

Consumer Personality and Local Food Specialties: The Case of Norway

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ABSTRACT

In studies of consumption of local food specialties (LFSs), individual personalities are rarely mentioned. In this article, we want to expand on and provide a nuanced explanation of the characteristics of these consumers of these products, asking: *Are there any personality traits that characterize these consumers?*

We use the Big Five personality model to unpack the relationship between individuals' personalities and choices of LFS in the Norwegian context. The model consists of the following five personal traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. These personality traits are latent, but through questions regarding behavior, the traits may be revealed. To construct latent variables to measure these traits, we apply the graded response model. Furthermore, socioeconomic variables are combined with personality traits in logistic regression models to find the relationships between personality and choice of Norwegian LFSs.

Our results show that in all models the latent variable *Openness to experience* was one of the most important predictors of all the choices of LFS made by individuals. Openness to experience is characterized by fantasy, aesthetic sensitivity, attentiveness to inner feelings, preference for variety, and intellectual curiosity.

The consequence of the connection between Openness to experience and LFS is that stakeholders may take this into account when seeking to increase sales.

Keywords: *Local Food Specialties; Consumption; Personality; Big Five; graded response model*

1 Introduction

In the late 1980s, global and European trade policies were undergoing major changes. General increased liberalization and import tax deregulation threatened Norwegian food products with increased competition from foreign imports. To counter the competition, Norwegian authorities and other key agrifood stakeholders started mobilizing what came to be described as *mental border protection* (Hegnes, 2015). Simply put, the strategy aimed to encourage new ways of considering and perceiving food and to convince Norwegian consumers to choose Norwegian products. This Norwegian top-down *turn to new qualities* coincides with a growing focus on new food qualities in Europe characterized by a bottom-up initiative by consumers, retailers, and producers to move away from standardized products and toward alternative qualities (Goodman, 2003). Both the top-down and bottom-up initiatives may be understood as nuanced forms of *gastronationalism* (DeSoucey, 2010).

In the mobilization against international competition, “Norwegian Food Specialties” grew to become an important concept introduced by the Norwegian government to denote new quality products. A historical timeline can be drawn beginning in 1986 with a “green wave” when a scheme for organic produce was introduced in Norway. In the Norwegian Agricultural Authority’s strategic work at this time, the goal was to create “mental border protection” for Norwegian competitive advantage. In a speech, the Minister of Food and Agriculture in 1991, Gunhild Øyangen, specifically mentioned the advantages of clean food from Norway and “regional or ‘special Norwegian’ products that are industrially processed, for example Aquavit” (Øyangen, 1991:8). The green wave was followed by a focus on national quality and the introduction of the “Good Norwegian” scheme in 1994, indicating compliance with a standardized level of quality for Norwegian food. The regional, local, traditional, and special qualities were first emphasized through the “Specialty” scheme in 2001. In 2002, an additional scheme for traditional and local products was introduced. On July 5, the Norwegian regulations for Protected Designation of Origin (PDO), Protected Geographical Indication (PGI), and Traditional Specialty Guaranteed (TSG) came into force in accordance with EU regulations.

To raise awareness of Norwegian food specialties from this time, attempts were made to develop a new food vocabulary and mentality through the introduction of a new food cultural taxonomy. The focus on food specialties became more explicit, with several Ministers of Food and Agriculture using France and southern Europe as ideal examples of this model’s benefits. Since the 1990s, political opinion has been united in the belief that the domestic application of the *terroir* concept would alter Norwegians’ understanding of Norwegian food products. This desire to embrace *terroir* on a conceptual level to communicate both Norway’s history and build an exciting food culture for its future was emphatically stated by former Minister of Food and Agriculture Lars Sponheim:

We must develop and communicate the story of Norwegian food production and to a much greater extent do what the French people do. We must link food production to what is known as “terroir” in France, i.e. the indigenous, the identity making and specificity of soil and place.
(Sponheim, 2005)

The notion of local food became part of the more general concept of food specialties, and the meaning of local food and food specialties was established by being presented as different from bulk products. In 2009, the Minister of Food and Agriculture, Lars Peder Brekk, mentioned the relationship between bulk and niche/specialty products:

Production of food specialties offers the opportunity to achieve good prices in the market and to maintain Norwegian food tradition and food culture! It is the local products that make the “The taste of Norway” food strategy possible! Both the grocery chains and the food industry have captured these opportunities with reduced investment in bulk and cheap food, with transition to niche food and specialties.¹

In the later promotion of the Specialty and PDO, PGI, and TSG labels, the Ministry of Food and Agriculture and the Norwegian Agricultural Quality System and Food Branding Foundation use “food specialties” as a common designation of the products covered by these schemes.

During the same period as the LFS was developed in Norway, *New Nordic Food* became an established concept and phenomenon following the launch of the *Manifesto for the New Nordic Kitchen* in 2004. The

¹ Brekk, L. P. (2009) “Tale for Norsk sau og geit – Fagorganisasjonen for sau- og geiteholdere,” *regjeringen.no*, http://www.regjeringen.no/nb/dep/lmd/aktuelt/taler_artikler/ministeren/landbruks--og-matminister-lars-peder-bre/2009/innlegg-mote-hos-norsk-sau-og-geit-.html?id=573325 (date accessed 26.11.2018).

common Nordic effort in food culture has also contributed to making Norway a so-called “food country” (Matland) (Dånmark, 2008) or “food nation” (Matnasjon) (Brekke, 2009; Vedum, 2012; Stortingsmelding nr. 9 (2011–2012: 125); Dale, 2018). In 2017, *Food Nation Norway* (Matnasjonen Norge) was established as a new political framework for business development and value creation.² New qualities, such as food specialties and local food, are considered important in the building of the *Food Nation Norway*.

Previous research shows variations in the use and understanding of the concept of LFSs, both between and within the *emic* (consumers and stakeholders) and *etic* (researchers) groups. Based on studies of the Norwegian context and consumers’ concepts of local food, Amilien et al. (2008) suggest a threefold typology: *Local food*: products from the specific geographical area near a person’s residence; *Localized food*: products that in some way (recipe, reputation, tradition) have a cultural anchoring in a special geographical area and are known outside the original area of production, and *Terroir food*: food production process and the environment (for example the soil) where the production occurs. However, few if any of the scholarly contributions focusing on the consumption of Norwegian food specialties have studied the personality traits of their consumers. In this article, we expand on and explore the nuances of the phenomenon of LFS consumption, and more specifically consider the characteristics of the consumers. We ask, *Are there any personality traits that characterize these consumers?*

In the next section, we discuss the Big Five personality trait model. In Section 3, we review studies of consumers’ personalities and consumption of LFSs. In Section 4, we describe our data sources, methods, and analytical perspective in greater detail. In Section 5, we present the results from logistic regression models including personality variables. In Section 6, we test the connection between attitudes toward the consumption of LFSs and personality traits. In the final section, we discuss the results and draw some conclusions.

2 Personality

An individual's personality consists of the intensity of his/her thoughts, feelings, and behavior relative to other people. The personality of an individual defines how she responds to the world around her. Personality develops over time, from birth to adulthood, and it is thought to be relatively stable from around 30 years of age (McCrae and Costa, 2003). Personality comprises hundreds of different traits or qualities, and these traits vary in degree. For example, two individuals may be described as neurotics, but one may be more neurotic than the other. The sum of all the traits defines the individual as a person and determines how she will react in different situations or what choices she will make. Additional to other contextual conditions, her personality will determine whether she will approach decisions cautiously or impulsively, act emotionally or rationally, or make choices deliberately or spontaneously. For some people, it is important to maintain certain moral values in making decisions, while others are guided more strongly by anxiety in their everyday life. Some people are guided strongly by pleasure and instant gratification; for these people, decisions are often impulsive and lack rational judgment.

Personality traits can be measured on the Big Five scale or a five-factor model. This psychological taxonomy assumes that individual personality may be described by five general factors: extraversion, agreeableness, conscientiousness, neuroticism/emotional stability, and openness to experience. Extraversion is comprised of assertiveness, sociability, talkativeness, and the tendency to seek stimulation in the company of others. Individuals who are perceived as extraverts often seek attention and are domineering. Individuals who are perceived as reserved and reflective are classified as introverts, who score low on extraversion. Agreeableness is the tendency to be compassionate and trusting toward others. Individuals who score low on agreeableness are often suspicious and antagonistic toward others. Conscientiousness is about organization, self-discipline, and the ability to work hard to reach goals. Neuroticism/emotional stability concern the degree to which the individual is vulnerable to psychological stress or whether the individual is calm and stable. Openness to experience refers to curiosity, creativity, preference for variety and novelty.

None of the five factors can be observed directly. However, by using a questionnaire the latent variables measuring the five factors can be estimated through models such as the graded response model. Table 1 shows descriptions of the Big Five from Almlund et al. (2011).

² <https://www.regjeringen.no/no/tema/mat-fiske-og-landbruk/mat/innsikt/matnasjonen-norge/id2593412/>

Table 1.
The Big Five domain and its facets*

Big Five Personality Factor	American Psychology Association Dictionary Description	Facets (and correlated trait adjective)	Related traits
Extraversion	“an orientation of one’s interests and energies toward the outer world of people and things rather than the inner world of subjective experience; characterized by positive affect and sociability”	Warmth (friendly) Gregariousness (sociable) Assertiveness (self-confident) Activity (energetic) Excitement seeking (adventurous) Positive emotions (enthusiastic)	
Agreeableness	“the tendency to act in a cooperative, unselfish manner”	Trust (forgiving) Straight-forwardness (not demanding) Altruism (warm) Compliance (not stubborn) Modesty (not showing off) Tender-mindedness (sympathetic)	Empathy Perspective taking Cooperation Competitiveness
Conscientiousness	“the tendency to be organized, responsible, and hardworking”	Competence (efficient) Order (organized) Dutifulness (not careless) Striving for achievement (ambitious) Self-discipline (not lazy) Deliberation (not impulsive)	Grit Perseverance Delay of gratification Impulse control Achievement striving Ambition Work ethic
Neuroticism/ Emotional Stability	Emotional stability is “predictability and consistency in emotional reactions, with absence of rapid mood changes.” Neuroticism is “a chronic level of emotional instability and proneness to psychological distress.”	Anxiety (worrying) Hostility (irritable) Depression (discontented) Self-consciousness (shy) Impulsiveness (moody) Vulnerability to stress (not self-confident)	Internal vs External Locus of control Core self-evaluation Self-esteem Self-efficacy Optimism Axis I Psychopathologies (mental disorders) including depression and anxiety disorders
Openness to experience	“the tendency to be open to new aesthetic, cultural, or intellectual experiences”	Fantasy (imaginative) Aesthetic (artistic) Feelings (excitable) Actions (wide interests) Ideas (curious) Values (unconventional)	

*Adapted from Almlund et al. (2011)

3 Research on Personality, Food Consumption, and LFSs

Consumption of LFSs has been approached by scholars from a variety of disciplines with a range of perspectives and research questions. Studies on Norwegian LFSs have focused on issues such as production and quality development (Kvam et al., 2014; Stræte, 2008), marketing (Amilien and Hegnes, 2004), logistics and distribution (Dreyer et al., 2016; Åsebø et al., 2007), government intervention and

governance structures (Halkier et al., 2017), and food culture (Hegnes, 2013). To broaden understanding of what factors condition consumer choices, we focus specifically on the relationship between personality and consumption of LFSs. Different approaches have been used to study this narrower phenomenon, both in regard to products and the understanding of personality. Sidali and Hemmerling (2014) concluded that “Both subjective and object-based perceived authenticity significantly influence the purchase intention of food specialties” (2014: 1692). Miroso and Lawson (2012) found that “A range of personality and other personal characteristics differ between local and nonlocal food buyers, with the former segment being more liberal, interested in quality, and frugal” (2012: 816).

Most contributions linking personality and the Big Five model to food consumption are concerned with the psychological/physiological health factors, such as personality and dietary styles (e.g., Forestell and Nezlek, 2018; Keller and Siegrist, 2015). One exception is Bazzani et al. (2017), who found that personality traits can be sources of heterogeneity in consumers’ preferences for locally produced applesauce.

The most common way to construct personality traits variables from the Big Five is to use the mean of the items for each individual. This is a basic and unnuanced method that gives equal weight to each of the items for each personality trait. This method was used in the papers cited above. Our contribution is to construct latent personality variables with the graded response model using the Big Five taxonomy. The latent variables are then included in choice models for LFSs. In this way, we are better equipped to analyze the connection between LFSs and personality.

4 Data and Methods

To unpack the relationship between individuals’ personalities and choice of LFSs, we use the graded response model to estimate the latent Big Five personality traits. The five latent variables are then incorporated into binary logistic regression models together with other covariates. Then the models are estimated with maximum likelihood to find associations between personalities and attitudes toward LFSs. The models are used with data from the Norwegian Monitor database (NM) to calculate probabilities in relation to LFS.

The Norwegian Monitor database

The NM is the most comprehensive consumer survey in Norway. It is a nationally representative cross-sectional survey of adults aged 15 to 95 years. It has been conducted biennially since 1985, and it consists of a large number of items on consumption, background, morality, and health. Our study is based on the 2015 version, which was the first year in which responses to items from the Big Five personality model were included in the database.

The personality traits are latent, but may be revealed in responses to items on behavior. Since the 1980s there has been a vast amount of research concerning personality measures. John et al. (1991) constructed a 44-item Big Five Inventory (BFI) to represent personality. This was done to satisfy the need for a brief inventory that would allow efficient and flexible measurement of the five dimensions. In the following years, a variety of other measures to measure the Big Five were developed (John and Srivastava, 1999).

Engvik and Clausen (2011) developed a 20-item Norwegian version of the BFI, the BFI-20. This version showed satisfying results compared with the 44-item version. This version is included in the NM. In the survey, the individuals read a statement and tick the point on a seven-point scale that describes them best. The instructions are as follows: “Below are a number of statements that may describe different people. Please tick the box that describes you most accurately. Do not overthink each statement, but tick the box that you feel describes you best—one tick per line. 1 is ‘Strongly Disagree’ and 7 is ‘Strongly Agree’.”

Table 2 contains the questions included in NM together with their mean and standard deviations. An individual may have different personalities in different situations. In addition, a personality may be different in front of different people and may depend on the person’s mood. Personality may be different if the person is under the influence of a drug. This means that the Big Five personality taxonomy should be measured as the individual’s usual personality. Note that in the survey the questions are mixed, but in Table 2 they are grouped under their respective factor for readability.

Table 2.
The Norwegian Version of the Big Five*.

	Big Five Personality	Mean	SD
	Extraversion		
1	Is talkative	4.52	1.64
2	Tends to be quiet	3.64	1.77
3	Is outgoing, sociable	4.97	1.56
4	Is sometimes shy or inhibited	2.83	1.65
	Agreeableness		
5	Can be cold and aloof	2.63	1.54
6	Is helpful and unselfish with others	5.33	1.28
7	Is sometimes rude to others	2.92	1.64
8	Is considerate and kind to almost everyone	5.98	1.08
	Conscientiousness		
9	Does a thorough job	5.76	1.16
10	Tends to be disorganized	2.50	1.59
11	Makes plans and follows through with them	4.93	1.38
12	Can be somewhat careless	3.41	1.64
	Emotional stability/Neuroticism		
13	Is depressed, blue	2.36	1.54
14	Is relaxed, handles stress well	4.69	1.62
15	Worries a lot	3.69	1.84
16	Gets nervous easily	3.15	1.70
	Openness to experience		
17	Is original, comes up with new ideas	4.09	1.58
18	Has an active imagination	4.30	1.73
19	Likes to reflect, play with ideas	4.32	1.65
20	Has few artistic interests	3.65	2.05

*The scale is a seven-point Likert scale where 1 is “strongly disagree” and 7 is “strongly agree.”

Table 3 shows the outcome variables y_1 to y_5 together with the predictors (except the personality variables from the Big Five). The sample consists of individuals from 20 to 89 years of age. The number of individuals in the sample is 3501. Table 3 shows that 36 percent of the individuals in the sample purchase Norwegian food specialties more than once a month. Twenty-four percent of them are willing to pay more (than currently) for local food. Forty-six percent are very interested or quite interested in buying Norwegian food specialties from rural areas, such as the cheese, fish, and flatbread mentioned in the question. Ninety-one percent had purchased Norwegian food specialties in the previous year while 45 percent stated that it was very important that their supermarket had a large selection of locally produced Norwegian food specialties. We can see a slight difference in the way the statements are formulated: y_1 and y_4 concern Norwegian food specialties. There is nothing in the statement about local production; y_2 is simply about local food. There is nothing in the statement about food specialties; y_3 and y_5 concern locally produced Norwegian food specialties. This means that the respondents may interpret the five questions differently.

The predictors are age and income, which are continuous, and nine indicator variables for gender, social status, education, and place of residence. Before model estimation, age and income are standardized (the mean is subtracted from each score and the result is divided by the standard deviation) to obtain approximately the same scale. We see from Table 3 that the average age is 50 years, the average household income is 502,000 NOK, the sample is 48 percent male, 67 percent of the respondents are married or cohabiting, and 60 percent have three or more years of university education. More than half of the people in the sample live in the Oslo area or another eastern area, and 25 percent live in one of the four major cities of Norway (Oslo, Bergen, Trondheim, and Stavanger).

Table 3.
The outcome variables and the predictors used in the models.

Variable	Explanation	Mean	SD
<i>Outcome variables</i>			
y ₁	= 1 if the respondent purchases Norwegian food specialties more often than once a month	0.36	0.48
y ₂	= 1 if the respondent is willing to pay more on a regular basis for local food, that is, food produced in the same area in which it is sold	0.24	0.43
y ₃	= 1 if the respondent is very, or quite interested in buying Norwegian food specialties from different rural areas of Norway, such as “Blue cheese from Tingvoll,” “Rakefisk from Valdres,” or “Flatbread from Røros” in the supermarket close to where I live	0.46	0.50
y ₄	= 1 if the respondent has purchased Norwegian food specialties in the previous 12 months	0.91	0.29
y ₅	= 1 if it is very important or quite important for the respondent that a supermarket for grocery shopping has a large selection of locally produced Norwegian food specialties	0.45	0.50
<i>Predictors</i>			
Age	= Age of the respondent in years	50.02	17.44
Income	= Household income in 2015 (in 1000 NOK)	502	268
Male	= 1 if male, 0 otherwise	0.48	0.50
Married	= 1 if married or cohabiting, 0 otherwise	0.67	0.47
Univ	= 1 if 3 years or more of university education, 0 otherwise	0.60	0.49
R ₁	= 1 if place of residence is in the Oslo area	0.24	0.43
R ₂	= 1 if place of residence is in another eastern area	0.29	0.45
R ₃	= 1 if place of residence is in western Norway	0.24	0.43
R ₄	= 1 if place of residence is in the middle of Norway	0.15	0.35
R ₅	= 1 if place of residence is in northern Norway	0.09	0.28
BCity	= 1 if place of residence is one of the four largest cities of Norway: Oslo, Bergen, Trondheim, or Stavanger	0.25	0.43

The sample consists of individuals from 20 to 89 years of age: $n = 3501$.

The graded response model

The graded response model was proposed by Samejima (1969). It is defined as follows:

$$P(y_i = k | \theta) = P(y_i \geq k | \theta) - P(y_i \geq k+1 | \theta) = \frac{\exp(\alpha_i(\theta - \beta_{ik}))}{1 + \exp(\alpha_i(\theta - \beta_{ik}))} - \frac{\exp(\alpha_i(\theta - \beta_{i,k+1}))}{1 + \exp(\alpha_i(\theta - \beta_{i,k+1}))}, \quad k = 1, 2, \dots, K \quad (1)$$

which is the probability of choosing response k from K possible choices, where $K = 7$ in our case (on a seven-point Likert scale). Our aim is to find θ for each individual. θ is the latent variable that describes the position of the individual score on the scale from the lowest to highest. These five personality traits are then included in the logistic regression models where the outcomes are y_1 – y_5 . In addition to the personality variables, the predictors in Table 3 are included in the models.

The binary logistic regression model

To model the probability of purchasing/being interested in Norwegian LFSs (y_1 – y_5 in Table 3) we use binary logistic regression models (Cameron and Trivedi, 2005). The models are specified with the following probability function:

$$P_i = \Pr(y_i = 1 | x) = \Lambda(x'\beta) = \frac{e^{x'\beta}}{1 + e^{x'\beta}}, \quad (2)$$

where $i = 1, \dots, 5$ denote the binary outcome variables y_1 – y_5 in Table 3, Λ is the logistic distribution function, x is a vector of explanatory variables (including five personality variables). β is the vector of coefficients to be estimated.

5 Estimation Results

In Table 2, the variables from questions 2, 4, 5, 7, 10, 12, 13, 15, 16, and 20 were reverse coded so that the highest levels of extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience were scored as 7 and the lowest levels as 1. This was done for the graded response model to estimate the parameters and the latent variables correctly. Then, the model in equation 1) was used to estimate the five latent personality traits using the `grm` package of R. Figure 1 shows the histograms of the estimated personality variables. They all have means close to 0 and more than 80 percent of the probability mass is between -1.2 and 1.2 for each variable.

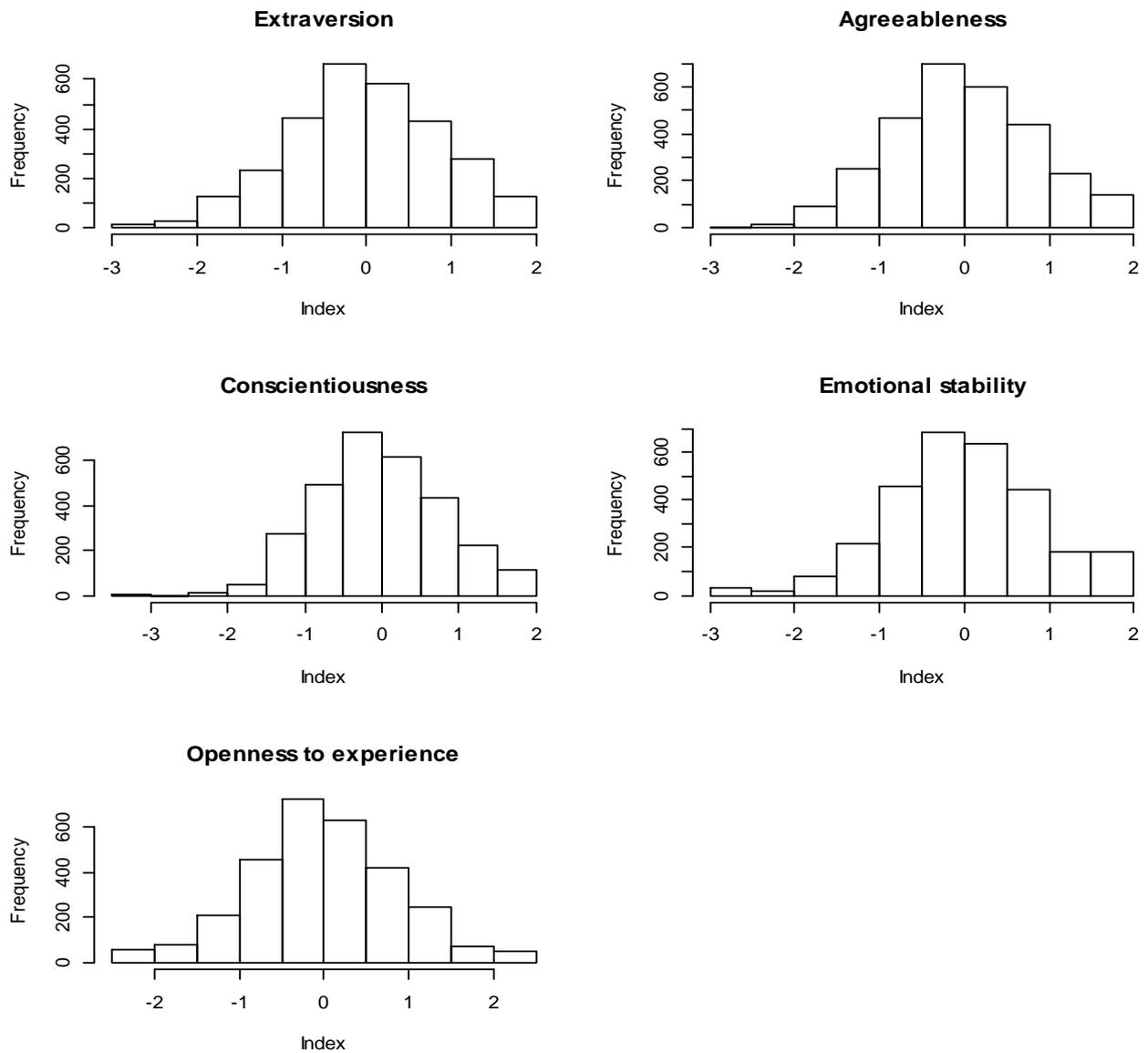


Figure 1. Histograms of the estimated Big Five personality variables.

Then, the estimated latent personality variables were inserted into equation 2) together with the predictors in Table 3. The probabilities of purchase/being interested in/willingness to pay for Norwegian LFSs were then estimated using the following model:

$$\Pr(y_i = 1 | x) = \Lambda(\beta_1 + \beta_2 EE + \beta_3 AA + \beta_4 CC + \beta_5 ES + \beta_6 OE + \beta_7 Age + \beta_8 Inc + \beta_9 Male + \beta_{10} Married + \beta_{11} Univ + \beta_{12} R_2 + \beta_{13} R_3 + \beta_{14} R_4 + \beta_{15} R_5 + \beta_{16} BCity), \quad (3)$$

where $\Lambda(\bullet)$ is the logistic distribution function and $y_i, i = 1, \dots, 5$ are the outcome variables in Table 3.

Table 4.
Results of the logistic regression models.

	p_1	p_2	p_3	p_4	p_5
Intercept	-1.05 (0.13)*	-1.21 (0.14)*	-0.24 (0.12)*	2.25 (0.21)*	-0.24 (0.12)*
Extraversion	0.11 (0.05)*	-0.14 (0.05)*	0.09 (0.04)*	0.27 (0.07)*	-0.03 (0.04)
Agreeableness	-0.01 (0.05)	0.12 (0.06)*	-0.03 (0.05)	-0.04 (0.08)	0.03 (0.05)
Conscientiousness	-0.07 (0.05)	0.10 (0.06)	0.03 (0.05)	0.02 (0.08)	0.10 (0.05)
Emotional Stability	0.09 (0.05)*	0.04 (0.07)	-0.01 (0.05)	-0.07(0.08)	0.05 (0.05)
Openness to experience	0.21 (0.04)*	0.26 (0.05)*	0.24 (0.04)*	0.25 (0.07)*	0.24 (0.04)*
Age	0.14 (0.04)*	0.21 (0.04)*	0.26 (0.04)*	0.15 (0.06)*	0.28 (0.04)*
Income	0.29 (0.04)*	0.16 (0.04)*	0.15 (0.04)*	0.38 (0.08)*	0.02 (0.04)
Male	-0.16 (0.08)*	-0.53 (0.09)	-0.26 (0.08)*	-0.39 (0.13)*	-0.24 (0.08)*
Married	0.26 (0.08)*	0.00 (0.09)	0.09 (0.08)	0.56 (0.13)*	0.23 (0.08)*
Univ	0.19 (0.08)*	0.25 (0.09)*	0.33 (0.08)*	0.29 (0.13)*	-0.03 (0.08)
R ₂	0.26 (0.11)*	0.08 (0.13)	0.01 (0.11)	-0.16 (0.20)	-0.04 (0.11)
R ₃	0.36 (0.11)*	0.07 (0.12)	-0.36(0.10)*	-0.09 (0.19)	0.14 (0.10)
R ₄	0.68 (0.12)*	0.37 (0.14)*	0.33 (0.12)*	-0.27 (0.20)	0.08 (0.12)
R ₅	0.49 (0.15)*	0.60 (0.16)*	-0.05 (0.15)	-0.09 (0.26)	0.07 (0.14)
BCity	-0.21 (0.10)*	-0.22 (0.11)	-0.17 (0.09)	0.13 (0.17)	-0.23 (0.09)*

We see from Table 4 that the personality traits of extraversion and openness to experience are significant in most of the five models. However, extraversion is significant and positive in $p_1, p_3,$ and $p_4,$ but not in $p_5.$ In $p_2,$ it is negative and significant. p_2 is about local food, while the other questions are about food specialties (local or nonlocal). Agreeableness is positive and significant for local food in $p_2,$ conscientiousness is insignificant in all the models, emotional stability is positive and significant in $p_1,$ the probability of purchasing Norwegian food specialties more than once a month, while openness to experience is positive and significant in all the models. We also see that the parameters for openness are rather similar in all the models.

It is easy to calculate the expected probabilities from the estimated parameters in Table 4 because the continuous variables are standardized. This was done by Gustavsen and Hegnes (2019) who showed that the expected variables were very similar to the mean values in Table 3. We see from the other predictors that, on average, older individuals are more interested in food specialties and local food than younger people. Higher-income people are more interested in them than lower-income people. On average, men are less interested than women, and educated individuals are more interested than uneducated individuals. People living in the country are more interested in LFSs than people living in the Oslo area (when age and income level are controlled for). By the same token, people living in one of the four big cities in Norway are less interested in local food and food specialties (when age and income level are controlled for).

6 Personality and Consumption of LFSs

To capture the quantitative connection between personality and behavior in relation to LFSs more accurately we estimated the same models as in Table 4 using nonparametric bootstrapping with 500 iterations. In each iteration we constructed the difference of the probability evaluated at the 90th quantile

and 10th quantile of one personality trait, holding all the other personality traits and other predictors fixed at their means. From the bootstrapped differences in probabilities, we constructed the average differences and their respective *t*-statistics. The *t*-statistics could then be used to test the following hypotheses:

- There is no difference in attitudes toward LFS between individuals high in extraversion and those low in extraversion.
- There is no difference in attitudes toward LFS between individuals high in agreeableness and those low in agreeableness.

A similar hypothesis was proposed for each of the remaining three traits.

The significant associations at the 5% level when $|t| > 1.96$ are marked with an asterisk. These results are shown in Table 5.

Table 5.
The difference in attitudes toward LFS between individuals high and low in each personality trait^a

	Probabilities	Extra- version	Agree- ableness	Conscien- tiousness	Emotional Stability	Openness to experience	Mean
p_1	Purchase Norwegian food specialties more than once a month	0.06* (2.56)	-0.00 (-0.18)	-0.04 (-1.43)	0.05* (2.06)	0.11* (4.83)	0.36* (43.36)
p_2	Willing to pay more for local food	-0.06* (-2.80)	0.05* (1.99)	0.04 (1.74)	0.02 (0.72)	0.10* (5.11)	0.23* (30.16)
p_3	Interested in buying Norwegian food specialties from rural areas of Norway	0.05* (2.13)	-0.02 (-0.56)	0.02 (0.61)	-0.00 (-0.09)	0.13* (5.83)	0.45* (52.84)
p_4	Have purchased Norwegian food specialties in the previous 12 months	0.04* (3.55)	-0.01 (-0.55)	0.00 (0.29)	-0.01 (-0.91)	0.04* (3.19)	0.93* (200.07)
p_5	A large selection of locally produced food specialties is important when choosing a supermarket	-0.02 (-0.74)	0.02 (0.72)	0.05* (1.97)	0.03 (1.13)	0.13* (5.44)	0.44* (49.89)

^a *t*-values in parentheses. The numbers marked with an asterisk are significantly different from zero at the 5% level.

The rows in Table 5 show the estimated average differences in probabilities between the 90th quantile and the 10th quantile of the personalities, and the respective *t*-statistics. In the rightmost column are the respective probabilities evaluated at the mean of all the covariates. Because the mean of each personality variable is close to 0, half the variance in the trait is above the mean probability and half is below; for example, p_1 , the probability of having purchased Norwegian food specialties during the last 12 months, is 0.36. The difference in openness to experience in p_1 is 0.11. This means that about 30% of individuals low in openness to experience (in the 10th quantile) are expected to purchase Norwegian LFSs while about 42 percent of those with high scores (in the 90th quantile) are expected to purchase Norwegian LFSs.

We see from Table 5 that *t* tests of the hypothesis that there is no connection between attitudes toward LFSs and personality traits were rejected in 12 out of 25 tests. Most important is the openness to experience trait, which was the most important trait in all the models. For example, in p_3 , an interest in buying food specialties from different rural areas in Norway, 45% are interested, but in the lowest 10th quantile of openness to experience, only 38 percent are interested and in the upper 90th quantile, 52 percent are interested.

7 Conclusion

After the (re)introduction of LFSs in Norway, a variety of explanations have been proposed for their development, qualities, and consumption patterns. In this paper, we have attempted to expand this knowledge by analyzing the impact of consumers' personalities on their attitudes toward and consumption of such products.

Our empirical results show that in all models the latent variable openness to experience is a significant predictor of choosing LFSs. This personality trait was one of the most important predictors of all the choices made by individuals. Openness to experiences includes interests in trying new things, new foods, and new tastes. From a psychological perspective, this may explain the greater interest in food specialties by people who score high on openness to experience than those who score low. However, the psychological interpretation should be supported by a sociological perspective.

After World War II, there was a restructuring of production, distribution, and consumption of food in Norway. A strong focus on cooperatives, soft discounts, and importing in this period contributed to a more standardized product range and importation of products. This resulted in a kind of unlearning, detachment, or alienation of consumers from the "old" food qualities. A consequence of this historical development is that since the late 1980s, the cultural and political discourse around food in Norway has emphasized LFSs as a *new* phenomenon in the Norwegian context, in line with the so-called *quality turn* (Goodman, 2003). Although the introduction of LFSs in the late 1980s is partly a *return* to old qualities, they have nevertheless been communicated and perceived as new because they had not been prominent in the Norwegian market for some time. This evolution may thus be recognized as a reversed example of an *invented tradition* (Hobsbawm, 1983), or as forgotten food traditions. The degree of awareness of the relationship between food, people, and places in Norwegian food culture can thus be understood as an example of social memory and how people remember (Connerton, 1989) and forget (Connerton, 2009).

Discursive construction may have other implications for different consumer personalities. Whereas the turn to new qualities may be more attractive for consumers with high openness to experience, a return to old qualities may be more attractive to consumers low in that trait. Therefore, one may ask, what if the qualities of LFS had been framed differently in communication and discourse, as a quality *return*? Would this have had different impacts on people with differing personalities and those low on openness to experience? If so, stakeholders should consider the connection between that psychological trait, LFSs, and the discursive conditions when strategizing.

A methodological challenge in our analysis is the survey respondents' understanding of the concept of LFSs. As mentioned above, previous research shows variations in the use and understanding of these concepts, both between and within the *emic* (the group of consumers and stakeholders) and *etic* (researchers) groups. Future analyses should focus on this challenge.

In summary, our analysis indicates a need to develop more knowledge and understanding of consumers' personalities, preferences and behavior, and it should relate this to discursive dynamics. New research questions and hypotheses may be related to the question of whether openness to experience is related to the history of a product in the market and the theory of *diffusion of innovations* (Rogers, 2003 [1962]). Is a product that has been in the market for a longer period understood to be less "new," aesthetically or culturally? What are the consequences? These questions may be approached by comparing the age of different foods in the market and assessing whether this has an impact on how they are perceived by consumers scoring low and high on openness to experience. A possible way to do this may be to relate consumers' personalities to products with different qualities introduced at different stages of the market. The combination of personality and adoption may be studied further to understand the impact of personality on consumption in general. In addition to LFSs, this may include organic food, "standard" food and also new qualities represented by products such as food made from insects, genetically modified foods, and other products. More knowledge about early adopters of sustainable qualities and their personal traits should be of interest in the transition to more sustainable consumption.

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