

## Modelling Customer Satisfaction with Food

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### ABSTRACT

**Purpose:** The subject of the article is the relationship between customer satisfaction, loyalty and personality characteristics. It aims to analyse factors that influence customer satisfaction and loyalty, including their mutual relationships. For this purpose, a comprehensive model of customer satisfaction was created.

**Methodology/Approach:** The research was carried out using a questionnaire survey on a sample of 1,530 customers of food producers (and 103 food business products that were non-durable) corresponding to the Czech population in terms of gender, age and region. The questionnaires were statistically evaluated using Structural equation modelling (SEM).

**Findings:** The results show that a strong link between standard customer satisfaction factors (perceived quality, perceived value, customer expectation) overshadows the influence of weaker factors (personality). However, this effect is fully demonstrated when these strong factors are filtered out.

**Research Limitation/Implication:** The paper focuses on foods that are sold through retail intermediaries, which also affect customer satisfaction. It may be different for other types of products and services and for products sold otherwise. It can also be limited to CR, resp. transition economics, ie. that in developed countries it could be different.

**Originality/Value of paper:** The contribution of the paper is the finding that customer satisfaction is influenced by a personality factors, whose effect is at first glance weaker. It also shows that the factor image can be constructed taking into account the competitive ability of the company as a hybrid and the functionality of the customer loyalty factor influences the way of its construction.

**Category:** Research paper

**Keywords:** customer satisfaction; personality; customer loyalty; image; competitiveness; modelling

## 1 INTRODUCTION

Since the 1990s, customer satisfaction models have emerged in the literature (Fornell et al., 1996; Gronholdt, Martensen and Kristensen, 2000), which assume that customer satisfaction is a multidimensional construct that is influenced by certain factors that are themselves one-dimensional or more dimensional (cf. Chang et al., 2016). Factors that have been repeatedly confirmed by researches as influencing customer satisfaction, including perceived quality (Ophuis and Van Trijp, 1995), perceived value (Chou and Kohsuwan, 2019), customer expectation (Chang et al., 2016) and complaint (Landon, 1980). The research carried out differs only in the strength of the relationship found (e.g. the difference between satisfaction and loyalty on profits and growth for products and services or in the specific interconnection of individual factors; for example, whether they affect customer satisfaction directly or indirectly (cf. Eklöf and Selivanova, 2008; Fornell et al., 1996; Gronholdt, Martensen and Kristensen, 2000; Johnson et al., 2001). Extending the model with customer loyalty confirms the impact of customer satisfaction on customer loyalty (Eklöf and Selivanova, 2008; Fornell et al., 1996; Gronholdt, Martensen and Kristensen, 2000; Ajami, Elola and Pastor, 2018), with authors rarely agreeing on the influence of customer satisfaction on customer loyalty (and not vice versa). In this respect our research is based on established and verified standards of the last thirty years.

In recent years, the issue of the competitive ability of a company has also come to the forefront, which also reflects customer satisfaction and competitiveness is usually given in the context of customer satisfaction alone (Chen, Chen and Lee, 2011), rather than under the action of the factors in the above models. Image is another factor that primarily appears in customer satisfaction models for services (Eklöf and Selivanova, 2008; Gronholdt, Martensen and Kristensen, 2000), and in the case of (food) products, González Menorca et al. (2016). The aim of the article is to extend the standard model of customer satisfaction relations (including standard factors that affect it) and its loyalty to include competitive ability and especially personality and find out new mutual relationships between the factors.

If competitiveness is an advantage in today's highly competitive market and customer satisfaction is the key to a company's financial performance, customer knowledge and the ability to influence customer satisfaction is a key ability. It is possible to ask several questions. How to incorporate factor competitiveness into the customer satisfaction model? How to construct this factor? How to incorporate the personality factor into the customer satisfaction model? How to construct this factor? How to construct a loyalty factor? Does the design of this factor affect the functionality of the customer satisfaction model? Our research answers all these questions.

## 2 THEORETICAL FRAMEWORK

In today's market environment, long-term customer relationships are being built and it plays a vital role in execution of strategy (Budianto, 2019). Customer satisfaction is defined according to Giese and Cote (2000) as a consumer's perception of how well a company has delivered their communicated value proposition.

Researches have shown a relationship between personality and customer behaviour (e.g. Chukwu and Igani, 2017). The relationship between customer behaviour and customer satisfaction has been demonstrated (Söderlund and Vilgon, 1999). The relationship of personality to other types of satisfaction, to financial satisfaction through financial capacity (Xiao, Chen and Chen, 2014) and to life satisfaction (Azizli et al., 2015) has also been shown. The relationship between customer satisfaction and personality was demonstrated (Gountas and Gountas, 2007), but it was only a simple model where the relationship of overall customer satisfaction to one of the four emotional types was determined.

In the context of customer satisfaction and loyalty research, the perception of the customer may be based on his or her personality (personal characteristics). These unique set of attributes represents the factor "personality" and McCrae, Costa and Busch (1986) classified personality traits into five factors (so-called Big Five): 1 extroversion; 2 agreeableness; 3 conscientiousness; 4 neuroticism; and 5 openness. These factors were applied in several studies (e.g. Jani and Han, 2014).

Tan, Foo and Kwek (2004) discovered that the positive emotions of customers related to customer satisfaction. A complex theoretical model was presented by Jani and Han (2014) that related personality, loyalty, satisfaction, ambience and image in a hotel setting. The results showed that satisfaction had a significant impact on hotel image and customer loyalty. With regard to satisfaction it can be measured in other ways (see Methodology).

Currently, several models are known which include the above factors. Swedish Customer Satisfaction Barometer (CSB) by Fornell (1992) was the first complex model. The authors continued with the American Customer Satisfaction Index (ACSI) for measuring the overall customer satisfaction. Eklöf and Selivanova (2008) used an Extended Performance Satisfaction Index (EPSI) for measuring employee and customer satisfaction, which includes the variables: image, customer expectations, customer perceived product quality, customer perceived service quality, customer perceived value, customer satisfaction and customer loyalty.

In conclusion, some factors have a proven influence on customer satisfaction and loyalty. These factors are perceived quality (Ophuis and Van Trijp, 1995), perceived value (Chou and Kohsuwan, 2019), customer expectation (Chang et al., 2016) and complaint (Landon, 1980) are found in the above models. Models are rather expanding, i.e. the number of factors is increasing. The personality

factor is missing there, or so far it was only part of the model parts, whether already within Big Five by Jani and Han (2014), or spread out in several factors, within the scope of exploring other forms of satisfaction.

### **3 METHODOLOGY**

To methodology, two different constructions were used to construct the loyalty factor to verify its functionality. The research was carried out using a questionnaire survey on a sample of 1,530 customers of food producers (and 103 food business products that were non-durable) corresponding to the Czech population in terms of gender, age and region. The questionnaires were statistically evaluated using Structural equation modelling (SEM).

#### **3.1 Setting of Factors Examined**

In the design of customer satisfaction (CS) we are based primarily on the model Fornell et al. (1996), Juhl, Kristensen and Østergaard (2002) and Jani and Han (2014). Overall customer satisfaction, which is the focus of our research, is measured by default with three indicators (Juhl, Kristensen and Østergaard, 2002) that focus on general product satisfaction (CS1), expectations about general customer satisfaction (CS2) and general satisfaction with the product compared to the ideal product (CS3).

In the basic models, customer satisfaction is a relationship of general customer satisfaction, perceived quality, perceived value, customer expectation supplemented by complaining or image (cf. Fornell et al., 1996; Juhl, Kristensen and Østergaard, 2002).

Perceived Quality (PQ), in the case of foods, quality means “good nutritional, microbiological and textural quality” (Cardello, 1995). Due to the fact that the research was focused more broadly on customer satisfaction, where perceived quality is only one of the factors, individual variables and questions were created by a combination of focus on general quality evaluation (PQ5) or evaluation of a specific quality requirement (PQ1-4) (compare with Fornell et al. (1996)) and focus on selected dimensions where taste (PQ1) represented experience quality attributes, composition (PQ2), and appearance (PQ3) represented intrinsic quality cues, nutritional value (PQ4) represented extrinsic quality cues and all of the above the parameters were then summarized in the last question (PQ5).

“A customer’s perceived value (PV) represents an overall mental evaluation of a particular good or service” (Beneke et al., 2013). We created this construct in accordance with the perceived quality construct where we measured the price/quality ratio of the product in general (PV1), focusing on product properties (PV2) and product functionality (PV3). Some authors (Samudro et al., 2020) also emphasize the impact of costs, so the construct has been supplemented with a survey of the cost-performance relationship (PV4) and overall quality (PV5).

Customer expectation (CE) in the food industry, expectations are linked to product quality (Cardello, 1995). Thus, the individual variables examined are related to the product quality forward (CE3, CE4) and backward (CE1, CE2) and were inspired by Fornell et al. (1996).

Complaint (C) is an expression of customer dissatisfaction (Landon, 1980). Therefore, the relationship of complaint to customer satisfaction should be negative (Fornell et al., 1996). Because quality is the most common cause of dissatisfaction (Day and Ash, 1979), the complaint factor has focused on it. In accordance with Fornell et al. (1996), the first variable (C1) was focused on whether the respondent ever complained about the product. Research into this factor has been complemented by a measure of feeling at least little dissatisfaction (C3) and propensity to complain (C2) in connection with the unsatisfactory purchase experience (Cho et al., 2003).

The problem of the image (I) factor is its difficult assessment because the evaluation of individual variables is left solely to the subjective evaluation of the respondent (cf. González Menorca et al., 2016). In terms of image, important factors are brand (I1), marketing campaign rankings (I4), which are inspired by González Menorca et al. (2016), as well as price (I3) and quality (I2) inspired by Kandampully and Suhartanto (2000). In terms of competitiveness, price (I3) and quality (I2) (Demeter, 2003), marketing and advertising (I4) (Siudek and Zawajska, 2014) and brand (I1) are the most important variables (Paul and Iuliana, 2018).

Customer loyalty (CL) can be defined as “a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behaviour” (Oliver, 1997). In our research, we focused on all three dimensions and within them to selected variables, which are answered in the questionnaire. Specifically, the behavioural dimension can be measured by up to three variables: repurchase intentions (CL1a), switching intentions (CL4), and exclusive purchasing. Attitude can be measured by variables: strength of preference (CL1b, CL2), advocacy (CL5), altruism and cognitive dimension. It can be measured by willingness to pay more (CL3), exclusive consideration and identification with the service provider (Jones and Taylor, 2007).

The personality factor (P) was not constructed on the basis of the Big Five Factors model as in Jani and Han (2014), because this approach is purely from a psychological perspective on human personality. In our research, we constructed the factor of personality on the basis of variables that have a demonstrable relationship to a certain form of satisfaction. Because of that, personality characteristics are divided into four areas (dimensions): financial capacity, personality disposition, future planning rate and attitude to marketing (advertising). To measure financial capacity, we use sufficiency of monthly income (Personality 1), access to the purchase of cheap products (Personality 2),

reserve for unexpected expenses (Personality 3), which were formulated on the basis of questions used in Taylor's research (Taylor, 2011).

Personality dispositions (optimism or pessimism) could influence product satisfaction (cf. Westbrook, 1980). Optimism (or its degree - Personality 4) can be classified as personality traits, and research has shown a link between optimism and life satisfaction (Ho, Cheung and Cheung, 2010). For planning future, respectively to measure future planning, the quantities Personality 5 (filling of the refrigerator) and Personality 6 (frequency of shopping) are focused.

Several kinds of research also examine customer attitudes to advertising or marketing (e.g. Chan and Cui, 2004) and their impact on customer satisfaction. The attitude of customers (their criticality) to marketing (specifically advertising) is focused on Personality 7.

### **3.2 Model and Hypothesis**

The construction of hypotheses and the model constructed from them (see Figure 1) is based on research and especially modelling of customer satisfaction in the last thirty years. The model is based on The American customer satisfaction index designed by Fornell et al. (1996), which is built on nine hypotheses:

- H1: Customer expectation positively influences perceived quality.
- H2: Customer expectation positively influences perceived value.
- H3: Perceived quality positively influences perceived value.
- H4: Perceived quality positively influences customer satisfaction.
- H5: Customer expectation positively influences customer satisfaction.
- H6: Perceived value positively influences customer satisfaction.
- H7: Customer satisfaction positively influences customer loyalty.
- H8: Customer satisfaction negatively influences complaint.
- H9: Complaint influences customer loyalty.

The basic model has been expanded to include a factor image and three other links (in the form of hypotheses), which is part of the ECSI model (Ciavolino and Dahlgaard, 2007):

- H10: Image positively influences customer satisfaction.
- H11: Image positively influences perceived value.
- H12: Image positively influences customer loyalty.

Based on the research by Jani and Han (2014), the model was extended by a factor of personality and last link (hypothesis):

H13: Personality positively influences customer satisfaction.

Hypotheses H1 to H12 are based on verified findings and models, which were not tested in this complex form, resp. in the form of such a complex model. Hypothesis H13 is completely new in this respect, as the personality factor has not yet been part of any comprehensive model of satisfaction.

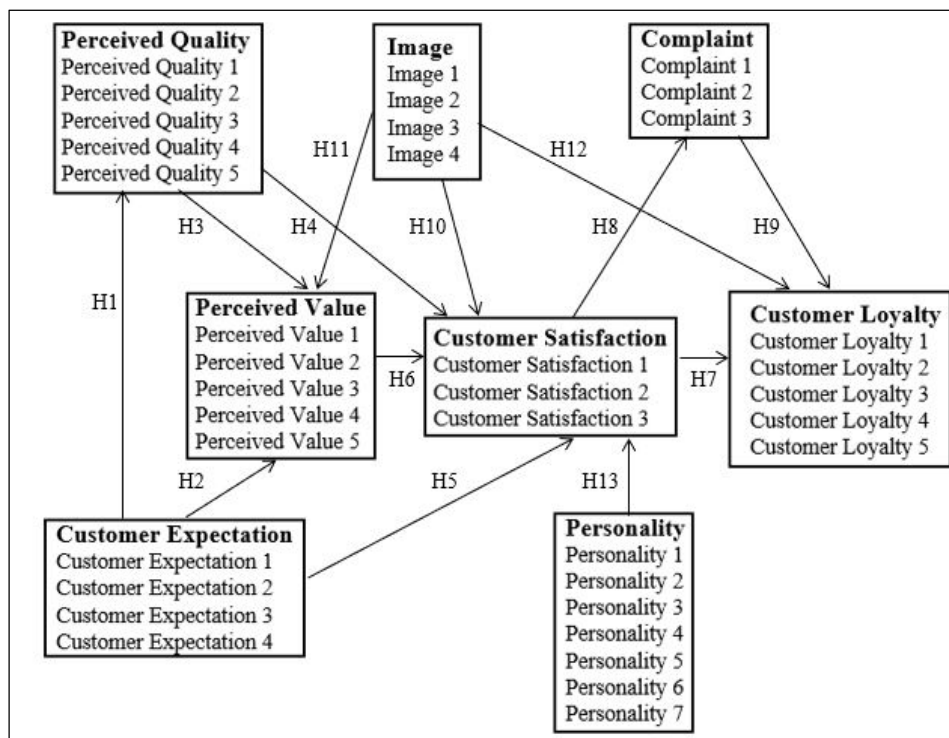


Figure 1 – Customer Satisfaction Model

Concerning the results achieved, one more (partial) model was created in order to clarify better the relationships of the personality factor within the customer satisfaction model. The model is shown in Figure 2 and is based on four hypotheses (Jani and Han, 2014):

H14: Personality positively influences customer satisfaction.

H15: Customer satisfaction positively influences customer loyalty.

H16: Customer satisfaction positively influences the image.

H17: Image positively influences customer loyalty.

Hypotheses H14 and H17 are based on a validated model, which was, however, designed for the area of services (specifically for the hotel). The benefit of our

research is therefore its testing on products, resp. in the processing industry (specifically in the area of food production and sales).

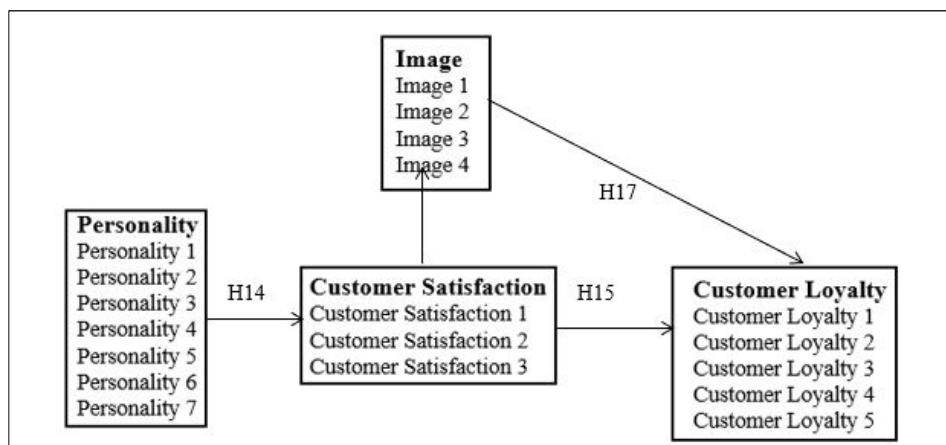


Figure 2 – Sub-Model of Customer Satisfaction and Personality

### 3.3 Statistical Methods

For data processing, we used the methods of SEM. The aim is to describe the investigated situation by a model of dependencies of variables that are directly measurable or constructed from measurable, observable variables. Such variables are called latent. The predicted structure of dependencies is then tested using the SEM technique. Variables can be either direct or also mediating, all such types of bonds being tested simultaneously. Therefore, it is a versatile method (Nachtigall et al., 2003). The SEM method uses confirmatory factor analysis (CFA) techniques to verify the structure of latent variables and path analysis (PA) to test relationships between latent variables. It improves and generalizes these techniques, because, unlike the path analysis alone, it allows testing of latent variables measured with some reliability, which should not be 100%. Therefore, taking into account the error due to measurement inaccuracy, the relationships between latent variables can be more accurately estimated (Hair, Anderson and Babin, 2010).

Assessing the suitability of the model is done, for example, by checking the plausibility of the estimated parameters, if the signs of the selected parameters match the expected signs (Hair, Anderson and Babin, 2010). Therefore, good match indices, such as the RMSEA coefficient and others listed below, are used. In general, results may vary with different indexes, and one model cannot be divided into acceptable and unacceptable models. Often several statistically equivalent models with different interpretations can be interleaved with one data, which is one of the problems of this method (Hancock and Mueller, 2006). The suitability of the model is then assessed according to the theory and knowledge of the area. One-way causality in the model must also be justified in this way since this causality cannot be directly proven by the SEM method.



Conformity indexes were used to express the model's compliance with data:

- NFI (Bentler-Bonett Standardized Compliance Index),
- NNFI (Bentler-Bonett non-standard match index),
- CFI (Comparative Compliance Index),
- RMSEA coefficient.

NFI, CFI, NNFI compliance index values greater than 0.9 (Bentler, 1992), RMSEA values below 0.1 can be considered as good fit of the model with the data. However, in some cases, a lower RMSEA coefficient may not always mean a better match. For statistical processing, we used statistical software EQS, which is used to model situations using structural equations.

### **3.4 Questionnaire and Research Sample**

The research was performed quantitatively using a questionnaire (cf. Fornell et al., 1996; Gronholdt, Martensen and Kristensen, 2000). The questionnaire contained 37 closed questions and each question represented a partial variable of the relevant factor (see above). The questions were evaluated in a scale of 1-10 in accordance with the researches of Oliver (1997) and Söderlund (2006), with 1 being the worst rating and 10 being the respondent's best rating. The 10-point scale was chosen because of the expected weaker links between some factors, as Frennea and Mittal (2017) found a relationship between the scale width and the correlation found, where a larger scale width meant a greater correlation.

The research sample consisted of 1,530 customers. The respondents were randomly selected so that the sample was representative of the Czech Republic population over 18 years of age in terms of gender, age and region.

Customers rated 103 food business products that are commonly available on the Czech food market. Products were randomly assigned to respondents. The products included beverages (alcoholic and non-alcoholic) and foodstuffs (dry and wet). The assortment examined can be characterized as non-durables goods.

## **4 RESULTS AND DISCUSSION**

The results of testing the individual hypotheses and the final model construction are shown in Figure 3, related tests in Table 1, specific values of factors, respectively the forces of their relationships than in the respective equations and Table 2.

The results indicate that relationships were found between the factors that anticipated all of the above hypotheses except for H4. It was therefore not possible to prove the influence (positive or negative) of the image factor (in relation to the competition) on customer satisfaction. The relationship of the (positive) image factor to perceived value and customer loyalty without the

relationship to customer satisfaction thus corresponds to the involvement of this factor, which was assumed and verified by Gronholdt, Martensen and Kristensen (2000) in the basic ECSI model.

Table 1 – Fit Indices

<b>NFI</b>	0.886
<b>NNFI</b>	0.882
<b>CFI</b>	0.894
<b>RMSEA</b>	0.087

Because the hypotheses tested in addition to relations of individual factors, whether the relationship is positive or negative, it seems that it is necessary to reject the hypothesis H8. However, the complaint factor has a negative character, i.e. the more complaint, the worse. In accordance with the above methodology, however, a value of 1 meant the strongest complaint and a value of 10 the weakest complaint. Thus, the positive relationship between customer satisfaction and complaint means that the more satisfied the customer, the fewer product complaints, the hypothesis is confirmed and the factual relationship between the factors is negative. Thus all hypotheses H1-H3 and H5-H13 can be confirmed.

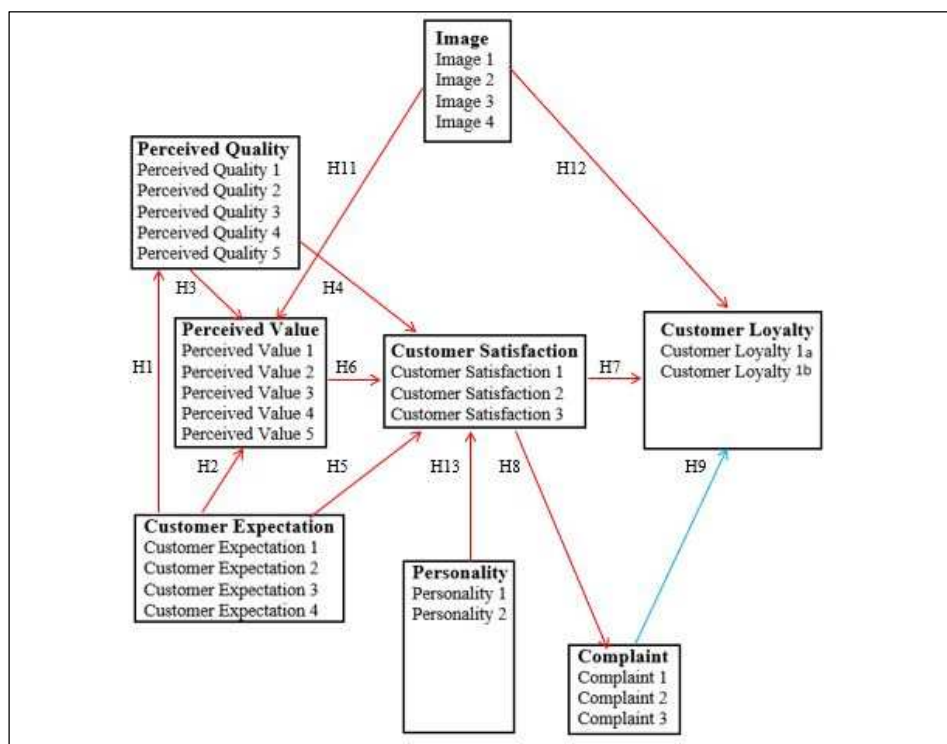


Figure 3 – Customer Satisfaction Model

The finding of the positive impact of the customer satisfaction on customer loyalty (H7) has been confirmed in many previous studies (cf. Ajami, Elola and Pastor, 2018; Ciavolino and Dahlgaard, 2007; Fornell et al., 1996; Gronholdt, Martensen and Kristensen, 2000), so it is not a surprise in this direction. Research shows that factor loyalty in the model (see Figure 2) was constructed from only two variables, namely the repurchase intentions that are part of the behavioural dimension and the strength of preference that is part of the attitude dimension. Thus, the method of measuring loyalty seems to affect the relationships and functionality of the entire model, with fewer dimensions (and quantities) leading to better results. Concerning the nature of goods, which are foodstuffs, the question arises whether the absence of a cognitive dimension of loyalty is not related to the form of sale (self-service) and the way of sale; how much customers think about purchasing and how much they buy mechanically and thoughtlessly based on learned customs (cf. Grunert, 2005).

Also, the finding of a positive relationship between image and customer loyalty (H12) is not surprising, as a number of studies have also confirmed this relationship (cf. Ajami, Elola and Pastor, 2018; Ciavolino and Dahlgaard, 2007). It seems that the design of the image factor (in combination with the competitive ability of a business and a product) can affect this link.

The hypothesis H9 (complaint and customer loyalty) is confirmed, but this effect is not clear (Fornell et al., 1996). Our research suggests that “the firm’s complaint handling has been managed to make a bad situation even worse - it has contributed further to customer defection” (Fornell et al., 1996). Research suggests that complaint handling is passive in the retail sector, where we investigate the foods, leading to dissatisfied customers and leaving customers uncomfortable (cf. Hansen, Wilke and Zaichkowsky, 2010).

Another interesting outcome is the demonstration of the impact of personality on customer satisfaction (H13), as the effect of personality is very weak (almost zero), and at the same time, it has proved the effect of only one dimension (financial capacity) and two quantities of this factor. Given that the impact of personality on customer satisfaction is weaker in the conducted research (cf. Jani and Han, 2014), this finding is not surprising. It seems that the influence of the (weak) personality factor is outweighed and overshadowed by other (stronger) factors.

Construct Equations (1 – 5) are following:

Standardized Solution	R2
PQ = 0.945*CE + 0.326	= 0.894 (1)
PV = 0.507*PQ + 0.183*I + 0.282*CE + 0.600	= 0.640 (2)
CS = 0.549*PQ + 0.270*PV + 0.182*CE + 0.000*P + 0.318	= 0.899 (3)
CL = 0.634*CS - 0.110*C + 0.285*I + 0.725	= 0.474 (4)
C = 0.275*CS + 0.961	= 0.076 (5)

Conformity indices are close to 0.9, which is considered to be the threshold for good model quality. The RMSEA is less than 0.1, which also indicates good model quality. For structural equations, there are relatively high coefficients of determination (R squared), which means good predicative value of partial regression models. Almost all sub-dependencies have a predicted direction and are statistically significant (p-value less than 0.05). Only the dependence between the constructs Complaint and the Customer loyalty has the opposite direction, but the effect of the Complaint construct in the model is generally rather weak. The Personality construct has an extremely small effect in the model, but this effect is statistically significant. The effects on the Loyalty construct are negative, which is fine, because the sub-variables of this used construct have a reverse range compared to all other variables.

*Table 2 – Values of Relationships of Factors Examined*

Outcome	Predictor	St. estimate	St. error	Test statistic	p-value
PQ	CE	0.945	0.021	42.1	<0.05
PV	PQ	0.507	0.069	6.08	<0.05
PV	I	0.183	0.015	9.607	<0.05
PV	CE	0.6	0.064	3.362	<0.05
CS	PQ	0.549	0.057	10.093	<0.05
CS	PV	0.27	0.026	13.253	<0.05
CS	CE	0.182	0.052	3.381	<0.05
CS	P	<0.01	<0.01	>100	<0.05
CL	CS	0.634	0.01	20.402	<0.05
CL	C	-0.11	0.1	-3.978	<0.05
CL	I	0.285	0.008	10.816	<0.05
C	CS	0.275	0.003	8.897	<0.05

In the case of the sub-model (see Figure 4 and Table 3), all hypotheses (H14-H17) were confirmed. It is interesting to note that in this sub-model, the influence of all three dimensions and all personalities was demonstrated. This fact confirms that the sub-model is able to detect any relationships that would otherwise remain hidden in a complex model. However, the informative ability of the bond is again very weak. At the same time, in comparison with the comprehensive model, it appears that the financial capacity dimension is the strongest in terms of the personality factor.

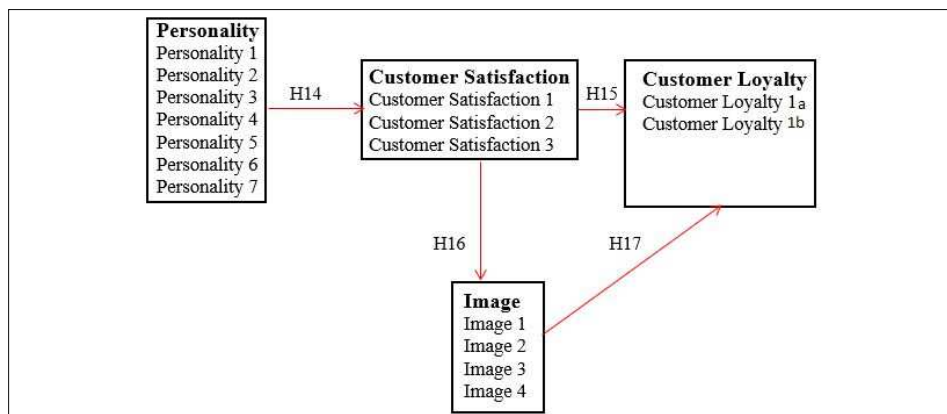


Figure 4 – A Partial Model of Customer Satisfaction and Personality

Table 3 – Fit Indices

<b>NFI</b>	0.742
<b>NNFI</b>	0.733
<b>CFI</b>	0.751
<b>RMSEA</b>	0.112

Construct Equations (6 – 8) are following:

Standardized Solution	R2
$I = 0.805*CS + 0.594$	$= 0.647$ (6)
$CS = 0.212*P + 0.977$	$= 0.045$ (7)
$CL = 0.269*I + 0.530*CS + 0.645$	$= 0.583$ (8)

All assumed dependencies were proved in the model. There was also a weak but statistically significant influence of the Personality construct, even when using all its sub-variables. In the previous overall model, the effect of this construct was masked by the very strong influence of other predictors. In this model, the indexes of conformity are slightly worse. The model has a weaker informative ability (see Table 4).

Table 4 – Values of Relationships of Factors Examined

Outcome	Predictor	St. estimate	St. error	Test statistic	p-value
I	CS	0.805	0.022	34.175	<0.05
CS	Personality	0.212	0.038	5.854	<0.05
CL	I	0.269	0.015	6.311	<0.05
CL	CS	0.53	0.014	12.304	<0.05

During the construction of a partial model of customer satisfaction and personality, it turned out that it did not matter how customer loyalty was measured. If more characteristics (four in total, different from those used in the above model) from all three dimensions (including cognitive) were involved in the factor, the modelling results achieved were almost identical (see Table 5). Figure 4. A partial model of customer satisfaction a personality.

*Table 5 – Fit Indices*

<b>NFI</b>	0.740
<b>NNFI</b>	0.733
<b>CFI</b>	0.751
<b>RMSEA</b>	0.107

Construct Equations (9 – 11) are following:

Standardized Solution	R2
$I = 0.805 * F4 + 0.594$	= 0.648 (9)
$CS = 0.216 * P + 0.976$	= 0.046 (10)
$CL = 0.295 * I + 0.649 * CS + 0.428$	= 0.817 (11)

The findings from the partial models regarding the construction of the loyalty factor in the complex model do not apply, as a statistically significant complex model was not created with all dimensions. It confirms the idea mentioned above that loyalty measurement affects the linkages and statistical significance of the model in which this factor is present, with fewer dimensions (and quantities) leading to better results in larger (more complex) multi-factor models.

## 5 CONCLUSION

The resulting complex model in Figure 2 is basically a combination of ACSI and ECSI models, complemented by factor personality. Given the time of both models and the development of customer satisfaction modelling over time, it is evident that a number of factors affect customer satisfaction and loyalty, and it can be assumed that even this extended model is not final. On the other hand, it is clear that the customer satisfaction model, taking into account customer loyalty, image, perceived quality, perceived value, customer expectations and complaint, is the most powerful factor, which is complementary to other factors (such as personality in this case). However, the considerable strength of these factors can weaken the weaker factors to the point that they will not be reflected in the customer satisfaction model, even if they have some influence on it. It, therefore, makes sense to shield the effects of these influential factors and to create not only complex but also partial models (see Figure 3 and 4).

At a time of ever-increasing competition, which may not be and is not the case with the food market, it is important to know all the factors that influence customer satisfaction. Changing the factor with a weak link can give the company a significant competitive advantage. Knowledge of the influence of specific personality factors on customer satisfaction can be used by the company in marketing activities (especially promotion) and with regard to the customer's critical approach to marketing (advertising) can choose the appropriate form. Of course, this knowledge can also be used in the sale itself, especially if there is an interaction between the customer and the store staff.

The results also show that it does not matter how the investigated factor is constructed and understood. Obviously, the different design of a factor and taking into account different dimensions (for multidimensional factors such as loyalty in particular), especially in terms of quantity, affect the functionality of the resulting model. It is true that the larger the model in terms of the number of factors involved, the smaller the number of multidimensional factors (in this case customer loyalty).

To limitations, the paper focuses on foods that are sold through retail intermediaries, which also affect customer satisfaction. It may be different for other types of products and services and for products sold otherwise. It can also be limited to CR, resp. transition economics, ie. that in developed countries it could be different.

Furthermore, it would be appropriate to continue research into the synergy of customer satisfaction with the manufacturer's product and at the same time customer satisfaction with the service of trade as an entity selling the manufactured product. It would be interesting to examine the relationship and influence of the intermediary (seller or shop) on customer satisfaction with the product. All this in the context of the personality factor, as it is a question of how the product of the manufacturer and the service of the business affect the customer. Synergy would be ideal, but the action can also go against each other or well-received, and the product acting on the customer can compensate for the poorly received trade service and vice versa.

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## CONFLICTS OF INTEREST

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.



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