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# **Investigation of factors influencing loyalty – the role of involvement, perceived risk and knowledge**

## **Abstract**

Our research aimed to reveal the effects that can be observed during the buying process of food products and can influence the decisions of customers. We focused on the role of enduring involvement in customers' behavioural loyalty, that is, the repurchase of food brands. To understand this relationship in a more sophisticated way, we involved two mediating constructs in our conceptual model: perceived risk and perceived knowledge of food products. The data collection was carried out among undergraduate students in frame of an online survey, and we used SPSS/AMOS software to test the model. The results only partly supported our hypothesis, although the involvement effects on loyalty and the two mediating constructs were strong enough, loyalty couldn't be explained well by perceived risk and knowledge. The roles of further mediating/moderating variables should be determined and investigated in the next section of the research series.

**Key Words:** brand loyalty, involvement, knowledge, perceived risk, food

## **1. Introduction**

As a result of the introduction of the Stimulus-Organism-Response (S-O-R) paradigm in psychology by Woodworth (1928), there has been substantial research focusing on the investigation of subjective variables that play dominant role in individuals' reaction to different stimuli or affect these responses. This new approach has also induced a number of new mainstream research directions in marketing and generated many new concepts which help to understand the individuals' buying behaviour. Despite having widely studied, concepts and relationships in this area have remained undefined and unrevealed, which demonstrates the complexity of the buying process.

In our research series we aimed to investigate the effect of enduring involvement on brand loyalty. Many research projects have focused on this link and determined different levels of association so far (Mittal and Lee, 1989; Shukla, 2004) but this area has not been completely explored, especially because of the moderating and/or mediating role of the related concepts.

In the development phase of the theoretical approach we aimed to determine a general research concept but our empirical investigation focused on foods. In our conceptual model we included the perceived risk of foods and customers' perceived knowledge of them with the intention to identify the effects these concepts bring into this relationship.

In most cases, involvement explains the long lasting and intensive process of information seeking, decision-making, and application of different choice criteria, etc.. Buying food products, on the other hand, can be a recurring habit and routine. The relative low monetary cost of particular food products and the weak effect of individual brand decision-making on the household budget (Mitchell and Harris, 2005) can lead to low (situational) involvement of customers. Researches supporting this effect mainly concentrate on specific product categories instead of foods in general. Although a particular food product does not cause difficult decision-making problem for customers, the whole food category plays important role in their life. The increasing consciousness of customer behaviour and the more intensive interests in healthier life-style have drawn additional attention to this area (Bell and Marshall, 2003). The communication activities of producers and retailers and the faster and faster product development and market launch can also strengthen the inquiry towards food products in general. These tendencies and the concept of loyalty itself suggest that in case of foods we should investigate the enduring, context-free factors and individuals characteristics. Hence, we focused on enduring involvement, general risk and knowledge perceived by customers to explain the variance of brand loyalty.

## **2. Literature review**

As all the concepts we used in our conceptual model are not clearly defined in the marketing literature, or, at least, we can find minor differences in their meanings and classifications, it is useful to review the competing approaches before measuring the association between them.

## 2.1. Loyalty

In general we can determine two different types of loyalty, behavioural and attitudinal ones. The former refers to the relative frequency of returning to the object of loyalty, that is, it means buying the same brand or visiting the same store. In case of attitudinal loyalty we presume a kind of emotional commitment towards the favourite brand, product category, store, etc. The two concepts can strongly correlate but do not necessarily exist at the same time, as many factors can distract customers from the preferred brand, for example out-of-stocks, price reductions of competing brands, and so on. Dissatisfied consumers, on the other hand, can show similar buying patterns and select the same brand because of the concept of inertia, the perceived monetary and cognitive cost of brand switching, or for other reasons. If customers are both emotionally committed and frequently buy the same brand, we can regard them truly loyal ones, but the literature distinguishes spurious and latent loyalties as well, based on the attitudinal and behavioural dimensions of the concept (see Figure 1.).

Table 1. Types of customer loyalty

		Repeat patronage	
		High	Low
Relative attitude	High	Loyalty	Latent loyalty
	Low	Spurious loyalty	No loyalty

Source: Dick and Basu (1994)

As it has been mentioned before, the direction of loyalty can be different as well. In most cases studies investigate brand and store loyalties but it is easy to see that we can extend this concept towards many other objects related to the supply side, such as brand groups, product categories, producers, service providers or their employees. Instead of store loyalty a customer can be loyal to some selling points, a chain or just a form of retailing (e.g. discounts, hypermarkets, door-to-door sales, online channels, etc.)

In our research, the direction of loyalty can be viewed as brand loyalty but we aimed to measure the general level of it across all the food categories. From the point of another type of classification, within this study loyalty is considered in terms of behavioural rather than

attitudinal one since latter is a more complex concept with several subcategories. Another reason to prefer a behavioural loyalty to the attitudinal one is that in practice the managers are more interested in the former one, because of the more direct impact on financial performance of the company as a key determinant of profit generation.

## ***2.2. Involvement***

The investigation of involvement in the field of behavioural disciplines can be originated in the 60' (Higie and Feick, 1989), which has become one of the most researched theoretical construct today. The concept of involvement first appeared in social psychology (Sheriff and Cantril, 1947), where it describes the relationship between the ego and an object as a group of beliefs related to the individual. Later it was understood as a concept similar to motivation affecting purchasing decisions (Howard, Sheth, 1969). Within this concept, many regarded it as the intensity of information processing (Krugman, 1965). Others have used it to describe a general level of interest taken in an object (Day, 1970). According to one of the most widely used definitions of involvement it is "a person's perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky, 1985:342).

Due to the diversity in the interpretation of the concept, there was a need for synthetizing the different approaches, classifications and determining the structural relations between them. Such a ground-breaking work stems from Houston and Rothschild (1977), who have adapted Woodworth's S-O-R model to this field, and differentiated enduring, situational and response involvement. Enduring involvement is a relatively constant structure in the memory, which is based on the individual's experience and the importance of the object. On the other hand, situational involvement is a kind of short-term motivational factor, which is typically initiated by the buying process in marketing. The authors regard situational involvement as a stimulus or as a direct consequence of it in the S-O-R model. Response involvement can be defined as the effect of situational involvement, and includes all the cognitive and behavioural processes that occur throughout the buying process. They assumed that the enduring involvement moderates this relationship between situational and response involvement.

Andrews, Durvasula and Akhter (1990) offer a conceptual framework of involvement, describing it in terms of intensity, direction and persistence, and relying on these dimensions one can determine different types and classifications. Persistence, for example, can be the

base of the distinction of situational and enduring involvement. By involvement intensity the authors mean the degree of arousal with respect to the goal-related object and low, high and moderate levels of involvement can be distinguished. Many empirical studies classify the respondents based on these values. According to the direction of involvement infinite subgroups of involvement can be identified. Gyulavari (2005) finds that in marketing, the most investigated involvement types are the brand- and product(category)-involvement reflecting the importance of a given brand or product category, purchase-decision involvement (PDI) focusing on the context of the decision in the buying process, shopping involvement indicating the hedonic value offered by the process itself and advertising message involvement signalling the individual's interest in active information seeking and processing.

In this study we view involvement as an internal state that reflects the importance and relevance of the object for the individual. As we mentioned in the introduction, the research presented here focuses on general enduring involvement in food products. The two reasons behind that are the low situational involvement level in case of buying in this product category and our conscious orientation to reveal context-independent mechanisms behind the loyalty concept. Within the enduring nature of this concept, in this phase of our research series we measured involvement in food products as a whole, that is, respondents had to evaluate their relations to this category in general.

### ***2.3. Perceived risk***

Perceived risk is a relatively well-defined concept in marketing literature, although, the different subtypes of it requires further conceptualization work and currently have received greater research attention. We accept the definition of Kindler (1987:13), which states that “the risk is description of a behavioural alternative's potential, negatively perceived consequences including both weight and probability of occurrence of them”. Unlike Kindler, who emphasizes the potential negative outcome, Kolos (1998) draws the attention to that the positive consequences are also included in the concept of risk in certain disciplines. She also agrees, however, that the interpretation of positive outcomes in a buying decision can be confusing and the marketing literature and practice regard customers who primarily try to prevent the negative consequences of their behaviour.

In respect to our study, an important distinction is made by Bettman (1973), who determined two types of perceived risk, inherent and handled ones. Inherent risk is related to the product category, and this constant perception is independent from situational factors. Handled risk can be induced by inherent risk but, besides that, many other contextual stimuli, as well. As, we concentrate on the enduring characteristics of the buying process, we included inherent risk in our research model.

#### ***2.4. Perceived knowledge***

While knowledge was earlier considered to be a unidimensional variable, later it was described as a complex system depending on the information content stored in the memory (Brucks, 1986). Knowledge categorizations in marketing literature most frequently include those along the lines of knowledge depth, type, or area. Not surprisingly, in terms of knowledge depth expert and novice levels are differentiated. Sometimes a moderate level is added to that, indicating a level in between the first two. Varying levels of knowledge depth will result in varying consumer behaviour, e.g. when it comes to information processing, experts' processing of basic issues is fuller, as they make better use of their prior knowledge and are able to link new information better to that (Chi, Glaser and Rees 1981).

Knowledge used in marketing is usually related to products, product classes or brands. The concept of product knowledge (long in the focus of research in the 1980s) is considered to be an important factor of information processing (Raju, Lonial and Mangold, 1993). According to the most popular and most widely accepted view three types of consumer knowledge are to be distinguished (Raju, Lonial, and Mangold, 1993):

- (1) Subjective (perceived) knowledge
- (2) Objective knowledge
- (3) Usage experience

Subjective knowledge is the consumer's perception of their own knowledge (Park and Lessig 1981). Objective knowledge is the actual amount, type and organization of knowledge (Staelin 1978). Finally, usage experience - also known as self-perceived knowledge - refers to purchase or usage experience (Monroe 1976).

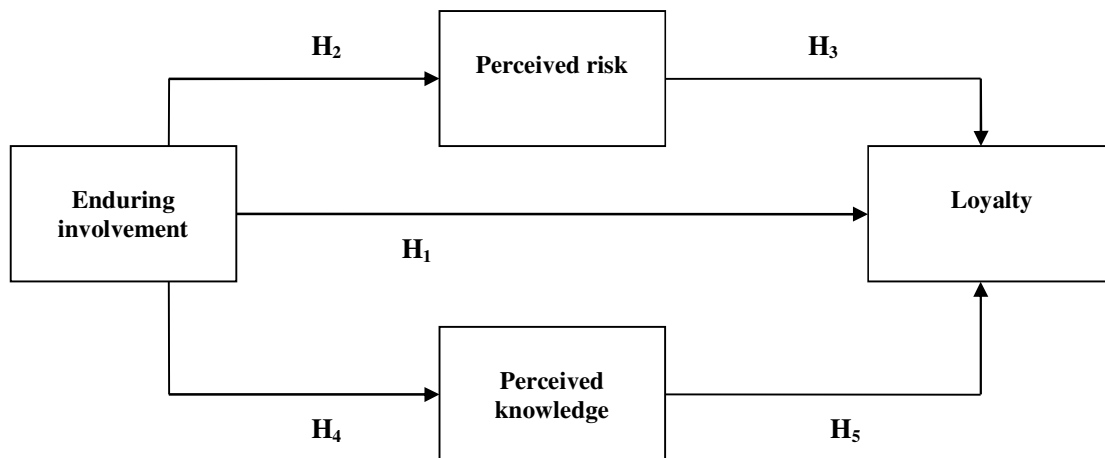
Raju, Lonial and Mangold (1995), although assuming a positive relationship between subjective knowledge and information seeking, do not find a significant relationship between the two in their

study. When examining the relationship between decision and knowledge they conclude that consumers with a high rate of subjective knowledge are less confident in their decisions. Their conclusion springing from the lack of relationship between objective knowledge and decision is that decision primarily originates in self-confidence instead of actual knowledge. According to a theory, though empirically not yet supported, subjective knowledge gives more of an insight into decision-making processes, since it does not only show levels of knowledge but levels of self-confidence. Hence, in our study we adopted the concept of subjective knowledge into our model.

### 3. Research model and hypothesis

Hereinafter the conceptual model of the study and the hypotheses we have set up and tested are presented.

Figure 1. The research model



#### 3.1. The effect of enduring involvement on behavioural loyalty

In the S-O-R model adapted to involvement by Houston and Rothschild (1977) the decisions made during the buying process are influenced directly by situational involvement and enduring involvement has only a moderating role in this relationship. In contrast, Mittal and Lee (1989) in their empirical model assumed and confirmed that enduring involvement has direct effect on different behavioural variables. In the literature situational involvement is viewed as an antecedent of brand loyalty. The theory behind this is that situational involvement evolves when customers perceive some level of risk in the buying context and



try to handle that. As a consequence, customers can follow different strategies, typically rely on well-known, formerly used brands, their preferences are formed and choices are based upon their experience (Kolos, 2004).

However, unlike situational involvement, which entails a kind of rational reaction in the buying process, enduring involvement generates an emotional relationship between customers and the given product category. This can have a further emotional effect on the way individuals are going to respond to stimuli. For instance, several studies undertaken concluded that the probability that consumers have favourite brands is higher if they are involved in a particular product category in the long run (Zaichowsky, 1988; Beatty, Homer and Kahle, 1988). Many research studies investigated the link between enduring involvement and attitudinal brand commitment and the further effect on brand loyalty (Iwasaki and Havitz, 1998, Quester and Lim, 2003). Based on these research findings we postulate that by consumers whose enduring involvement is higher in a product category as they have spent more time and have paid more attention on that, after a while an emotional engagement to one or some brands within the category will evolve. This leads to the prediction that they will adhere to their favourite brands.

*H<sub>1</sub>: In relation to food products, enduring involvement has a positive effect on behavioural brand loyalty.*

### ***3.2. The effect of enduring involvement on perceived risk***

Houston and Rothschild (1977) assumed that customers with higher enduring and situational involvement will react more negatively to product attributes that do not reach their expectations. Many researchers hypothesize that enduring involvement leads customers to make effort to reach higher satisfaction level (McColl-Kennedy and Fetter, 2001; Russell-Bennett, McColl-Kennedy and Coote, 2007). The customer who loves travelling and all year continuously plans and prepares for the next journey, feels stronger disappointment if it is raining all the time during the holiday or his luggage is lost or any other negative accidental event occurs than the other one who is not involved in this leisure activity and going on holiday is not a crucial part of his/her life. While the former one strives for perfection and holds to the elaborated travel plan, the latter one can be flexible in case of unexpected negative incidents. As a consequence, individuals with higher enduring involvement perceive

higher risk and this can reach a constant higher level regarding the given product/service category, and which is named inherent risk by Bettman (1973). We also targeted to measure this kind of risk and based on the train of thought above we established the following hypothesis:

*H<sub>2</sub>: In relation to food products, enduring involvement has a positive effect on perceived inherent risk.*

### ***3.3. The effect of perceived risk on loyalty***

Brand loyalty is viewed as customers' strategy to handle risk, which can be identified as an antecedent (Mittal and Lee, 1989) or a consequence (Dholakia, 2001) of situational involvement. This role of brand loyalty is supported by studies (Mittal and Lee, 1989; Kolos, 2004) but one could identify several other tools how customers can lower their own perceived risk, such as intense information seeking, product trial, intra-customers communication, etc. (for further example see Kolos, 1997). Risk-handling strategies, however, can be different in terms of the time and the mental effort they require. In the research we should take the characteristics of food products into account since customers generally make many sequential decisions concerning different product categories within relative short time. When we discuss the efforts required by the risk-handling strategy of customers, in case of food products this can be more serious and this makes customers to choose a general, easily implementable method. We assumed earlier that enduring involvement can lead to a level of perceived risk regarding product categories or food products in general. In similar way the mental reaction of customers to this risk can stimulate general application of simplified processes and decision-making patterns across food categories.

*H<sub>3</sub>: In relation to food products, perceived inherent risk has a positive effect on behavioural brand loyalty.*

### ***3.4. The effect of enduring involvement on perceived knowledge***

In previous studies researchers concluded that involvement and knowledge are positively correlated since customers with higher involvement proved to be more intense information seeker that increases their knowledge about the objects. This link between these constructs

was later also verified (Bei and Heslin 1997). The authors found that individuals who are more involved in a product category make worse decisions than others who are less involved in but possess more knowledge about that. Celsi and Olson (1988) argued that the involvement and the perceived knowledge related to food products are in causal relation since knowledge acquisition about the object supposes a certain level of interest. Based on this, we have a similar hypothesis, which assumes:

*H<sub>4</sub>: In relation to food products, enduring involvement has a positive effect on perceived knowledge.*

### ***3.5. The effect of perceived knowledge on loyalty***

Customers with higher knowledge are able to distinguish the brands' potential performance even if there are only minor differences between them, so they could increase the mental barrier to substitution possibilities. In this way the higher knowledge can lead customers to remain loyal. In addition to that perceived knowledge can strengthen the confidence and customers can feel a kind of justification of their former brand decisions and reinforce similar behaviour. Individuals with less perceived knowledge can be uncertain about the quality of the products selected and tend to try other alternatives. Therefore, we assume that perceived knowledge has a positive effect on loyalty.

*H<sub>5</sub>: In relation to food products, perceived knowledge has a positive effect on behavioural brand loyalty.*

## **4. The research method**

We used an online questionnaire among university students (n = 167). The administration was anonymous and voluntary. The respondents were awarded extra course points above the regular ones to increase response rate.

The constructs included in the research model were measured on five-point Likert-scales where 1 = "strongly disagree" and 5 = "strongly agree". Each scale of the constructs involved three items, that is, we have had altogether twelve items evaluated. In case of three constructs we adapted general, internationally published scales to food products (enduring involvement: a reduced version of Zaichowsky, 1985; perceived risk: risk dimension of CIP-scale, Laurent

and Kapferer, 1985; perceived knowledge: scale by Flynn and Goldsmith, 1999). The food-related behavioural loyalty-scale was developed by the authors.

Table 2. Study measures

<b>Factors</b>	<b>The Origin of the scale</b>	<b>Scale items</b>	<b>Cronbach's <math>\alpha</math></b>
Enduring involvement	Zaichkowsky (1985)	Food interests me.	,794
		Food is important to me. (r).	
		Food has great significance to me.	
Perceived risk	Laurent and Kapferer (1985)	If, after I bought a food product, my choice prove to be poor, I would be really upset	,691
		It is really annoying to purchase a food product that is not suitable.	
		When you buy a food product, it is not a big deal if you make mistakes (r).	
Brand loyalty	self-developed scale	In most food categories I generally insist on a brand I used to.	,767
		In most cases, I buy the same brand within a given food category.	
		Until I am not disappointed by a food brand, I intend to buy it again.	
Perceived knowledge	Flynn and Goldsmith (1999)	I know pretty much about food	,892
		When it comes to food, I really know a lot.	
		I feel very knowledgeable about food. (r).	

We tested the discriminant validity of scales by using principal component analysis (Campbell, 1998). The theoretically assumed four constructs were extracted with varimax rotation, so we evaluated the scales appropriate for the research. We also tested the inter-item reliability with the help of coefficients alphas, which showed acceptable values (between 0,691 and 0,892; see Tables 2.).

To verify our empirical model we applied structural equation modelling (SEM) with AMOS 18.0 software package. SEM is the extension of the general linear models (GLM), which can test multiple regression models in parallel. It is important to note that the direction of causal relationships is not tested statistically in this method, they reflect the assumptions of the researcher based on the conceptual foundations.

#### ***4.1. Testing the fitness of the SEM model***

In SEM there are several prerequisites to the analysis. According to Bentler and Chou (1987) in the frame of a SEM-analysis the minimum expected sampling size is the fifth as much as the number of parameters to be estimated. As the model we established has 29 parameters, therefore, the expected number of respondents is 150. We just managed to meet this requirement with our sampling size of 169.

Different fitting indexes have also been developed by the researchers for SEM-analysis. In table 3 we present the most widely used ones, their critical values and our empirically estimated ones of the tested model. The results show that the model fits fairly well.

Table 3. Critical and empirical estimated value of fit indexes

<b>Fit indexes</b>	<b>The critical value suggested by the literature</b>	<b>The empirical value in the current research</b>
<i>Absolute indexes</i>		
$\chi^2$ szignifikanciája	<b>&gt;0.05</b> (Wheaton et al., 1977)	0.120
$\chi^2$ /df	<b>≤ 5</b> (Wheaton et al., 1977)	1,241

<b>GFI</b> ( <i>goodness-of-fit index</i> )	<b>&gt; = 0.9</b> (Segars and Grover, 1993)	0,943
<b>AGFI</b> ( <i>adjusted goodness-of-fit index</i> )	<b>&gt; = 0.8</b> (Segars and Grover, 1993)	0,909
<i>Incremental/comparative fit indexes</i>		
<b>NFI</b> ( <i>normed fit index</i> )	<b>&gt; = 0.95</b> (En and Bentler, 1999)	0,929
<b>RESULT OF THE</b> ( <i>comparative fit index</i> )		0,985
<i>Residuum-based fit indexes</i>		
<b>SRMR</b> ( <i>standardised root mean square residual</i> )	<b>≤ 0.08</b> (En and Bentler, 1999)	0,056
<b>RMSEA</b> ( <i>Root Mean Square Error of Approximation</i> )	<b>&lt;0.06</b> (En and Bentler, 1999)	0.038
<i>Parsimony fit indexes</i>		
<b>PGFI</b> ( <i>parsimony goodness-of-fit index</i> )	<b>&gt; = 0.5</b> (Et Mulaik al., 1989)	0,592
<b>PCFI</b> ( <i>parsimony comparative fit index</i> )		0,731

## 5. Findings

After we determined that our model meets the fitting criteria we can turn to the interpretation of the estimated parameters. As it is presented in figure 2 and table 4, the standardized regression coefficients indicate a strong relationship between enduring involvement and the two assumed mediating variables, perceived risk ( $\beta = 0.53$ ) and knowledge ( $\beta = 0.57$ ).

In contrast to involvement, in case of behavioural loyalty we measured a weaker association with the mediating variables. Perceived risk and behavioural loyalty show a positive relationship but only a small part of the variance of the dependent construct was explained ( $\beta = 0.16$ ). Between perceived knowledge and behavioural loyalty we also measured a weak relationship but in addition to that, contrary to our hypothesis, this association proved to be negative ( $\beta = - 0.16$ ). We managed to reveal relatively stronger relationship between involvement and loyalty ( $\beta = 0.25$ ).

Figure 2. The research model and its estimated parameters

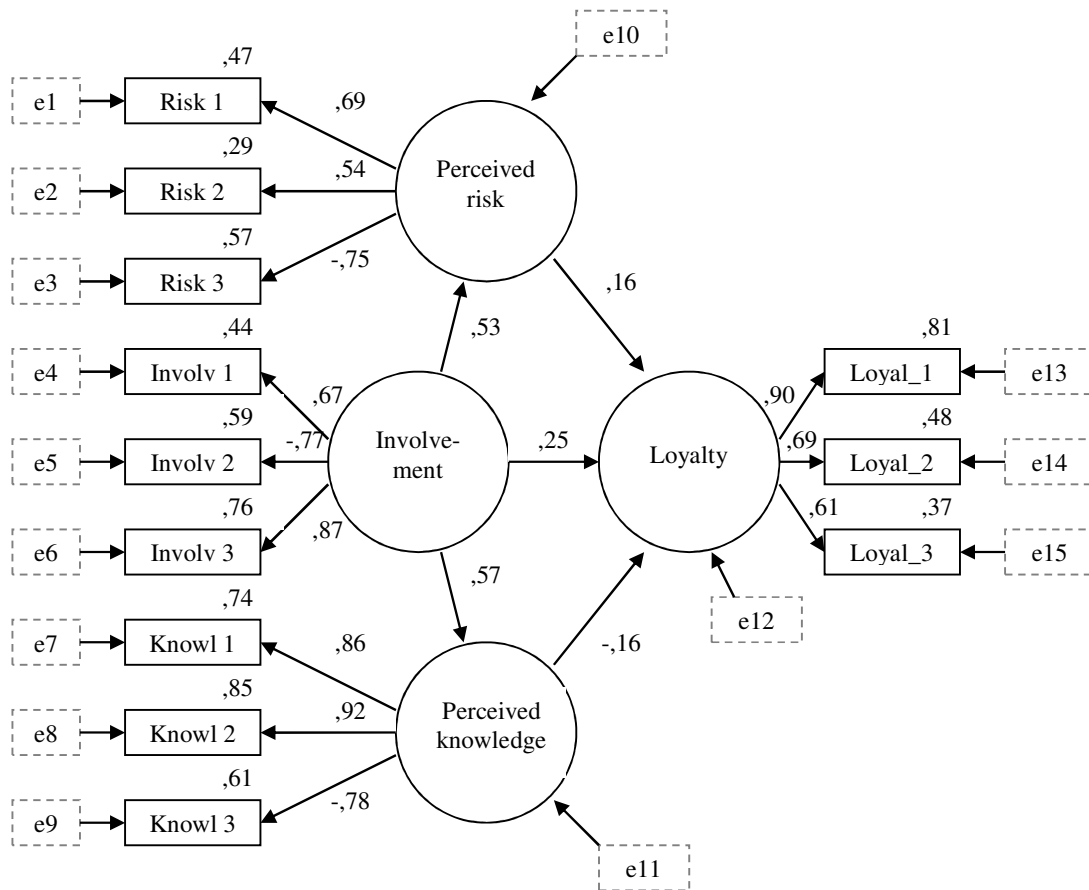


Table 4. Standardized regression coefficients

Predictive variable	Target variable	Standardized regression coefficients ( $\beta$ )
Involvement	Loyalty	0,25
Involvement	Perceived risk	0,53
Perceived risk	Loyalty	0,16
Involvement	Detected knowledge	0,57
Detected knowledge	Loyalty	-0,16

The unstandardized regression coefficients show the estimated difference in the dependent variable caused by a unit difference in the predictor. We can test if the value of these coefficients is unequal to zero, which verify significant association between the constructs. The results show that at a confidence level of 99%, enduring involvement has an effect on perceived risk and perceived knowledge but support the relationship with behavioural loyalty only at a confidence level of 90%. Note that the sampling size plays influential role in the statistical hypothesis testing, therefore, the results can be the reflection of our relatively small sampling size.

Table 5. Unstandardized regression coefficients and their significance level

Predictive variable	Target variable	Unstandardized regression coefficients (b)	Standard error of the coefficients	Significance level
Involvement	Loyalty	,259	,144	,073
Involvement	Perceived risk	,487	,105	,000
Perceived risk	Loyalty	,180	,140	,197
Involvement	Perceived knowledge	,649	,110	,000
Perceived knowledge	Loyalty	-,145	,101	,149

For the managerial implications it is crucial information that to what extent the target variables can be captured by the predictive ones in the model. We got the lowest value in case of loyalty, contrary to that this construct has the highest number of predictors. Enduring involvement, perceived risk and perceived knowledge explain only 9.4% of its variance ( $R^2=0.094$ ).

The role of mediating variables having only one predictor can be determined by the squared standardized coefficients estimated between them, according to which involvement explains 28.4% of variance of perceived risk and 32.4% of that of perceived knowledge.



Table 6. Hypotheses testing results

Hypothesis	Predictive variable	Target variable	Evaluation
(H) <sub>1</sub>	Involvement	Loyalty	Supported*
(H) <sub>2</sub>	Involvement	Perceived risk	Supported**
(H) <sub>3</sub>	Perceived risk	Loyalty	Rejected
(H) <sub>4</sub>	Involvement	Perceived knowledge	Supported**
(H) <sub>5</sub>	Perceived knowledge	Loyalty	Rejected

\* p = 0.1 level

\*\* p = 0.01 level

Based on the results, all the three hypotheses including involvement were supported, that is, enduring involvement has a positive effect on both loyalty (only at a confidence level of 90%) and the two supposed mediating concepts, perceived risk and perceived knowledge. Their mediating role was not supported since we did not find significant association between them and loyalty.

## 6. Discussion

The aim of our study was to elucidate the nature of the relationship between involvement and loyalty. To get deeper insight, we wanted to explore the role of potential mediating concepts. In our conceptual model we made effort to determine the subjective and relatively constant effects and relationships on the one hand, and measure general predictive constructs that can be interpreted to foods in general on the other hand. With the help of our empirical model we tried to achieve a better understanding of the decision-making mechanism in the buying process.

After testing our research model we can conclude that our objectives were partly accomplished. Among the five hypotheses only two were supported, one only by lower confidence, and the two remaining ones were rejected since the lack of identified statistically significant association.

With respect to results, involvement plays an important role in this context and explains notable proportions of the variance of the other construct included in the model. We managed to verify its indirect effect on behavioural loyalty, although, a weaker association was determined than expected. The relative constant perceived risk and perceived knowledge related to foods also well explained by enduring involvement. However, the mediating role of the two supposed concepts was not supported by our study, therefore, behavioural loyalty in general was not explained significantly by our conceptual model. All of this indicates the more complex nature of the decision-making mechanism of customers and suggests further, explorative research directions towards the subfield of the buying process related to food products. Nevertheless, we believe that the study above contributes to the research area and provide useful inputs for other research projects.

## **7. Limitations**

Some important limitations of this study must be emphasized. First, the sample we drew is a special one including only university students, whose food related consumption and buying behaviour can be distinct. They can apply different heuristics than the whole population. Second, the sampling size was relatively small and, although it met the minimum requirements in them SEM-analysis, it could mainly influence the results of hypothesis-tests. Third, the investigation took food categories into account as a whole assuming similar patterns in each decision-making process. This, however, can be diverse across product categories and from this point of view we measured average effects. Beside the limitations above the results cannot be generalised to other product groups due to the special characteristics of the food products albeit it was not the aim of the research this time.

## **8. Further research**

As mentioned during the discussion, the results indicate the need for a further explorative study in this field to reveal other potential mediating and/or moderating concepts and special chain of effects. After this phase can be evaluated that despite the additional concepts the research model remain coherent or it is necessary to focus on some parts of it.

An issue that is worthy of investigation is how the explanatory power of the model can change if one focuses the measurement on specific product categories instead of all of them as

a whole. It can reveal additional, category-specific factors that can influence the strength of associations within the model.

The literature pays lower attention to the dynamics of the concepts included in the model. The intensity of involvement can change, as perceived knowledge and risk as well. The interaction between them in time can hide interesting effects that can be worth exploring, too.

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