RELATIONSHIP BETWEEN IMPLICIT AND EXPLICIT ATTITUDES TOWARDS DOMESTIC AND FOREIGN FOOD BRANDS AND PERSONALITY TRAITS

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Abstract. The most important line of the research is the relationship of implicit and explicit attitudes towards domestic and foreign food brands with personality traits. Although researchers confirm the relevance of these studies, there are relatively few empirical findings on the relationship of "Big Five" personality traits with consumer attitudes. Research aim: to study the relationship of implicit and explicit attitudes towards brands of domestic and foreign food products with the personality traits of consumers. Participants $N = 131$, aged 17-57 ($Mdn = 31$). Measurements: developed by the authors affective and cognitive Implicit Association Tests (IATs), Self-Concept IAT, affective and cognitive explicit procedures; and "Big Five" Inventory – 2 (BFI-2); demographic questionnaires. With the help of factor analysis, independent overall implicit and "overall" explicit attitudes towards food brands were built, the main components of which are both their affective and cognitive foundations, and attitudes measured using the Self-Concept IAT. Relationships between "overall" attitudes, their components with BFI-2 scales and their facets have been revealed. Personality traits and their combinations with facets have been revealed that influence implicit, explicit preferences for domestic, foreign food brands and "uncertain" (ambivalent or unexpressed) preferences. Differences in the role of personality traits in the choice of cognitive and affective bases of both implicit and explicit attitudes have been found, which sometimes lead to opposite results.

Keywords: cognitive, affective attitudes' bases; "overall" attitude; explicit, implicit brand attitudes; personal traits.

Introduction

The topicality of this research is conditioned by the lack of scientific papers aimed at studying explicit and implicit attitudes and their relationship with personality traits in the context of consumer psychology.

The concept of attitude in social psychology is important because attitude determines human behavior. Despite the fact that science, in particular implicit social cognition, has accumulated quite a lot of experience in the study of unconscious, automatic implicit attitudes and methods for measuring them, the cognitive approach still dominates in research on consumer behavior [1-2]. Since consumer behavior often turns out to be irrational, it is the study of implicit - automatically activated attitudes that allows us to better understand how automatic processes unconsciously influence consumer choice and consumer behavior. Therefore, in recent years, there has been a growing body of studies aimed at measuring attitudes implicit towards brands and methods for measuring them. This trend is confirmed by the studies of numerous scientists working in the field of consumer behavior psychology who believe that for the implementation of consumer choice it is not enough to consider only conscious, deliberate processing of information and indicate the need to use implicit measurements to measure consumer attitudes [3-10]. It is known that implicit and explicit attitudes are based on different cognitive mechanisms and predict consumer behavior in different ways [7; 11]. Implicit attitudes are mainly the result of associative processes, while explicit ones are the result of propositional ones [12-14].

The modern understanding of attitude indicates that it is a general assessment of an object based on cognitive, affective and behavioral information [15]. This definition assumes three substantive components of attitude, which constitute a generalized assessment of attitude and indicate its general structure.

Analyzing consumer attitudes, scientists relied on the idea that consumer attitudes at their core are two-dimensional, as consumers satisfy both their hedonistic (affective) and utilitarian (cognitive) needs. This provision was empirically tested using two self-assessment procedures (semantic differential) - hedonistic (affective aspect) and utilitarian (cognitive aspect) [15-17]. The use of the accomplishments of neuroscience in implicit social cognition [18-20] has opened up the possibility of measuring not only automatic affective associations, but also automatic semantic associations underlying implicit consumer attitudes [15; 21-22]. The use of this new methodology allowed the authors of this paper to develop various experimental IAT procedures, as well as self-assessment procedures for measuring the affective and cognitive bases of consumer attitude [15].

We believe that taking into account the automatic affective and semantic (cognitive) processes underlying consumer attitudes will contribute to a deeper understanding of how the overall representation of the attitude is formed. The authors have developed various experimental IAT procedures and self-assessment procedures to measure the affective and cognitive bases of consumer attitude [15]. This article is a continuation of the study measuring the affective and cognitive bases of implicit and explicit attitudes towards domestic and foreign food brands [15], in which the developed corresponding toolkit was described in detail. The data of the research [15] will be used in this paper.

There are only a few studies [21-22] that prove that the affective and cognitive bases of implicit attitudes are different structures that independently form a common implicit attitude towards food. Each of the bases of attitude has a specific effect on the choice of products in certain conditions.

One of the main research issues in the psychology of consumption and marketing is the study of the importance of the role of personality traits on the buyers' intention to purchase a product or service. In this regard, researchers often point to the need to study the personality traits of the "Big Five" and their relationship with consumer attitudes.

The results of the above research line are presented in the works of some scientists [23-30].

It should be noted that in consumer psychology and marketing, the "Big Five" personality traits were mostly associated with brand personality. According to [31, p. 347], brand personality is defined as "the set of human characteristics associated with a brand". The study [32] also highlights the idea that brand personality has a symbolic or self-expressive function. Consumers associate personality traits with brands because they perceive brands as extensions of themselves [33]. However, there is not enough research to explore the relationship of "Big Five" personality traits with consumer attitudes and consumer decision-making processes. Let us turn to the analysis of various studies of the selected problem.

For example, a study [29] hypothesized how general consumer attitudes, personality traits, and demographics can influence the choice of domestic and multinational brand products. Consumers with a high level of open-mindedness were found to have more positive attitudes towards multinational products than consumers with a low level.

The study [23] shows that extraversion and open-mindedness are positively associated with the hedonic value of products and that personality traits either directly (e.g. openness) or indirectly (e.g. extraversion, via hedonic value) influence brand affect which in turn drives attitudinal and purchase loyalty. In the next study, a group of scientists [30] carried out an empirical test of how personality traits affect the intention of consumers to purchase global brands in different countries of the Balkan region. The results showed that the studied personality traits, especially extraversion, neuroticism, conscientiousness and open-mindedness (open-mindedness) influence the buyers' intentions of purchasing a global brand.

Weighing the "Big Five" personality traits and their impact on hedonic and utilitarian motivations was also examined in a study of shopping on the Internet [26]. Neuroticism, extraversion, and open-mindedness were found to be positively correlated with hedonic and utilitarian motivations. According to the authors, people who are more neurotic, more extroverted, or more open to new experiences tend to seek pleasure while shopping online. It is shown that consumers with more pronounced neuroticism, extraversion and open-mindedness have hedonic motivation to buy. Consumers with higher neuroticism, agreeableness or open-mindedness tend to shop online for utility, functionality, i.e. utilitarian motivation, which is an important key factor in driving search intention.

Another study [34] examined the role of "Big Five" personality traits and their relationship to the value of perceived message (persuasion) – information on a website that could be both utilitarian and hedonistic. At the same time, the researchers used the Elaboration Likelihood Model as explanatory mechanisms for the processes of processing the information of the analyzed message (for on-line purchases). It was found that consumers with higher levels of agreeableness and conscientiousness used a central information processing route to analyze the message, which contributed to the identification of the utilitarian value of purchases. Consumers with higher levels of emotional stability, openness, and extraversion used the peripheral information processing route, and it turned out to be important for the hedonic value of purchases. Referring to a previous study [23], it was noted that extraversion and open-

mindedness are positively related to hedonic product value, attitude towards the brand and purchase loyalty.

Other researchers also pointed out the importance of the relationship of such personality traits of the "Big Five" model as openness, neuroticism with social attitude [35]. In a study [36], it was shown that consumers with a high level of conscientiousness are responsible, prone to control and planning, and can choose utilitarian values more than hedonistic ones. Another group of researchers believe that personality traits can explain an important part of the perception, judgments and behavior of consumers [30; 37].

Although previous studies have shown that personality traits influence consumer behavior, however, according to scientists, the intention to buy a product remains to be empirically investigated [30].

Despite the non-trivial and varied results obtained in the works we analyzed, the influence of personality traits on explicit brand preferences was nevertheless considered. As for the studies of implicit attitudes, the research should be noted aimed at studying attitudes towards brands using the implicit association test (IAT) and self-assessment procedures [5-6; 11]. It has been found that the Implicit Association Test (IAT) can be successfully used to measure implicit attitudes towards different product brands. The sensitivity and usefulness of IAT was also confirmed in measuring consumer attitudes, in a study aimed at investigating the experimental impact of global brand information on consumer perceptions [38-40].

The results of various studies have also shown that when using self-assessment measurements, consumers prefer foreign brands, and when using implicit measurements, they prefer brands of local manufacturers. When studying attitudes towards local and foreign brands, special attention was mainly paid to explicit and implicit consumer ethnocentrism as a mechanism for preferring local product brands over foreign ones [41-44]. There is another opinion that the personality traits of consumers determine preferences for domestic and local brands.

However, the influence of personality traits on implicit and explicit attitudes towards domestic and foreign food brands, taking into account the affective and cognitive foundations of attitudes in the literature was not considered.

The above theoretical analysis indicates the relevance and necessity of conducting an empirical study aimed at measuring implicit and explicit attitudes towards brands of domestic and foreign products and their affective and cognitive foundations, as well as their relationship with personality traits.

The aim of this research is to study the relationship between implicit and explicit attitudes towards brand of domestic and foreign food and personality traits.

Research question. (1) Is there a relationship between consumer personality traits and implicit and explicit attitudes towards domestic and foreign food brands, taking into account the affective and cognitive bases of attitudes? (2) What role do personality traits play in the implicit and explicit preferences of domestic and foreign food brands?

Materials and methods

Participants. Students and graduate students: $N = 131$, aged 17-57 years ($Mdn = 31$). Male – 42, female – 89. All participants live in Latvia.

Measures – I. To measure **attitudes towards domestic and foreign food brands**, specially designed and methodically balanced three procedures of implicit association tests (IAT) and two explicit procedures were used [15].

IAT procedures. The *affective* and *cognitive* IAT procedures were developed in accordance with the classic two-category IAT [45]. The procedure for the two-category Self-Concept IAT was developed on the basis of the IAT reviewed in [46].

Affective IAT measures the automatic affective associations of domestic and foreign food brands with attributes having positive or negative valence. *Cognitive IAT* measures the automatic semantic (cognitive) associations of domestic and foreign food brand with attributes that characterize the price and quality of foods [15]. Low negative scores correspond to positive automatic associations with domestic brands, and high positive ones correspond to foreign ones.

Self-Concept IAT measures automatic associations between categories: "Self" and "Others" and attributes characterizing domestic or foreign food brands [15]. Low negative scores correspond to positive automatic associations with foreign brands, and high positive scores correspond to domestic ones.

Explicit procedures. The basis for the development of affective and cognitive self-assessment procedures was the use of some aspects of the concept of Osgood's semantic differential [47], as well as the ideas of modern scientists based on it, to study attitudes towards brands of various product categories [15]. Low scores correspond to positive automatic associations with foreign brands, while high scores correspond to domestic ones.

Affective explicit procedure measures the explicit preferences of domestic or foreign food brands, which are based on the assessment of bipolar adjectives characterizing the affective properties of perception of these food brands. *Cognitive explicit procedure* measures the explicit preferences of domestic or foreign food brands based on the assessment of bipolar adjectives characterizing the perception of the price and quality of the brands of these foods.

Cronbach's Alpha. The internal consistency index of the *affective explicit procedure* the Cronbach's $\alpha = 0.91$, and of the *cognitive explicit procedure* the Cronbach's $\alpha = 0.88$. Both procedures indicate excellent and good internal consistency of each scales' items respectively.

Measure – II. The "Big Five" Inventory-2 (BFI-2) [48], adapted by [49] was used to measure personal traits. The BFI-2 methodology consists of 60 items formulated in short phrases. Each of the five BFI-2 scales consists of three subscales (facets), which include four items each – two direct and two reverse [49]. High scores for each scale and facet correspond to high expression of the respective variables.

Extraversion (E). The main facet is *Sociability*: ability for social interaction and social contacts (sociability, openness, talkativeness, usually the absence of shyness and self-absorption). The *Assertiveness* facet: readiness and desire to express personal opinions and achieve goals in social situations (assertiveness, dominance, leadership, confidence that it is easy to influence people easily, preference for making decisions yourself). The *Energy Level* facet: a state of emotional positive arousal, enthusiasm and level of physical activity that cannot be fully explained by sociality (a rare feeling of tiredness, activity, cheerfulness, fullness of vigor, radiating enthusiasm and infecting others with it). Cronbach's Alpha $\alpha = 0.87$.

Agreeableness (A). The central and emotional aspect is the *Compassion* facet: an active emotional concern for the well-being of other people (empathy and kindness, sympathy for other people, responsiveness and disinterestedness, helping even if it is disadvantageous). The *Respectfulness* facet: an attitude towards others, taking into account their personal preferences and rights, while suppressing antagonistic and aggressive impulses (respectful attitude towards others, tactfulness in communication, lack of rudeness, politeness and courtesy in communication). The *Trust* facet: an important cognitive aspect is positive beliefs about others (lack of looking for errors in the actions of other people, of suspicion of their intentions, trusting them, a tendency to see only good in them). Cronbach's Alpha $\alpha = 0.82$.

Conscientiousness (C). The control of impulsiveness includes the *Organization* facet: a preference for order and structure, which is a defining and largely inhibitory aspect of conscientiousness (lack of a tendency to disorganization, composure, striving for order in everything, diligence and accuracy, a preference not to leave a mess behind). The *Productiveness* facet: diligence and perseverance in achieving goals covers a more active aspect of conscientiousness and helps explain why this area is a powerful predictor of academic achievement and work productivity (preferring to work rather than rest, ease of getting started, being productive and getting things done, persistence, getting things done up to the end). The *Responsibility* facet: reliability, commitment to fulfilling duties and obligations reflect the degree of a person's dependence on others and is a prosocial component of conscientiousness (such a person is trustworthy and can always be counted on, is constant, reliable, fulfills obligations, very rarely behaves irresponsibly). Cronbach's Alpha $\alpha = 0.84$.

Negative Emotionality (N). It determines individual differences in the frequency and intensity of negative affect, emphasizes a focus on negative emotional experiences, but is distinct from mental illness [49]. The *Anxiety* facet: the tendency to experience anxiety and fear (such a person is tense, does not cope well with stress, is nervous for any reason, often worries, worries about everything, often worries or is afraid). The *Depression* facet: a tendency towards depression and sadness, which is often

accompanied by low extraversion (low energy and arousal), while mood swings often disrupt social interactions and thus are associated with low Agreeableness (if unsuccessful, the person loses optimism, is inharmonious and dissatisfied with life, often sad, prone to sadness, depression). The ***Emotional Volatility*** facet: this is a person of mood, with emotional "ups" and "downs", emotionally unstable, does not keep emotions under control, unbalanced. Cronbach's Alpha $\alpha = 0.86$.

Open-Mindedness (O). It focuses on the mental, not on the social life of a person [49]. The ***Intellectual Curiosity*** facet: an intellectual, complex, deep thinker, who likes to participate in intellectual and philosophical conversations, very interested in abstract ideas. The ***Aesthetic Sensitivity*** facet: great interest in art; passion for painting, music or literature; his/her values in art and beauty, live perception of theater and poetry. The ***Creative Imagination*** facet: ingenuity, finding non-standard solutions, out-of-the-box and non-stereotypical thinking, ingenuity, generating new ideas, original thinking. Cronbach's Alpha $\alpha = 0.82$.

Measure – III. *Questionnaires* were also used: (1) *preliminary* – to find out how familiar the research participants are with the logos of domestic and foreign brands and their foods; (2) *demographic* – to find out sex, age, marital status, education, occupation, income per family member per month (gross, euros) and attitudes towards domestic and foreign foods that participants use on a daily basis [15].

Procedure. The researchers followed guidelines for confidentiality, voluntary participation, and psychological ethics. Self-reported procedures were followed by all participants First, all 131 participants filled out the preliminary and demographic questionnaires, and "Big Five" *questionnaire*. Then they performed IATs, after which - explicit procedures: affective and cognitive. The procedures for the *affective IAT*, *cognitive IAT* and *Self-Concept IAT*, *affective* and *cognitive* explicit procedures are shown in [15]. 94 participants performed the experimental procedure for affective IAT. 95 participants performed the experimental Cognitive IAT procedure. 102 participants performed the experimental procedure Self-Concept IAT. 66 participants performed all three IAT procedures.

Apparatus. Certified licensed software E-Prime 2®.

Statistical methods

Research of relationship. The relationships between attitudes towards domestic and foreign food brands and personality traits of consumers were studied sequentially for each specific personality trait both for the entire sample and for two groups of participants, which were created according to the median of the considered personality trait. The values of the personality trait above the median were conditionally called "high", and below the median – "low". Pearson's r and Spearmen's r_s correlation coefficients were used to test for a monotonic relationship, non-linear regression analysis – for a non-monotonic relationship (quadratic and cubic models). The effect sizes: r (0.10 – small, 0.30 – medium, 0.50 – large), *R-square* (0.02 – small, 0.13 – medium, 0.26 – large) and 95% confidence intervals for them were used [50-52].

Study of preferences of domestic or foreign brands. One of the most important practical tasks is to consider trends in preferences of domestic or foreign brands depending on personality traits. Personality traits of consumers (from the BFI-2) and their facets can, with some probability most likely close to the average, predetermine both implicit and explicit attitudes towards product brands (Tables 3-4). This assumption allowed us (in regression analysis) to consider brand attitudes as dependent variables, and personality traits, as well as their facets, as independent variables.

Correlation coefficients. With positive correlation coefficients, one can expect both high and low values of variables to correspond to each other. With negative coefficients - correspondences of high values of one variable and low values of another variable. From where, in some cases, conclusions about brand preferences can be drawn.

Scatterplots. The measured values of personality traits (or their facets) were plotted on the horizontal axis. The values of attitudes towards brands were plotted on the vertical axis. For participants with values of the studied personality trait "above the median", the points were indicated in gray, and "below the median" – in black.

Three zones of attitudes. On the scatterplots, three zones for attitudes towards food brands were distinguished: preferences of domestic brands, preferences of foreign brands, and a zone of "uncertain" preferences: either ambivalent or unexpressed (on scatterplots these zones are marked in gray).

Trendlines. Trendlines were displayed on scatterplots. Basically - for statistically significant relationships or trends towards them (Tables 1-2). The trend lines served as the basis for conclusions about the preference for a domestic or foreign brand, depending on the severity of the corresponding personality trait or its facet (Tables 3-4). Trends for the entire sample were indicated by continuous lines, trends for personality trait values below the median were indicated by dotted lines, and trends for personality trait values above the median were indicated by a dashed line.

Results and discussion

IATs' effect sizes. *D-scores* were used to measure the effect size of implicit associations associated with brands of domestic or foreign products [53].

D-scores interpretation for affective and cognitive IAT: $D(affective)$ and $D(cognitive)$. $D \leq -0.15$ corresponds to positive automatic associations with domestic brands and negative ones - with foreign brands, $D \geq 0.15$ corresponds to positive associations with foreign brands and negative ones with Latvian brands, $-0.15 < D < 0.15$ - no effect.

D-scores for Self-concept IAT: $D(Self) \leq -0.15$ corresponds to automatic associations of self with foreign brands and others - with domestic brands, $D(Self) \geq 0.15$ corresponds to automatic associations of oneself with domestic brands and others with foreign brands, $-0.15 < D(Self) < 0.15$ - no effect.

Affective and cognitive explicit tests' effect sizes. *E-scores* for affective and explicit cognitive tests, $E(affective)$ and $E(cognitive)$, were used to measure the effect size of explicit preferences associated with brands of domestic or foreign products. If $E \geq 4.5$ - explicit preferences of domestic brand foods, with $E \leq 3.5$ - explicit brand preferences for foreign foods, $3.5 < E < 4.5$ – no effect [15].
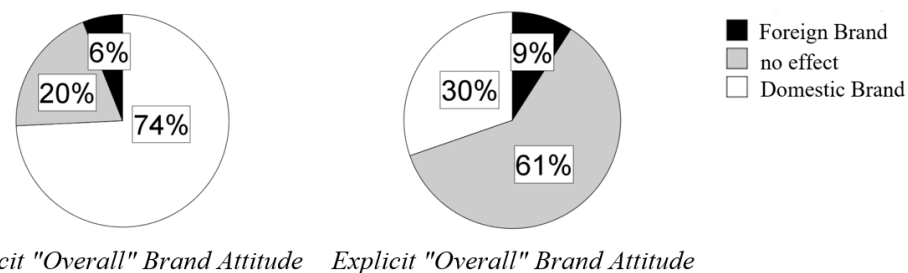

Implicit "Overall" Brand Attitude   Explicit "Overall" Brand Attitude

Fig. 1. **Distribution of consumers based on the implicit and explicit "overall" attitudes towards brands of domestic or foreign foods**

"Overall" Brand Attitudes. Using factor analysis in the study [15], two independent variables were constructed: *Explicit "Overall" Brand Attitude* (large values correspond to the preference for the domestic brand, small values - to the preference for a foreign brand; the "cut points" are -0.97 and 0.37) and *Implicit "Overall" Brand Attitude* (large values correspond to the preference of a foreign brand, small values – to the preference of the domestic brand; the "cut points" are 0.67 and 1.90). The "cut points" for *"Overall" Attitudes* were calculated as follows. The "cut points" ± 0.15 for variables $D(Self)$, $D(affective)$, $D(cognitive)$, as well as 3.5 and 4.5 for variables $E(affective)$ and $E(cognitive)$, were standardized using the means and standard deviations of the respective listed variables. Then, using the β-coefficients of "Component score coefficient matrix" of the factor analysis [15, Table 7, p.226] for explicit and implicit "Overall" brand attitudes the above "cut points" were calculated. Figure 1 shows consumer distributions demonstrating implicit and explicit preferences of domestic and foreign food brands or without the preference effect: ambivalent or unexpressed preferences. These distributions are based on the distributions of high and low values of *Explicit "Overall" Brand Attitude* and *Implicit "Overall" Brand Attitude* constructed using factor analysis.

Figure 1 shows consumer distributions demonstrating implicit and explicit preferences of domestic and foreign food brands or without the preference effect: ambivalent or unexpressed preferences. These distributions are based on the distributions of high and low values of *Explicit "Overall" Brand Attitude* and *Implicit "Overall" Brand Attitude* constructed using factor analysis.

Answer to the first research question

Linear and non-linear relationships between personality traits of consumers and implicit and explicit attitudes towards domestic and foreign food brands are revealed, taking into account the affective and

cognitive bases of attitudes. Some examples of important characteristics of the relationships are shown in Tables 1-2 and in the scatterplots with regression lines (Figures 2-3). Only statistically significant relationships ($p \leq 0.05$) or trends towards them ($p \leq 0.10$) were considered.

Answer to the second research question

We obtained relationships between implicit and explicit attitudes towards food brands with personality traits (Tables 1-2). Personality traits of consumers (from the BFI-2) and their facets can, with some probability most likely close to the average, predetermine both implicit and explicit attitudes towards product brands (Tables 3-4, Fig. 3-4).
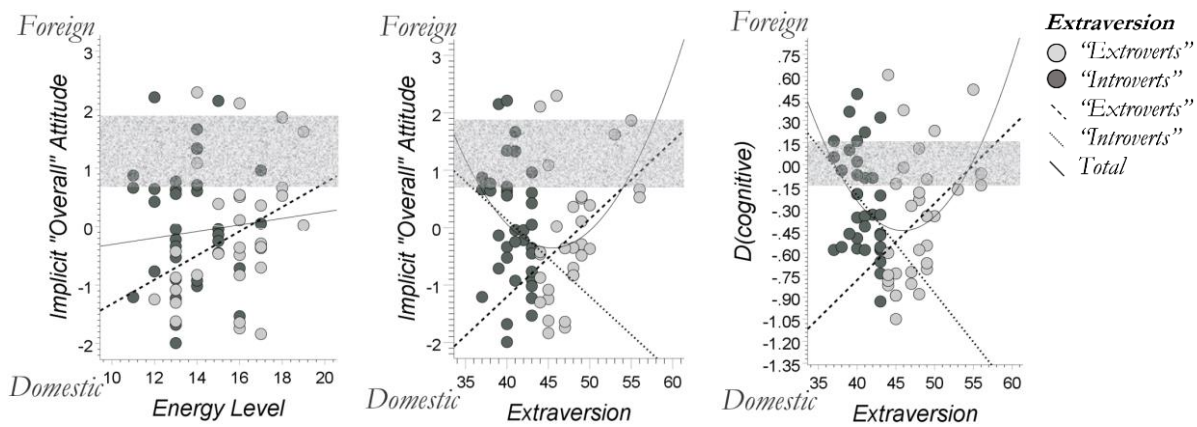

Fig. 2. **Scatterplots with Regression Lines: Relationships between Extraversion and Implicit "Overall" Attitude, Energy Level and Implicit "Overall", Extraversion and Implicit Attitude's Cognitive Base**
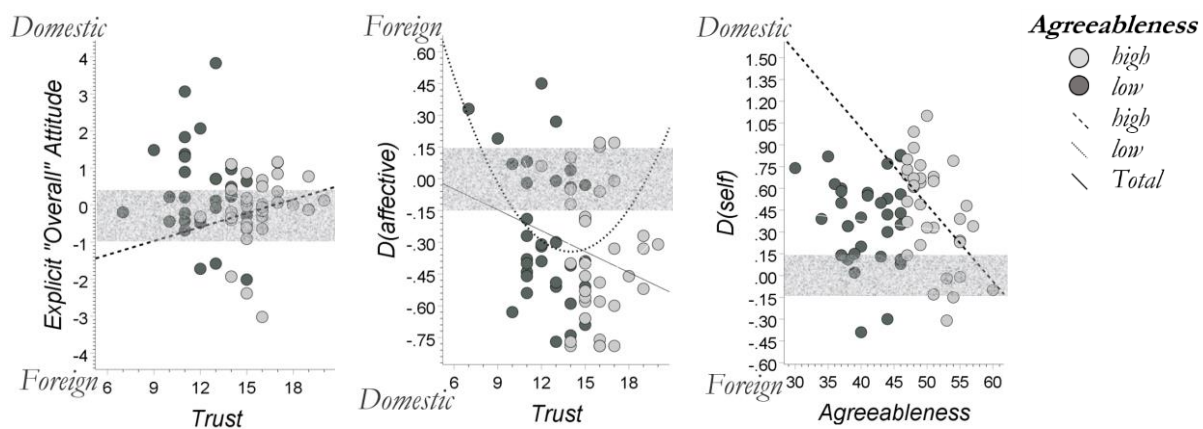

Fig. 3. **Scatterplots with Regression Lines: Relationships between Trust and Explicit "Overall" Attitude, Trust and D(affective), Agreeableness and D(self)**

Table 1

Personal Traits and Implicit Attitudes towards Food Brands: the Relationships

Personal Traits	Group	Relationships' Characteristics	Effect Size	95% CI
Implicit Associations of the Brands with Self				
Extraversion	"Extroverts"	$r(31) = -.30, p = .10$	medium	[-.59; .061]
Sociability	*Total*	$r_s(66) = -.24, p = .053$	small-medium	[-.46; .002]
Agreeableness	*high A*	$r(33) = -.53*, p = .002$	large	[-.74; -.23]
Compassion	*high A*	$r(33) = -.61***, p < .001$	large	[-.79; -.34]
Compassion	*Total*	Cubic: $R^2 = .10, F(3, 62) = 3.51*, p = .036$	small-medium	[.000; .23]
Respectfulness	*high A*	$r(33) = -.29, p = .10$	medium	[-.58; .059]

Table 1(continued)

Personal Traits	Group	Relationships' Characteristics	Effect Size	95% CI
Trust	*high A*	$r_S(33) = -.30, p = .093$	medium	[-.58; .048]
Conscientiousness	*low C*	Quadratic: $R^2 = .22, F(2, 27) = 3.81*, p = .035$	near large	[.000; .46]
Organization	*low C*	$r_S(30) = .42*, p = .020$	medium-large	[.070; .68]
Negative Emotionality	*low N*	Quadratic: $R^2 = .25, F(2, 30) = 4.86*, p = .015$	large	[.000; .48]
Creative Imagination	*Total*	$r(66) = -.32**, p = .009$	medium	[-.52; -.085]
Implicit Attitude's Affective Base				
Extraversion	*Total*	Quadratic: $R^2 = .11. F(2, 63) = 3.80*, p = .028$	near medium	[.000; .25]
Extraversion	*"Introverts"*	$r(35) = -.31, p = .075$	medium	[-.58; .026]
Assertiveness	*"Introverts"*	$r_S(35) = -.37*, p = .028$	medium	[-.63; -.042]
Assertiveness	*Total*	$r_S(66) = -.21, p = .086$	small-medium	[-.43; -.034]
Agreeableness	*Total*	$r(66) = -.24, p = .054$	small-medium	[-.46; .002]
Respectfulness	*Total*	$r(66) = -.22, p = .075$	small-medium	[-.44; .023]
Trust	*Total*	$r(66) = -.27*, p = .030$	medium	[-.48; -.030]
Open-Mindedness	*low O*	$r(34) = -.38*, p = .029$	medium-large	[-.64; -.048]
Open-Mindedness	*high O*	$r(32) = -.39*, p = .027$	medium-large	[-.65; -.048]
Intellectual Curiosity	*Total*	Quadratic: $R^2 = .083, F(2, 63) = 2.86, p = .065$	small-medium	[.000; .20]
Intellectual Curiosity	*low O*	Cubic: $R^2 = .20, F(3, 30) = 3.94*, p = .029$	near to large	[.000; .41]
Creative Imagination	*low O*	Quadratic: $R^2 = .18, F(2, 31) = 3.50*, p = .043$	medium-large	[.000; .39]
Creative Imagination	*high O*	$r(32) = -.35*, p = .047$	medium	[-.62; -.001]
Implicit Attitude's Cognitive Base				
Extraversion	*Total*	Quadratic: $R^2 = .15, F(2, 63) = 5.35**, p = .007$	medium	[.000; .30]
Extraversion	*"Introverts"*	$r_S(35) = -.40*, p = .017$	medium-large	[-.65; -.077]
Extraversion	*"Extroverts"*	$r_S(31) = .43*, p = .016$	near to large	[.089; .68]
Assertiveness	*Total*	$rS(66) = -.28*, p = .022$	near medium	[-.49; -.041]
Assertiveness	*"Introverts"*	$r_S(35) = -.47**, p = .005$	near to large	[-.69; -.16]
Energy Level	*"Extroverts"*	$r_S(31) = .52**, p = .003$	large	[.20; .74]
Organization	*high C*	*Quadratic:* $R^2 = .15, F(2, 33) = 2.95, p = .066$	medium	[.000; .39]
Negative Emotionality	*high N*	$r(33) = -.36*, p = .039$	medium	[-.63; -.019]
Negative Emotionality	*low N*	*Cubic:* $R^2 = .18, F(3, 29) = 3.28, p = .051$	medium-large	[.000; .39]
Depression	*Total*	$r(66) = -.22, p = .071$	small medium	[-.44; .023]
Depression	*high N*	$r(33) = -.29, p = .099$	medium	[-.58; .059]
Emotional Volatility	*high N*	$r(33) = -.33, p = .064$	medium	[-.60; .015]
Emotional Volatility	*low N*	*Quadratic:* $R^2 = .25, F(2, 30) = 4.89*, p = .015$	large	[.000; .48]
Open-Mindedness	*low O*	$r(34) = -.31, p = .079$	medium	[-.59; .031]
Implicit "Overall" Attitude				
Extraversion	*Total*	Quadratic: $R^2 = .12, F(2, 63) = 4.46*, p = .015$	near medium	[.000; .26]
Extraversion	*"Introverts"*	$r_S(35) = -.29, p = .087$	medium	[-.57; .048]
Extraversion	*"Extroverts"*	$r_S(31) = .45*, p = .012$	near large	[.11; .69]
Sociability	*"Extroverts"*	$r_S(31) = .32, p = .081$	medium	[-.039; .61]
Assertiveness	*Total*	$r_S(66) = -.23, p = .066$	small-medium	[-.45; .013]
Assertiveness	*"Introverts"*	$r_S(31) = -.39*, p = .020$	medium-large	[-.65; -.041]
Energy Level	*"Extroverts"*	$r_S(31) = .41*, p = .021$	medium-large	[.065; .67]
Compassion	*high A*	$r(33) = -.35*, p = .048$	medium	[-.62; -.008]
Respectfulness	*low A*	Quadratic: $R^2 = .18, F(2, 30) = 3.20, p = .054$	medium-large	[.000; .39]

Table 1 (continued)

Personal Traits	Group	Relationships' Characteristics	Effect Size	95% CI
Trust	*total*	Quadratic: $R^2 = .088$, $F(2, 63) = 3.06$, $p = .054$	small-medium	[.000; .21]
Conscientiousness	*Total*	$r_S (30) = -.36$, $p = .052$	medium	[-.64; .000]
Organization	*Total*	*Quadratic*: $R^2 = .10$, $F(2, 63) = 3.52*$, $p = .036$	medium	[.000; .23]
Organization	*low C*	$r_S (30) = -.51**$, $p = .004$	large	[-.74; -.18]
Negative Emotionality	*low N*	*Quadratic*: $R^2 = .23$, $F(2, 30) = 4.41*$, $p = .021$	large	[.000; .46]
Emotional Volatility	*low N*	*Quadratic*: $R^2 = .22$, $F(2, 30) = 4.17*$, $p = .025$	large	[.000; .45]
Open-Mindedness	*low O*	$r(34) = -.32$, $p = .064$	medium	[-.59; .020]
Intellectual Curiosity	*low O*	*Cubic*: $R^2 = .19$, $F(3, 30) = 3.57*$, $p = .040$	near to large	[-.019; .40]

*$p < .05$. **$p < .01$, ***$p < .001$, (2-tailed).

Table 2

Personal Traits and Explicit Attitudes towards Food Brands: the Relationships

Personal Traits	Group	Relationships' Characteristics	Effect Size	95% CI
Explicit Attitude's Affective Base				
Extraversion	"*Introverts*"	Quadratic: $R^2 = .25$, $F(2, 32) = 5.41**$, $p = .009$	large	[.000 .48]
Energy Level	"*Introverts*"	$r_S (35) = .29$, $p = .096$	medium	[.048; .57]
Agreeableness	*Total*	$r(66) = -.22$, $p = .073$	small-	[-.44; .023]
Compassion	*Total*	$r(66) = -.20$, $p = .10$	small-	[-.42; .044]
Respectfulness	*Total*	$r(66) = -.31*$, $p = .012$	medium	[-.51; -.073]
Trust	*high A*	$r_S (33) = .47**$, $p = .007$	almost large	[.15; .70]
Depression	*low N*	*Cubic*: $R^2 = .16$, $F(3, 29) = 2.92$, $p = .069$	medium	[.000; .36]
Explicit Attitude's Cognitive Base				
Agreeableness	*Total*	$r(66) = -.32**$, $p = .008$	medium	[-.52; -.085]
Compassion	*Total*	$r(66) = -.33**$, $p = .007$	medium	[-.53; -.096]
Respectfulness	*Total*	$r(66) = -.36**$, $p = .003$	medium	[-.55; -.13]
Conscientiousness	*Total*	$r(66) = -.27*$, $p = .031$	medium	[-.48; -.030]
Organization	*Total*	$r(66) = -.25*$, $p = .045$	small-	[-.46; -.008]
Productiveness	*Total*	$r(66) = -.25*$, $p = .041$	small-	[-.46; -.008]
Negative Emotionality	*Total*	$r_S (66) = .26*$, $p = .032$	near medium	[.019; .47]
Negative Emotionality	*low N*	*Cubic*: $R^2 = .23$, $F(3, 29) = 4.49*$, $p = .020$	large	[.000; .45]
Anxiety	*Total*	$r(66) = .22$, $p = .079$	small-	[-.023; .44]
Depression	*high N*	*Cubic*: $R^2 = .26$, $F(3, 29) = 3.48*$, $p = .028$	large	[.000; .49]
Depression	*low N*	*Cubic*: $R^2 = .25$, $F(3, 29) = 4.92*$, $p = .014$	large	[.000; .47]
Open-Mindedness	*Total*	$r_S (66) = -.22$, $p = .077$	small-	[-.44; .023]
Creative Imagination	*Total*	$r_S (66) = -.28*$, $p = .025$	medium	[-.49; -.041]
Explicit "Overall" Attitude				
Agreeableness	*Total*	$r(66) = -.32**$, $p = .009$	medium	[-.52; -.085]
Compassion	*Total*	$r(66) = -.30*$, $p = .014$	medium	[-.51; -.063]
Respectfulness	*Total*	$r(66) = -.38**$, $p = .002$	medium	[-.57; -.15]
Trust	*high A*	$r_S (33) = .35*$, $p = .043$	medium	[.008; .62]
Productiveness	*Total*	$r(66) = -.21$, $p = .096$	small-	[-.43; .034]
Depression	*low N*	*Cubic*: $R^2 = .23$, $F(3, 29) = 4.53*$, $p = .019$	large	[.00; .45]
Creative Imagination	*high O*	$r(32) = -.31$, $p = .085$	medium	[-.59; .043]
Intellectual Curiosity	*low O*	*Cubic*: $R^2 = .19$, $F(3, 28) = 3.57*$, $p = .040$	near to large	[.000; .40]

*$p < .05$. **$p < .01$, ***$p < .001$, (2-tailed).

Table 3

Implicit Attitudes

BFI-2	Implicit Attitudes	Preferences of Domestic Brands
E	**Associations with Self**	Extraversion is above the median, with an increase in extraversion associations weaken. Any sociability, with its increase, associations weaken.
	Affective base	Ambiverts (medium extraversion). Introverts with medium to high assertiveness. As assertiveness increases, preferences increase.
	Cognitive base	Ambiverts (Fig. 2). Introverts with medium to high assertiveness. As assertiveness increases, preferences increase. Any energy level that decreases preference as it increases.
	"Overall"	Ambiverts. Introverts (Fig. 2). Introverts, with any assertiveness. As assertiveness increases, preferences increase. Extroverts with sociability below very high, with increasing sociability, preferences decrease. Extroverts with any energy level, with the increase of which the preferences decrease (Fig. 2).
A	**Associations with Self**	Agreeableness is below high but above median. As agreeableness increases, associations weaken (Fig. 3). Compassion is below very high. When agreeableness is above the median, associations weaken with increasing compassion. Agreeableness is above the median and any respectfulness. As respectfulness increases, associations weaken. Agreeableness above median and any level of trust. As trust increases, associations weaken (Fig. 3).
	Affective base	Agreeableness below the median coupled with moderate trust, as the preference first increases and then weakens. For the entire sample, respectfulness above low increases in preference as it increases.
	"Overall"	When agreeableness is above the median, as compassion increases, preferences decrease. Agreeableness is below the median, combined with average respectfulness. Agreeableness below the median in combination with trust above low, preferences first increase with increasing trust, and with further increase they decrease.
C	**Associations with Self**	Conscientiousness is below the median; as it increases, associations first weaken and then increase. Conscientiousness is below the median, with an increase in organization, associations increase.
	Affective base	Conscientiousness below the median, roughly from the first quartile to the median, preference increases with increasing conscientiousness. For all participants, the conscientiousness is approximately from the first quartile and above, the preferences first increase and then decrease. Conscientiousness is below the median, combined with organization is higher than very low - with increasing organization, preferences increase. The organization is less than very high, the change in preferences is non-monotonic. Conscientiousness is below the median, combined with responsibility above low.
	Cognitive base	Conscientiousness above the median, combined with organization above average, but less than very high, with increasing organization, preferences first increase and then decrease.
	"Overall"	For any values of conscientiousness, with increasing of which the preferences decrease, if conscientiousness is below the median. When conscientiousness is below the median, combined with organization higher than very low, preferences increase with increasing organization. Organization is higher than low, preferences with increasing organization first increase, then, starting approximately from the median, they decrease.

Table 3 (continued)

BFI-2	Implicit Attitudes	Preferences of Domestic Brands
N	Associations with Self	Moderate "positive" emotionality.
	Cognitive base	Negative emotionality is above the median, with an increase in which preferences increase. Positive emotionality - from low to high, with its increase, preferences first increase, then decrease. Negative emotionality is above the median, combined with emotional instability above low, with an increase in which preferences increase. "Positive" emotionality combined with average "emotional stability". Negative emotionality above the median, in combination with depression above low, with an increase in depression, preferences increase. Any depression (for the entire sample), with an increase in which preferences increase.
	"Overall"	Moderate "positive emotionality". Positive emotionality combined with moderate emotional stability; preferences with an increase in emotional instability first increase and then decrease.
O	Associations with Self	Any creative imagination that weakens implicit self-associations with brands as it increases.
	Affective base	Open-mindedness is above the median, and as it increases, preferences increase. Open-mindedness ranges from low to median, with preference increasing as it increases to the median. Below median open-mindedness, coupled with moderate intellectual curiosity. For the entire sample, with intellectual curiosity above low. Open-mindedness above the median coupled with creative imagination above the median, as creative imagination increases, preference increases. Open-mindedness is below the median, coupled with moderate creative imagination, with an increase in which preferences first increase and then decrease.
	Cognitive base	Open-mindedness is above the first quartile but below the median, with increasing open-mindedness preference increases.
	"Overall"	Open-mindedness above the first quartile, but below the median, as it increases towards the median, preference increases. Below median open-mindedness coupled with moderate intellectual curiosity, as intellectual curiosity increases, preferences first increase then decrease
		Preferences of Foreign Brands
E	Affective base	Very pronounced "extroverts" (Fig. 2).
	Cognitive base	Both very pronounced "extroverts" or very pronounced "introverts" (Fig.2).
	"Overall"	The general tendency of preference with high extraversion.
A	Affective base	Agreeableness is below the median, coupled with low trust, as the preference decreases as it increases (Fig. 3).
	"Overall"	Below median agreeableness coupled with high respectfulness. Very low trust.
C	Affective base	Very low conscientiousness.
	Cognitive base	Conscientiousness is above the median, combined with low organization. As organization increases, preferences decrease.
N	Associations with Self	Very high "positive" emotionality. "Positive" emotionality on the border with "negative emotionality" ("emotional ambivalence" or very low "positive" emotionality).
	Cognitive base	Very low positive emotionality: very narrow range of "emotional ambivalence". "Positive" emotionality combined with very high "emotional stability".

Table 3 (continued)

BFI-2	Implicit Attitudes	Preferences of Domestic Brands
	"Overall"	Very high or very low "positive emotionality" (very narrow zone of "emotional ambivalence"). Positive emotionality in combination with emotional instability above the median, with an increase in emotional instability, preferences increase.
O	Affective base	Very low open-mindedness. Open-mindedness below the median, combined with either very low or very high intellectual curiosity. For the entire sample at very low intellectual curiosity. Open-mindedness is below the median, coupled with very low creative imagination, as the preference decreases as it increases.
	"Overall"	Below median open-mindedness, combined with very high intellectual curiosity.
Uncertain Preferences		
E	Affective base	High, but not very introverted; high, but not very extroverted (Fig. 2). Introverts with low assertiveness.
	Cognitive base	High, but not very high "introversion"; expressive, but not very, "Extroverts" with above-average extroversion, but not very high (Fig. 2). "Introverts" with low assertiveness.
	"Overall"	Extroverts with very high sociability. Introverts. Extroverts with high extraversion, and introverts with high introversion.
A	Associations with Self	Very high agreeableness (Fig. 3). Very high compassion.
	Affective base	Very high hostility. Agreeableness below the median combined with high trust (Fig. 3).
	"Overall"	Agreeableness is below the median, combined with low respectfulness, as well as respectfulness close to high. Agreeableness is below the median, combined with low respectfulness, as well as respectfulness close to high. Trust is low, but not great.
C	Affective base	Conscientiousness is low, but not very low. Conscientiousness is below the median, combined with very low organization. Very high organization. Conscientiousness is below the median, coupled with low responsibility. Conscientiousness is below the median, combined with very low organization. Low organization.
	Cognitive base	Conscientiousness is above the median, coupled with very high organization values. Conscientiousness is above the median, combined with less than average organization, but not low. Conscientiousness is above the median, combined with organization above low but below average. Conscientiousness is above the median, combined with a very high level of organization.
	"Overall"	Conscientiousness is below the median, combined with very low organization. Low organization.
N	Associations with Self	"Positive" emotionality, either from moderate to not very high, or not very low to moderate.
	Cognitive base	High "positive" emotionality. "Positive" emotionality is low to very low. Negative emotionality above the median in combination with low depression. Negative emotionality above the median, combined with medium to high "emotional stability". "Positive" emotionality combined with high "emotional stability". "Positive" emotionality combined with low (but not very) "emotional stability".

Table 3 (continued)

	"Overall"	High (but not very high) or low (but not very low) "positive emotionality". Positive emotionality combined with either high or low emotional stability.
O	**Affective base**	Low (but not very low) open-mindedness. Open-mindedness below the median, combined with either very low or not very high intellectual curiosity. For the entire sample with not very low intellectual curiosity. Open-mindedness above the median combined with creative imagination below the median. Open-mindedness below the median, combined with either very low to moderate or high creative imagination.
	Cognitive base	Low open-mindedness (below the first quartile).
	"Overall"	Open-mindedness is below the first quartile. Below-median open-mindedness combined with either low intellectual curiosity or high but not very intellectual curiosity.

Note. **E** – Extroversion, **A** – Agreeableness, **C** – Conscientiousness, **N** – Negative Emotionality, **O** – Open–mindedness.

Table 4

Explicit Attitudes

BFI-2	Explicit Attitudes	Preferences of Domestic Brands
A	**Affective base**	Low respectfulness, with an increase in which preferences decrease.
	Cognitive base	Agreeableness below the median; Preferences weaken with increasing agreeableness. Low compassion; preferences weaken with increasing
	"Overall"	compassion. Low respectfulness; with an increase in which preferences decrease.
C	**Cognitive base**	Conscientiousness is below the median, with increasing conscientiousness, preferences decrease. Low organization, with an increase in which preferences decrease. Low productivity, with an increase in which preferences decrease.
	"Overall"	Low productivity, with an increase in which preferences decrease
C	**Cognitive base**	Negative emotionality is above the median, with an increase in which preferences increase. High anxiety, with an increase in which preferences increase. Negative emotionality is above the median, along with depression above average, but not high. Negative emotionality is above the median along with very low depression.
O	**Cognitive base**	Open-mindedness is below the median, with an increase in which preferences decrease. Low creative imagination, with an increase in which preferences decrease.
	"Overall"	Below median open-mindedness, along with moderate to high intellectual curiosity. Open-mindedness is below the median, along with low intellectual curiosity. With an increase in intellectual curiosity, preferences decrease.
		Preferences of Foreign Brands
E	**Affective base**	Introverts with high and moderate introversion. Introverts with any energy level (trend).
A	**Affective base**	Agreeableness above the median coupled with low trust. Preferences decrease as trust increases.
	"Overall"	Agreeableness above the median coupled with low trust. As trust grows, consumers come to uncertain brand preferences.
N	**Cognitive base**	Very high positive emotionality. Positive emotionality combined with moderate depression. Negative emotionality above the median, combined with very high depression.
	"Overall"	Positive emotionality combined with moderate depression.

Table 4 (continued)

BFI-2	Explicit Attitudes	Preferences of Domestic Brands
		Uncertain Preferences
E	**Affective base**	Introverts with low introversion
A	**Affective base**	Regardless of the expression of both agreeableness and compassion. Respectfulness is above average. Agreeableness is above the median along with high trust.
	Cognitive base	Agreeableness is above the median. High compassion. High respectfulness.
	"Overall"	Agreeableness is above the median. Compassion is above low. High respectfulness. High trust.
C	**Cognitive base**	Conscientiousness is above the median. High organization. High productivity.
	"Overall"	Productivity is higher than low.
N	**Affective base**	Consumers with any depression.
	Cognitive base	Low depression combined with positive emotionality.
	"Overall"	Positive emotionality combined with depression below average. Positive emotionality, except for a very high one. Low anxiety. Negative emotionality above the median, combined with high (but not very high) depression.

Note. **E** – Extraversion, **A** – Agreeableness, **C** – Conscientiousness, **N** – Negative Emotionality, **O** – Open-Mindedness.

Comment 1: Personality Traits and Explicit Brand Preferences

Extraversion

In the present research, extraversion, measured using BFI-2, as a prerequisite for choosing a product brand, appeared only for the affective basis of explicit attitudes: the role of extraversion with values below the median, conventionally called "introversion", was found.

Foreign brand preferences measured by the affective explicit procedure. "Introverts" with high and moderate "introversion", as well as "introverts" with any energy level, tend to have an affective explicit preference for foreign brands. In this case, the Energy Level facet does not play a role. Insufficient abilities for social interaction and social contacts, shyness, self-absorption, as well as a lack of willingness and desire to express personal opinions and achieve goals in social situations are important. It is possible that for the participants in the research, the determining factor in choosing foreign brands is the emotional basis of the desire to avoid any experiences associated with society.

Explicit "uncertain" affective preferences. They are characteristic of "introverts" with low "introversion". These are participants with all moderate characteristics: with moderate social interaction abilities, with moderate desires to express personal opinions and achieve goals in social situations, with moderate emotional positive excitement that is not fully explained by sociality. It is possible that such participants in each individual case tend to make emotionally charged decisions, which most likely are not standard.

Agreeableness

In the present research, Agreeableness, as measured by BFI-2, is the main prerequisite for product brand selection. It manifested itself in both affective and cognitive bases of explicit attitudes.

Agreeableness and its facets (Compassion, Respectfulness, Trust) include information about emotional concern for the well-being of other people, about treating people based on their personal preferences and rights, about suppressing one's own antagonistic and aggressive impulses, about positive beliefs about other people that is an important cognitive aspect.

Explicit preferences of domestic brands. Low agreeableness, low compassion, and low respectfulness were the "basis" for trends in cognitive explicit preferences of domestic product brands. All preferences of domestic brands weaken with the increase of agreeableness, compassion and respectfulness. For the affective basis of the explicit preferences of domestic brands, the determining trend was consumer respectfulness, the level of which is below average. Affective explicit preferences decrease as respectfulness increases. It is possible that such a personality trait of the consumer as low agreeableness inclines them to impulsive choice of products that are stored in their memory, and not to think about other existing possibilities. Consumers with more pronounced agreeableness tend to make more deliberate choices – "uncertain" explicit preferences.

Explicit preferences of foreign brands. Only the affective basis of the explicit preference for foreign brands has been found: high consumer agreeableness combined with low trust. As trust grows, consumers come to uncertain brand preferences. The highly pronounced affective aspects of agreeableness: *Compassion* – and **Respectfulness**, combined with the unexpressed cognitive aspect of *Trust* (searching for mistakes in the actions of other people, suspicion of their intentions, distrust, and a tendency to see only the bad) lead to such a preference. It is likely that all of the above can "close" the consumer's ability to conduct an adequate analysis of the choice of product brands. Changing the affective basis of explicit brand preference with increasing consumer trust can lead to the possibility of deliberate analysis when choosing a brand (mathematical - into the "uncertainty" zone on the scatterplot).

Explicit "uncertain" preferences. Above-average agreeableness, together with above-average trust, and above-average respectfulness determine the possibilities for analysis when choosing product brands. High agreeableness, compassion and respectfulness determine a more reasonable basis for choice.

Conscientiousness

In the present research, Conscientiousness, as measured by BFI-2, as a prerequisite for product brand choice, appeared only for the cognitive basis of explicit attitude. Conscientiousness and its facets (Organization – the inhibitory aspect of conscientiousness, Productiveness – the active aspect, Responsibility – the prosocial aspect) include information about the preference for order and structure, diligence and perseverance in achieving goals, the reliability of fulfilling obligations and the dependence of a person on others, respectively.

Explicit cognitive preferences of domestic brands. Low conscientiousness and its facets: organization and productivity determine the cognitive foundations of the explicit preferences of domestic product brands. Low conscientiousness indicates a lack of control over impulsiveness, that is, disorganization, unproductiveness and irresponsibility of consumers. It is possible that impulsiveness, lack of control and thoughtlessness in choosing brands follow from this. With a high probability, the brand that is stored in the long-term memory of the buyer is chosen, and most likely it will be a domestic brand. The preferences of domestic brands decrease with an increase in the severity of conscientiousness and its facets: organization and productivity, respectively.

Explicit "uncertain" preferences. High conscientiousness, organization and productivity determine the possibilities of analysis in the selection of product brands and, therefore, the cognitive basis for explicit brand selection. The choice of brand will be determined depending on the specific situation.

Negative Emotionality

In the present research, Negative Emotionality, as measured by BFI-2, as a prerequisite for product brand choice, appeared only for the cognitive basis of explicit attitude.

Explicit cognitive preferences of domestic brands. High negative emotionality, with an increase in which preferences increase; high anxiety, with an increase in which preferences increase; high negative emotionality along with depression above average, but not high; high negative emotionality together with very low depression determine the cognitive foundations of explicit preferences of domestic product brands.

Explicit cognitive preferences of foreign brands. Very high positive emotionality; positive emotionality combined with moderate depression; high negative emotionality combined with very high depression determine the cognitive foundations of the explicit preferences of domestic product brands.

Explicit "uncertain" cognitive preferences. Low depression combined with positive emotionality; positive emotionality, except for very high, low anxiety; high negative emotionality, combined with high (but not very) depression, determines the possibilities of analysis when choosing product brands and, therefore, the cognitive basis for explicit brand selection. The choice of brand will depend on the specific situation.

Explicit "uncertain" affective preferences. Consumers with any depression may have an affective basis for explicit brand choice. The choice of brand will depend on the specific situation.

Open-Mindedness

In the present research, Openness, as measured by BFI-2, as an explicit prerequisite for product brand choice, appeared only for the cognitive basis of explicit attitude. Open-mindedness and its facets (Intellectual Curiosity, Aesthetic Sensitivity, Creative Imagination) determine:

Explicit cognitive preferences of domestic brands. Low *open-mindedness*, with an increase in which preferences weaken. Low *creative imagination*, with the increase of which preferences weaken. Low scores on these variables indicate that the participant is unintelligent, standardized, unaesthetic, and uncreative. It is obvious that his/her choice of domestic brands, as well as in the previous cases, occurs automatically and is determined by long-term memory.

Explicit "uncertain" cognitive preferences. High open-mindedness and high creative imagination determine the scope for analysis in product brand selection and therefore the cognitive basis for explicit brand selection. The choice of brand will depend on the specific situation.

Comment 2: Personality Traits and Implicit Brand Preferences

Extraversion

Implicit preferences for domestic product brands

Implicit associations of domestic product brands with oneself, measured using the self-concept IAT, turned out to be characteristic of participants with extraversion above the median (extroverts), as well as participants with different extraversion and sociability. As both extraversion and sociability increase, implicit associations decrease. The final "point" of increasing extraversion is a very pronounced extrovert - active, sociable, assertive, energetic, open, leading, influencing people, deciding everything by himself/herself. Most likely, such a person's implicit associations with domestic product brands weaken and move into the "zone of uncertainty". The ultimate "point" of increasing sociability as a personality trait is manifested in ideal social interaction and, most likely, implicit associations of self with domestic brands practically disappear, since the meaning in them is lost. Implicit preferences, both affective and cognitive appeared in ambiverts, introverts; introverts with medium and high assertiveness. An increase in the implicit preferences of domestic brands with an increase in assertiveness, that is, a willingness and desire to achieve goals in social situations, is also logical. Cognitive implicit preferences were found in participants with any energy level that decreased as they increased.

The "overall" implicit attitude has confirmed all these tendencies. All found tendencies of implicit preferences for domestic brands do not contradict each other.

Implicit preferences for foreign product brands. *Implicit affective preferences*: there are slight differences in extraversion and combinations of its facets that determine implicit brand attitudes as measured by cognitive and affective IAT (Table 3).

Implicit "uncertain" preferences. Differences in extraversion and combinations of its facets that determine implicit "uncertain" preferences, measured using cognitive and affective IAT, were not found. Analysis of the "Overall" implicit attitude introduced additional corrections to the characteristics (Table 3).

Agreeableness

Agreeableness is a consumer personality trait with a help of which we failed to reveal the implicit preferences of domestic or foreign product brands as measured by cognitive IAT.

Implicit preferences for domestic product brands. The "overall" implicit attitude has confirmed all tendencies of implicit preferences for domestic brands found with the affective and self-concept IAT affective and self-concept (Table 3). With agreeableness above the median, as compassion (the emotional aspect of agreeableness) increases, preferences decrease. The highest degree of compassion (enhanced by high agreeableness) corresponds to an ideal emotional concern for the well-being of others, while the preferences of domestic brands tend to the "zone of uncertainty" – an implicit choice, perhaps - to the unexpressed preferences. Agreeableness below the median combined with average respectfulness (behavioral aspect of agreeableness - treating others according to their personal preferences). Moderate respectfulness first increases from the "zone of uncertainty", then decreases to the "zone of uncertainty". It is possible that when respectfulness (with agreeableness below the median) ceases to be moderate, implicit preferences become either conflicting or unexpressed. In the case of trust (the cognitive aspect of agreeableness) is higher than low, with its increase, implicit preferences first increase from the "zone of uncertainty", and with a further increase, they again tend to the "zone of uncertainty". It is possible that when trust (below the median agreeableness) becomes very high, then implicit preferences can be affected by either low compassion or low respectfulness, which can lead to either conflicting or unexpressed implicit preferences [49].

Implicit preferences for foreign product brands are shown in Table 3.

Implicit "uncertain" preferences. This case produced opposite conclusions for implicit attitudes generated by different IAT experimental procedures (Table 3).

Conscientiousness

Implicit preferences for domestic product brands. The influence of Conscientiousness and its two facets: organization (inhibitory aspect of conscientiousness) and responsibility (prosocial component of conscientiousness) on the choice of implicit brand preferences are found. The role of active conscientiousness – the Productiveness facet could not be identified. The results of measurements using each of the IAT are different (Table 3).

Implicit preferences for foreign product brands are shown in Table 3. For implicit preferences measured by cognitive IAT, the personality traits influencing the measurement results are different.

Implicit "uncertain" preferences. This case also gave opposite conclusions for implicit attitudes produced by different IAT experimental procedures (Table 3).

Negative Emotionality

The influence of negative emotionality and its facets on the preferences of implicit attitudes towards product brands, measured using affective IAT, was not revealed. The "overall" implicit attitude and measurements with the help of cognitive IAT with "positive" emotionality showed approximately the same results.

Implicit preferences for domestic product brands. Moderate "positive" emotionality affects the preferences of implicit associations of domestic product brands, measured using the IAT Self-Concept. "Positive" emotionality above low determines the choice of implicit preferences for domestic brands, identified using cognitive IAT. Very low "positive" emotionality also determines implicit preferences based on the "Overall" implicit attitude (Table 3).

Implicit preferences for foreign food brands. Both very high "positive" emotionality and very low "positive" emotionality (on the border with "negative emotionality" – "emotional ambivalence") affect the preferences of implicit associations for foreign product brands, measured using the IAT Self-Concept. Very high, as well as very low "positive" emotionality determines the choice of implicit preferences for foreign brands, identified with the help of cognitive IAT. Very low "positive" emotionality also determines implicit preferences based on the "Overall" implicit attitude. "Positive" emotionality combined with very low Emotional Volatility with "Positive" emotionality combined with above-average Emotional Volatility determines the choice of implicit preferences for foreign brands revealed using cognitive IAT. "Positive" emotionality, combined with Emotional Volatility close to the median, determines implicit preferences based on the "Overall" implicit attitude (Table 3).

Implicit "uncertain" preferences. "Positive" emotionality, either from moderate to not very high, or not very low to moderate, affects the preferences for implicit associations of domestic product brands, measured using the IAT Self-Concept. High "positive" emotionality, as well as "emotional ambivalence" determines the choice of implicit "uncertain" brand preferences identified using cognitive

IAT. High, as well as low "positive" emotionality, define "uncertain" implicit preferences based on the "Overall" implicit attitude. "Positive" emotionality combined with very low Emotional Volatility determines the choice of implicit preferences for foreign brands, revealed using cognitive IAT. "Positive" emotionality in combination with Emotional Volatility above the average determines the choice of implicit preferences for foreign brands, identified using cognitive IAT (Table 3).

Open-Mindedness

Open-mindedness is characterized by intellectual interest and pleasure from thinking [49], originality, aesthetics and creativity. Facets: Intellectual Curiosity, Aesthetic Sensitivity (we did not find a connection between Aesthetic Sensitivity and attitudes towards brands in our research) and Creative Imagination.

Implicit preferences for domestic product brands. For implicit brand preferences measured using the self-concept IAT, affective and cognitive IAT procedures, and also determined using the implicit "overall" attitude. Any creative imagination that weakens the implicit associations of the self with brands influences the preference for implicit associations of domestic product brands as measured by the self-concept IAT. Open-mindedness above the first quartile, but below the median, with an increase in open-mindedness, preferences increase, determines the choice of implicit preferences for domestic brands identified using cognitive IAT. Much more combinations of open-mindedness with its facets determine the choice of implicit preferences for domestic brands, identified using the **affective IAT** (Table 3). The **"overall" implicit attitude** basically confirmed all the tendencies found.

Implicit preferences for foreign food brands. Both very high "positive" emotionality and very low "positive". No influence of open-mindedness and its facets was found, which would determine the implicit preferences for domestic brands, identified with **cognitive IAT**. There are many more combinations of open-mindedness with its facets that determine the choice of implicit preferences for foreign brands, identified with **affective IAT**, than the **"Overall" implicit attitude** allows to reveal, which basically confirmed all the trends found (Table 3).

Implicit "uncertain" preferences. Low open-mindedness below the first quartile determines the choice of "uncertain" implicit brand preferences revealed with **cognitive IAT**. Much more combinations of open-mindedness with its facets determine the choice of implicit preferences for domestic brands, revealed with the **affective IAT**. The "Overall" implicit attitude basically confirmed all tendencies found (Table 3).

Comment 3: "Uncertain" Brand Preferences

In the research of brand attitudes, we considered three situations: (1) the effect of domestic brand preference, (2) the effect of foreign brand preference, (3) the effect of brand preference was not revealed. We conventionally designated the last case as "no effect" or "without the preference effect: ambivalent or unexpressed preferences". And in this research, we called this case "Uncertain preference", for which we allocated a special "zone of uncertainty" on scatterplots. After conducting this research on predicting the most plausible brand choice for personality traits, we found the following facts. Explicit "uncertain" preferences for all five personality traits have some "balanced" qualities of the participants.

- "Introverts" with low "introversion".
- Above average agreeableness along with above average trust. Agreeableness is high. High compassion. Compassion is above low. High respectfulness. High trust.
- High conscientiousness. High organization. High productivity. Productivity is higher than low.
- Positive emotionality, except for a very high one. Low anxiety. Positive emotionality combined with depression below average. Consumers with any depression. High negative emotionality combined with high (but not very high) depression.
- High open-mindedness. High creative imagination. Low open-mindedness along with medium and high intellectual curiosity.

For consumers with a choice of domestic and foreign brands, not all personality traits can be called "healthy". For example, the personality traits of consumers with explicit preferences for *domestic brands*:

- Low agreeableness. Low compassion. Low respectfulness.

- Low conscientiousness. Low organization. Low productivity.
- High negative emotionality. High anxiety. High negative emotionality, together with depression, is above average, but not high. High negative emotionality along with very low depression.
- Low open-mindedness. Low creative imagination. High open-mindedness coupled with low creative imagination. Low open-mindedness coupled with low intellectual curiosity.
- Personality traits of consumers with explicit preferences for *foreign brands*:
- "Introverts" with high and moderate "introversion". "Introverts" with any energy level.
- High agreeableness coupled with low trust.
- Very high positive emotionality. Positive emotionality combined with moderate depression. High negative emotionality combined with very high depression.

However, the results obtained are consistent with those of other studies. So in our research, when considering the cognitive bases of explicit attitudes, the influence on the explicit choice of domestic and foreign product brands was shown: Extraversion; Conscientiousness and its facets (Organization and Productivity); Open-Mindedness (and its Creative Imagination facet). This is partly consistent with the results of other studies. In the study [30], the results showed that Extraversion, Neuroticism, Conscientiousness, and Open-Mindedness affect the purchasing intentions of a global brand. The study [23] found that Extraversion and Open-Mindedness are positively related with the hedonic value of products. The study [26] found that Neuroticism, Extraversion and Open-Mindedness are positively correlated with hedonic motivations; consumers with higher Neuroticism, Agreeableness or Open-Mindedness tend to shop online for utilitarian reasons. The study [36] showed that consumers with high levels of Conscientiousness are responsible, prone to control and planning, and can choose more utilitarian values than hedonic ones. The study [29] found that consumers with a high level of Open-Mindedness (openness to experience) are more positive about multinational products than consumers with a low level.

Conclusions

1. The theoretical basis of the research is the main provision of implicit social cognition, in relation to the study of consumer attitudes, as well as an analysis of research aimed at studying the relationship of personality traits that determine attitudes to various brands.
2. Much of the prior research has focused on the relationship between "Big Five" personality traits and explicit attitudes towards product brands as measured by self-assessment procedures. It is possible to compare the results of our research and of those previously conducted only conditionally, highlighting general trends only.
3. The importance of studying implicit consumer attitudes towards brands is pointed out by many researchers in the field of implicit consumer psychology. However, studies on the relationship of personality traits with the emotional and cognitive bases of implicit brand attitudes have not been found.
4. In the previous research, the authors proved the independence of the results of implicit-explicit measurements, on the basis of which, using factor analysis, "overall" implicit and "overall" explicit attitudes were built. In the present research, "cut points" were calculated for them, based on the interpretation of the sizes of the effects included in their components. It has been shown that the use of "shared" attitudes gives in some sense generalized conclusions about the influence of personality traits on the choice of product brands, and all these conclusions are consistent with the conclusions that are obtained from the consideration of the implicit and explicit components of "shared" attitudes.
5. When studying the role of personality traits in the choice of brands by attitudes, three zones of both implicit and explicit preferences were identified: preferences for domestic brands, for foreign brands and "uncertain" (either ambivalent or unexpressed) preferences. For explicit attitudes, it was possible to identify a pattern of personal characteristics that fall into the zone of "uncertain" preferences: consumers with such preferences have some "balanced" personal characteristics that allow them to make an informed choice and the ability to analyze it in each specific case. For consumers with a choice of both domestic and foreign brands, not all personality traits can be called

"moderately balanced". Very often, these personality traits determine the spontaneous and thoughtless choice of brands. For implicit preferences, such a pattern could not be identified.

6. Differences in the role of personality traits in the choice of cognitive and affective bases of both implicit and explicit attitudes are found, which sometimes lead to opposite results.

7. This research empirically confirms the different role of the affective and cognitive bases of the attitude towards domestic and foreign brands and their relationship with the personality traits of consumers.

8. Discrepancies between implicit and explicit assessments of attitudes towards brands raise the question of the need for further analysis of the psychological phenomena behind this discrepancy, as well as the development of tools for studying implicit and explicit attitudes, including the measurement of affective, cognitive and behavioral bases of attitudes.

9. This research is promising for increasing the predictive (prognostic) reliability of implicit procedures for measuring consumer attitudes and for a better understanding of both their psychological nature and the mechanisms of functioning in real life.

10. The aim of the research has been achieved; the answers to the questions posed have been received.

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Author contributions:

The research was conducted under the guidance of Prof. I.D. Plotka and Ass. Prof. N.F. Blumenau. All authors conceived of the presented idea of the paper. Plotka, Blumenau and Urbane conceived and planned the empirical research. Urbane carried out the research. Plotka and Urbane developed the theoretical background, Blumenau and Urbane performed the analytic calculations and performed the numerical simulations. All authors discussed the results and contributed to the final manuscript.

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