economically-attractive consumer group. The following text illustrates some selected initial descriptive results from this study and shows how the increase in interest in a vegan diet may be explained.

## Method

In July and August 2013, 852 vegans were asked about different aspects of their diet in an anonymous online survey [15]. The standardized questionnaire was distributed via forums and social networks using the so-called “snowball sampling” technique, which is regarded as the method of choice for difficult to access and relatively small (in relation to their proportion) sub-populations [16, 17]. Attention was drawn to the study via an accompanying note, in order to arouse interest and increase willingness to participate. One advantage of online questionnaires is that there are no undesired effects from the method or interviewer or any social desirability bias [18]. Since the proportion of internet users in 2013 was more than 95 % among people under 40-years-old and more than 80 % among 40- to 59-year-olds [19], online results may be regarded as generally applicable to the respective age group [15]. Responding to the comprehensive survey that took an average of 30 minutes and was thus exceptionally long for an online survey; this demonstrates the respondents’ profound interest in the subject, as a response time of only 10 to 15 minutes should usually be projected [18].

At the beginning of the questionnaire, participants were asked whether they were vegan by means of a process of elimination. The survey deliberately avoided defining a fully vegan lifestyle with complete rejection of any animal products in all areas of life (not only in food, but also in clothing and cosmetics) as an exclusion criterion, as these questions are sometimes the subject of controversial debate. Only people who responded yes to the question on a vegan diet were able to take part; for the rest, the survey automatically ended with their negative response.

Of a total of 1,505 people who responded to this first question, n = 1,319 people (87.6 %) indicated that they followed a vegan diet; 186 people (12.4 %) responded to the question with a negative and were then excluded from the rest of the survey. Of the 1,319 respondents identifying as vegan, a total of 852 people (65 %) responded to the survey at least as far as the gender variable. They form the basis for analysis.

The contact partner/project leader was referred to in the introductory text at the beginning of the online survey and respondents were able to view the project homepage [20] for further information by clicking on a hyperlink. The text also stated that no commercial interests (e. g. by food companies) were involved in the study.

The questionnaire comprised a total of 30 question sets with approx. 220 individual items on different food-related aspects, such as risk

assessments and internalized standards as well as data on socio-demographic variables.

## Results

### Age and gender

Similar to results from other vegetarian studies, women were significantly over-represented with almost 80 % and the average age (♦ Table 1) was significantly lower than the population average at just over 31 [2, 21].

### Duration of vegan dietary behavior

As shown in ♦ Table 2, “new vegans”, who have only been following a vegan diet for less than 6 months, represent only 16.5 %; approximately one fifth had followed a vegan diet for 6 months to 1 year, more than half between 2 and 5 years and approx. 12 % were experienced “long-term vegans”. Nobody answered that they had never eaten animal products. Any possible correlations between the length of time spent as a vegan and other variables, such as e. g. experiences or attitudes, should be studied in subsequent analyses.

### Approach to a vegan diet

As it is significantly more difficult to follow a vegan diet than to follow “only” a vegetarian diet, people may be expected to have not consumed meat at least for a certain period before making the decision to com-

	Men (n = 173) 20.3 %	Women (n = 679) 79.6 %	Overall (n = 852)
<b>Age in years</b>			
Average (SD)	32.4 (10.3)	30.8 (10.1)	31.1 (10.1)
Age span	15–77	15–72	15–77

Tab. 1: Age of study participants  
SD = standard deviation

pletely reject animal products (vegetarian diet as “intermediate stage”). In order to calculate this time period, the survey separately recorded the length of time for which the respondents had not eaten meat and for which they had not consumed any animal products at all (♦ Table 3).

In the questionnaire, 74.3 % indicated that they had assumed a vegan diet after an intermediate stage as a vegetarian, whereas 4.4 % grew up as vegetarian and more than a fifth (21.3 %) moved directly from a diet featuring meat to a vegan diet.

In order to check whether the answers to the questions on when they last consumed meat and any other animal products were valid, cross tables were calculated for people (n = 625) who moved from a mixed diet to a vegan diet via the intermediate stage of a vegetarian diet. In valid responses, the vegetarian duration variable, i.e. no meat, must be equal to or greater than the vegan duration, i.e. no animal products. Only in two cases was this requirement not fulfilled, so these responses were not taken into account in ♦ Table 3.

### Motives for a vegan diet

In another set of questions, respondents were provided with various

motives, where they had to indicate how much influence each has had on their decision to stop eating animal products, on a scale of 1 to 5 (1: “no influence at all”, to 5: “very strong influence”). It could be shown that the higher the mean value, the stronger the respective motive.

♦ Table 4 lists the motives in increasing importance to the respondents; the greatest influence for becoming vegan was reports on factory farming. Less important were food scandals, differentiated according to various examples. Women and men did not differ in the sequence of motives, aside from organic egg deception and rotten meat. Significant gender-specific differences occurred for individual food scandals and factory farming; in this case the values for women were somewhat higher than for men (♦ Table 4).

### Assessment of the difficulties of a vegan diet

The key question as to why a vegan diet appeals to people more, can be explained by the subjective assessment made by respondents, as shown in ♦ Table 5. Irrespective of gender almost 90 % responded “yes, definitely” to the question “Do you believe that it is easier to be vegan today than a few years ago?”

Another stage examined whether

the type of approach taken to a vegan diet had an influence on how difficulties were assessed. There was no difference in assessment in both groups, as shown in ♦ Table 6. Both those who followed a vegetarian diet as an intermediate stage and those who moved directly to a vegan diet were almost 90 % of the opinion that it would be easier to decide to be vegan today. The responses of “no, not at all” and “yes, somewhat” were negligible, together amounting to only 2 %.

### Discussion

As a result of the introductory filter question, only people who indicated that they were vegan were able to respond to the rest of the survey. However, the possibility that some respondents were not exclusively vegan, and instead partially or temporarily consumed animal products, cannot be excluded, as is the case in vegetarian studies where respondents sometimes indicate that they eat meat and/or meat products [2, 22].

It can be assumed that the comparatively large participant number of 852 and the low drop-out rate are due to the fact that diet is a subject that equally concerns all people without exception and furthermore that the participants’ interest was aroused and reinforced by the accompanying note. In addition, the fact that there were no commercial interests behind the study, e. g. from food compa-

Duration of vegan diet	Men (n = 172)	Women (n = 676)	Overall (n = 848)
< 6 months	15.7 (n = 27)	16.7 (n = 113)	16.5 (n = 140)
6 months < 1 year	16.3 (n = 28)	20.1 (n = 136)	19.3 (n = 164)
1 < 2 years	23.3 (n = 40)	28.7 (n = 194)	27.6 (n = 234)
2 < 5 years	29.1 (n = 50)	23.2 (n = 157)	24.4 (n = 207)
≥ 5 years	15.7 (n = 27)	11.2 (n = 76)	12.1 (n = 103)
never consumed animal products	–	–	–

Tab. 2: Duration of vegan diet (in percentage)

### Glossary

Cross tables or contingency tables: A cross table illustrates specification combinations of two variables. The cells indicate the values of the variables, which arise from the intersection of rows and columns of corresponding values.

Duration vegetarian	Duration vegan					Overall (n = 625)
	< 6 months (n = 95)	½ < 1 year (n = 114)	1 < 2 years (n = 181)	2–5 years (n = 150)	> 5 years (n = 85)	
< 6 months	100 (n = 12)	–	–	–	–	(n = 12)
6 months < 1 year	65.5 (n = 19)	34.5 (n = 10)	–	–	–	(n = 29)
1 < 2 years	22.4 (n = 17)	36.8 (n = 28)	40.8 (n = 31)	–	–	(n = 76)
2–5 years	11.9 (n = 18)	19.9 (n = 30)	38.4 (n = 58)	29.8 (n = 45)	–	(n = 151)
> 5 years	8.1 (n = 29)	12.9 (n = 46)	25.8 (n = 92)	29.4 (n = 105)	23.8 (n = 85)	(n = 357)
never consumed meat	–	–	–	–	–	–

Tab. 3: **Traditional approach: duration of vegan/vegetarian diet** (in percentage)

This means e. g.: Of the respondents who have not consumed meat for 1–2 years, 22.4 % have lived as a vegan for less than 6 months and 36.8 % between 6 months and one year. As the respective time frames were recorded in categories, somebody may e. g. have been vegan for 3 months and have stopped eating meat 5 months ago; the person would indicate the category of < 6 months in both instances.

	Men (n = 174)	Women (n = 679)	Overall (n = 853)
<b>Motives for a vegan diet (SD)</b>			
Reports on factory farming	4.1 (1.2)	4.4 (1.0)	4.4* (1.1)
Climate protection	3.7 (1.4)	3.8 (1.2)	3.8 (1.3)
Health	3.1 (1.5)	3.2 (1.4)	3.2 (1.5)
Vegan friends	2.4 (1.5)	2.3 (1.5)	2.4 (1.5)
Food scandals in general	2.1 (1.2)	2.3 (1.2)	2.2 (1.2)
Organic eggs deception	1.8 (1.2)	2.2 (1.3)	2.1* (1.3)
Rotten meat	1.9 (1.2)	2.2 (1.3)	2.1* (1.3)
Reports on horsemeat	1.6 (1.1)	1.8 (1.2)	1.8* (1.2)
Religious reasons	1.4 (0.9)	1.5 (1.0)	1.4 (1.0)

Tab. 4: **Motives for vegan diet: comparisons of mean value** (range 1–5)

SD = standard deviation

\* significant at 0.05 level; men/women comparison

gies, was decisive for many respondents, as demonstrated by several feedback comments.

Snowball sampling is a reasonable process for the target group of vegans, as only a few vegans would appear in a survey addressed to the general population. We can assume that the target group for this study

was adequately reached through the online survey, as more than 90 % of the younger and middle age groups have internet access [19]. Before the expansion of the internet, vegetarian studies relied on postal surveys with recruitment via vegetarian associations or health food magazines [1, 2]. The duration of the vegetarian and/

or vegan diet among individuals is presumably only an estimated value, as it is generally assumed that all respondents would not be aware of the exact time of their decision. We should also bear in mind that there may have been breaks in diet format, which were evaluated and/or regarded differently by individuals. MACNAIR [22] describes three different strategies which vegetarians apply to a lasting change in diet: a) after the decision to be vegetarian, meat consumption is reduced over a period of 6 months to 3 years; b) meat consumption has already been reduced before the final decision is made; c) large meat portions are replaced by high consumption of milk products. Similar strategies are conceivable in the transfer from a mixed diet to a vegan diet, so that the final changeover date may perhaps be preceded by a longer decision process.

The question as to whether the vegan diet is only a passing trend or a new and lasting diet and lifestyle can only be answered by long-term research. As a vegetarian diet is regarded as a stable diet format after a

Easier today?	Men (n = 170)	Women (n = 679)	Overall (n = 831)
somewhat easier	12.0 (n = 20)	10.8 (n = 72)	11.1 (n = 192)
definitely easier	88.0 (n = 147)	89.2 (n = 592)	88.9 (n = 739)

Tab. 5: Assessment of vegan diet today in comparison with the past differentiated by gender (in percentage)

Easier today?	Approach to a vegan diet		
	Approach via vegetarianism	from mixed diet to vegan	Overall (n = 793)
somewhat easier	10,5 (n = 65)	12,7 (n = 22)	11 (n = 87)
definitely easier	89,5 (n = 555)	87,3 (n = 151)	89 (n = 706)

Tab. 6: Assessment of vegan diet today in comparison with the past differentiated by approach to a vegan diet (in percentage)

period of five years [23], we can assume that this also applies to a vegan diet. In this study, approximately 12 % of respondents indicated they had consumed no animal products for more than five years and almost a quarter had followed a vegan diet for two to five years. It can therefore be concluded that in total more than a third of study participants were not following a short-term trend.

The relatively high proportion (20 %) of those who changed from an omnivorous diet directly to a vegan diet without a vegetarian intermediate stage must be regarded against the backdrop of potential unconscious changes in meat consumption and/or consumption of animal products in advance (see [22]). The fact that food scandals were less relevant motives for respondents to follow a vegan diet may be due to the fact that they had already given up eating meat.

Of fundamental importance to vegans is, in addition to an improved range of vegan products, the increasing

social acceptance of a vegan lifestyle, which is clarified e. g. by the variety of recently published cookery books on vegan diets [14], which in their packaging address not only fringe groups but a wider public. This analysis is also reflected in the respondents' subjective assessment; almost 90 % were of the opinion that it was easier to be vegan today than a few years ago. We can therefore assume that the extended and improved range of vegan "alternative products" and the availability of vegan products both in normal supermarkets [5] and in online shops have significantly lowered the subjective "costs" of following a vegan diet and thus causally contributed to the increase in the proportion of people following a vegan diet in Germany.

Further analyses should consider complex correlations between socio-demographic variables, attitudes, reasons and experiences.

### Conflict of Interest

The author declares no conflict of interest according to the guidelines of the International Committee of Medical Journal Editors.

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DOI: 10.4455/eu.2015.016