

# The vegetarian diet and its relations with the personality of women

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## ABSTRACT

### **Purpose**

The purpose of this study was to determine if vegans, vegetarians, and traditional eaters differ in personality traits and levels of directive behavior.

### **Method**

A study involving 1075 women was conducted. Subjects were tested using the Ray's Directiveness Questionnaire (1981) and the TIPI-PL scale (Sorokowska et al., 2014) constructed to measure Big Five traits.

### **Results**

The results showed that women who eat a vegan diet are characterized by highest level of openness to experience. On the other hand, the lowest is represented by the respondents. The results showed that women who eat a vegan diet have the highest level of openness to experience.

### **Conclusions**

Women on traditional diets present higher levels of conscientiousness in contrast to women on plant-based diets. The highest level of directiveness was obtained by the subjects respondents following a traditional diet.

**Keywords:** vegetarianism, veganism, personality, directiveness

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## INTRODUCTION

The number of studies in the area of psychological functioning of individuals, their personality traits, as well as their relationship to vegetarianism is growing steadily. However, their results are still not clear and unambiguous. The personality traits postulated in the Big Five model of McCrae and Costa (2008) are related to dietary choices. For example, high-fat food eaters describe themselves as dutiful and conscientious, while meat avoiders as creative, reflective, open-minded, and empathetic (Kassler et al. 2016; Goldberg, Strycker, 2002). The results of Keller and Siegrist's (2015) study showed that high indicators of openness to experience correlated with more frequent consumption of fruits and vegetables and less frequent consumption of meat. High rates of agreeableness were associated with vegetarianism, and extraversion was associated with eating meat, sweet, and spicy foods. Restraint from eating emotional and meat restriction correlated with conscientiousness, while neuroticism was associated with emotional eating (Keller, Siegrist, 2015). During a study of a large group of Estonians on the relationship between personality traits and eating habits, it was shown that traditional eating was associated with low openness to experience (Möttus et al., 2012). In other studies, vegetarians have been shown to be characterized by greater openness, confidence, conscientiousness, and less conservatism (Pfeiler, Egloff, 2018a, 2018b). In a recent study by Pfeiler and Egloff (2020) conducted on an Australian sample, the researchers obtained results indicating that emotional stability is positively associated with the consumption of plant-based foods. Additionally, their previous results regarding high levels of openness and conscientiousness in vegetarians were confirmed.

According to Ray (1981), directiveness is a personality trait that amounts to impose one's will on others. It is based on self-confidence and belief in the rightness of one's own actions. From the perspective of the authors of the presented study, it was important to operationalize the analyzed variable as a personality trait connected with the tendency to dominate over others and imposing one's will on others. Not as "authoritarianism of attitudes", expressing respect for authorities, which is characteristic, for example, of Adorno's theory (2010). This distinction is emphasized in Ray's (1981) theory. According to the author, the authoritarian attitudes and directive behavior that make up the authoritarian personality, form independent dimensions. Therefore, in order to examine directive attitudes, it is better to use personality questionnaires rather than those concerning attitudes.

To the knowledge of the authors of this study, no research has been conducted on the relationship between directive behavior and diet. Only on the basis of theoretical considerations can it be assumed that the above variables will be co-dependent. The same is true for personality (Keller, Siegrist, 2015; Pfeiler, Egloff, 2018a; Pfeiler, Egloff, 2018b; Pfeiler, Egloff, 2020). Furthermore, it has been noted that individuals meat eaters say that they feel stigmatized and even attacked by those working to popularize vegetarianism. In their view, people who exclude meat products from their diet tend to impose their and force their decision to stop consuming meat (Hodson, Earle, 2018). Because of the public

perception that vegetarians tend to impose their views in the context of nutrition, the authors conducted a survey (unpublished) asking respondents. The authors conducted a survey (unpublished) in which they asked respondents to comment on various commonly held beliefs about vegetarians and vegans as well as about people who eat traditionally. This confirmed the common belief that the respondents associated vegetarians with a tendency to impose their will was confirmed.

Based on the premises presented, the following research questions and hypotheses were formulated:

- Q1: Are there differences between women who eat vegetarian, vegan and traditional way of eating, are there differences in the area of personality dimensions?
  - H1.1: Women who are on a meat exclusion diet show higher level of openness to experience compared to women on a traditional diet.
  - H1.2: Women on a traditional diet represent higher levels of extraversion compared to women on vegan and vegetarian diets
  - H1.3: Women on vegan and vegetarian diets represent higher levels of agreeableness compared to women on who are on a traditional diet.
  - H1.4: Women on meat exclusion diets represent higher levels of conscientiousness than women on a traditional diet.
  - H1.5: Women following vegetarian and vegan diets represent higher levels of emotional stability compared to women eating a traditional diet.
- Q2: Are there differences in levels of directive behavior depending on how diet?
  - H2: Among women on vegetarian and vegan diets, the directive index is higher than in women on traditional diets.

## METHOD

### Subjects and research procedure

The study involved 1075 women from all over Poland, aged 18 to 70 years ( $M = 25,5$ ). Demographic characteristics of the subjects are presented in Demographic characteristics of the subjects are shown in Table 1 (p. 168).

According to the declared diet, the subjects were assigned to the following groups: traditional diet, allowing meat consumption ( $n = 247$ ), a vegan diet, excluding the consumption of any animal products ( $n = 306$ ), and a vegetarian diet ( $n = 522$ ), which included women who did not consume meat but allowed animal products such as dairy.

The survey was conducted via the Internet. Respondents were recruited through social networking sites such as “Vegan Support Group”, “Vegans Poland”, and groups publishing groups publishing recipes dedicated to meat eaters.

**Table 1****Characteristics of the surveyed group**

<b>Education</b>	<b>Frequency</b>	<b>Percent</b>	<b>Place of residence</b>	<b>Frequency</b>	<b>Percent</b>
Primary	103	9.60	Rural	208	19.30
Vocational	11	1.00	City up to 50 thousand	184	17.10
Secondary	291	27.10	City 100 thousand	105	9.80
Higher (in progress)	324	30.10	City of 200 thousand	110	10.20
Higher	346	32.20	City over 200 thousand	468	43.50
<b>Total</b>	<b>1075</b>	<b>100</b>	<b>Total</b>	<b>1075</b>	<b>100</b>

**Research questionnaires**

TIPI-PL – Polish adaptation of the Ten Item Personality Inventory (TIPI) as adapted by Sorokowska and colleagues (2014), which is a brief method of measuring the Big Five traits (McCra, Costa, 2008). The scale consists of 10 statements to which respondents respond on a seven-point scale. According to the scale authors' assumptions, it is recommended for research conducted via media (e.g. telephone or the Internet), especially in situations where there is a risk of respondents of respondents not completing the survey. Moreover the scale is recommended for research with a large number of respondents. An example of this is the survey project described in this article. The survey design described in this article is an example. Cronbach's alpha coefficient for the entire scale in the study reached a sufficient level of 0.60, while the reliability of individual subscales was emotional stability 0.78, conscientiousness 0.74, extraversion 0.70, agreeableness 0.60, and in openness to experience 0.50.

SD – John Ray Directiveness Scale (1981) in the original version and translated by the authors of this article. The tool is used to measure directiveness understood as a tendency to impose one's will on others. The scale was adapted to the Polish conditions according to the standards accepted for adaptation of psychological tools. First, with the participation of a reader, the following was done translation into Polish, and then into English (in order to determine the convergence of translations). Cronbach's alpha of the version used in the study reached the value 0.80, which indicates adequate internal consistency and good stability. Additionally, the half reliability was calculated which was 0.78. The respondent answers the questions by choosing one of the three answers (Yes, Don't Know, No). The higher the score is obtained the higher level of directiveness the person has.

## Results of the research

Intergroup comparisons were conducted using one-way analysis of variance, which was made possible by the large size of the groups (despite their unevenness) and post-hoc tests. Descriptive statistics and test results of analysis of The descriptive statistics and test results of analysis of variance for individual variables are presented in Table 2.

**Table 2**

**Results of ANOVA analysis of variance and descriptive statistics for groups distinguished by diet type**

	Traditional diet <i>n</i> = 247		Vegetarian diet <i>n</i> = 522		Vegan diet <i>n</i> = 306		<i>F</i> (2.1072)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Openness to experience	9.75	2.70	10.15	2.57	10.56	2.54	8.99*	0.001
Extraversion	9.57	3.44	9.38	3.34	9.08	3.21	1.51	0.222
Agreeableness	9.88	2.84	10.14	2.65	10.15	2.75	0.90	0.408
Conscientiousness	10.48	3.06	9.86	3.17	9.86	3.39	3.42*	0.033
Emotional stability	6.77	3.75	7.04	3.34	7.38	3.53	2.12	0.119
Directivity	56.98	9.28	55.09	9.30	54.48	8.85	5.51*	0.004

Level of significance: \* $p < 0.05$ ; *M* – mean value; *SD* – standard deviation; *F* – one-way analysis of variance value; *p* – statistical significance

ANOVA analysis of variance performed to verify the first hypothesis (H1.1) proved to be significant (Table 2), while pairwise comparisons pairwise comparisons proved that all analyzed groups differ in the level of openness to experience. The highest scores on this variable were achieved by the group of women eating a vegan diet. These scores were significantly higher than both the scores of women eating traditionally  $p < 0.001$  These results were significantly higher than both the results of women eating a traditional diet,  $p < 0.001$ , and those of vegetarians,  $p = 0.029$ . Vegetarians showed significantly higher openness scores than meat eaters,  $p = 0.047$ . The conscientiousness dimension also showed statistically significant differences between groups. The post hoc analyses showed higher Post hoc analyses showed higher conscientiousness scores for women eating a traditional diet compared to vegetarians,  $p = 0.016$ , and vegans,  $p = 0.023$ . For the extraversion dimension, no statistically significant differences between the groups. Similar results were obtained for the emotional stability

and agreeableness dimensions. The hypothesis regarding the different level of directiveness in women remaining on vegetarian and traditional diets gained significantly statistical results, however, the opposite of the authors' assumptions. The study groups differed from each other, in such a way that meat-eating women showed higher directive the meat-eating women were more directive than the vegetarian women,  $p = 0.008$ , and the vegan women  $p < 0.001$ . The vegan and vegetarian women did not differ with respect to the analyzed variable  $p = 0.351$ .

## DISCUSSION

The results of the study indicate that there are differences in the distribution of personality traits in women on different diets. Women eating vegan and vegetarian are characterized by higher levels of openness to experience. These results are consistent with other studies (Goldberg, Strycker, 2002; Keller, Siegrist, 2015; Pfeiler, Egloff, 2018a; 2020). One might speculate that individuals who are characterized by high openness to experience will be more willing to taste unfamiliar flavors, but also to change their eating habits or draw knowledge from scientific reports. It should be mentioned that the vegan participants were more open to experience. The vegan women were more open to experience than the vegetarian women. Perhaps the restrictive vegan diet, which excludes all ingredients derived from animals, including dairy products, requires its adherents to be much more flexible, willing to experiment in the kitchen and open to unconventional tastes and products. However, it is not known whether people with a high openness to experimentation decide to go vegan, or rather, the fact of staying on a diet that excludes animal products develops openness. Regardless of the direction of this relationship, however, it can be concluded that vegans The study also found that vegans have a higher openness to experience than vegetarians and the study was conducted on the basis of the results of a survey conducted by the National Academy of Sciences. However, we should be cautious about generalizing the results regarding the level of openness. The study used a scale that, as the authors themselves scale, which, as its authors themselves say, is an imperfect tool and requires caution when interpreting data obtained via the Internet (Sorokowska et al., 2014). Especially in a situation where other questionnaires were used in the study other questionnaires have been used in the study. This is because the previous self-perception may be corrected by measuring other psychological variables (Sorokowska et al., 2014). It is also worth noting that the openness to experience scale obtained a much lower reliability (0.50) than that of the other scales in the study. which additionally calls the obtained results into question. It does not change the fact, however, that the observed relations are interesting and should be a starting point for further explorations. The study did not confirm that people on vegetarian diets have higher rates of introversion, which was previously demonstrated in a study by Keller and Seigrist (2015). Also, a recent study by Medawar and colleagues (2020) confirms, but inconclusively explains greater introversion in individuals who do not

consume animal products on a daily basis. The authors speculate that this is due to stricter eating habits or the fact that vegetarians are shunned from society due to their dietary choices. However, it is worth noting, that plant-based diets are currently so popular that this rejection may soon become very outdated. Ambiguity of results in the area of the results in the area of introversion-extroversion may also result from different reasons for choosing not to eat meat. A study by Bobić and colleagues (2012) found that individuals who ate vegetarian for ethical reasons were significantly more introverted than individuals who remained on this diet for health reasons. Ambiguous conclusions can be drawn from the data on agreeableness, which, according to Pfeiler and Egloff (2020), should be higher in people who eat a vegetarian diet. The data on agreeableness, which according to Pfeiler and Egloff (2020) should be higher in people eating a vegetarian diet, are inconclusive. The authors' analyses did not confirm such a discrepancy, and the same happened in the study by Aslanifar and colleagues (2014). The differences in conscientiousness were found to be statistically significant, yet opposite to the authors' assumptions, which seems to be a very interesting result. As it turned out that women who eat meat have higher conscientiousness scores than women who eat vegetarian and vegan diets. This also stands in contrast to other studies (Keller, Siegrist, 2015; Pfeiler, Egloff, 2018a; 2020). There is expert opinion that confirms that individuals who consume meat products are more conscientious than those who avoid them, but these are rare (Medawar et al. 2020). The argument for the validity of the authors' results is that meat eaters often hold conservative and inflexible views, which may be indicator of their dutifulness and conscientiousness (Goldberg, Strycker, 2002). It is worth noting that meat consumption in Western societies is part of a tradition, the cultivation of which also requires conscientiousness (Dhont, Hodson, 2014). Differences in the trait of emotional stability between the analyzed groups were not demonstrated. It is worth noting that the issue of different level of neuroticism in vegetarian individuals is a controversial topic. Studies show that individuals characterized by neurotic behavior are generally more likely to avoid certain food groups and have a more restrictive diet (Medawar et al. 2020). However, on the other hand, it is seen that emotional stability correlates positively with a plant-based diet. Other studies show, that neuroticism is associated with emotional eating and meat consumption (Pfeiler and Egloff, 2020). In the study presented here, directiveness is a trait whose intensity is statistically higher in women eating a traditional diet compared to same-sex non-meat eaters. These differences were significant for both vegan and vegetarian women. This result is in opposition to societal beliefs about the tendency of vegetarians to impose their will, shown in a survey by the authors. Hodson and Earle (2018) argue, based on analyses from their own research, that meat eaters report feeling pressured and being attacked by animal activists animals. In their view, vegetarians tend to force them to decide not to eat meat. However, the authors justify their beliefs about meat eaters by the greater conservatism of the subjects (Dhont, Hodson, 2014). The high rates of directiveness in women eating a traditional diet can also be interpreted through the prism of less tolerance towards dissent, as evidenced by a widespread dislike of vegetarians (MacInnis, Hodson, 2017).

As research has shown, conservative and meat-eating individuals have the perception that vegetarians, by rejecting elements of food-related traditions, they become a kind of threat to culture society and morality (Dhont, Hodson, 2014; Dhont, Hodson, Leite, 2016). An attempt can be made to interpret the directive outcome in conjunction with feelings of anxiety. Anxiety accompanies individuals who identify with conservative ideologies. Hodson and Earle (2018) demonstrate in their study that right-leaning individuals are far more likely than left-leaning individuals to give up vegetarianism for fear of being stigmatized. In interpreting the survey results, it is important to note that the invitation to take part in a survey on dietary habits were more likely to be accepted by those on vegetarian diets were more likely to accept an invitation to participate in a lifestyle survey. The growing trend of eating meat-free requires a high level of awareness, but also specific knowledge, which vegetarians often obtain from websites and community groups (Cyrek, 2021). This is counter to the way in which messages about the diet of meat eaters are obtained. Meat diets are most often is anchored in the traditions and cooking habits of the family home. However, this supposition requires empirical verification. Another issue is the criterion of identity, identification, and adherence to a particular diet. For vegetarians and vegans, the need to distinguish themselves and emphasize their belonging to a particular dietary group is much stronger than in the case of meat eaters (Kowal, 2017). The presented study has some limitations. Mention the cross-sectional nature of the study or the fact that the study group consists of women, mostly vegetarians. In addition, taking into account the small absolute size of the intergroup differences in personality, it is not possible to clearly determine whether these differences are significant in everyday life and whether these results can be replicated in other populations. Despite the limitations, we believe that the work presented here is a valuable yet interesting attempt to characterize individuals remaining on plant-based diets.

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