

## Impact of Certain Sales Promotion Tools on Consumers' Impulse Buying Behavior

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### Abstract:

The manuscript investigates the impact of the observed sales promotion tools on the consumers' impulse buying behavior. Beside the theoretical analysis of sales promotion and impulsive consumer behavior, the authors try to determine which of the observed sales promotion tools is most effective in encouraging consumers to perform impulsive purchases. Analysis of collected data is done with the help of three statistical-econometric methods: factor analysis, regression analysis and reliability analysis. According to the results of researches carried out, discounts are the tool by which consumers are most motivated to pursue impulsive purchases. Also, free samples and demonstrations and product rehearsals are very effective, while loyalty cards are the most ineffective. Thanks to these research results, this manuscript will have a contribution both for marketers and brand managers (companies), as well as consumers and future researches on this or similar topic.

**Keywords:** sales promotion tools; consumers' impulse buying behavior.

**JEL Classification:** M21; M31.

### Introduction

Although purchases of products and services are largely planned consumer actions, unplanned (impulsive) purchases are also frequent. These are the purchases that consumers do not specifically plan before entering the store, or in advance, but make the spur of the moment (Yin and Jin-Song 2014, Solomon 2017). Due to exposure to a particular stimulus, consumers can make quick purchases of those products that they believe represent a good deal. Also, such purchases affect consumers' emotions and feelings after performing the same (Piron 1991, Parboteeah 2005, Virvilaite, Saladiene and Bagdonaite 2009, Verma and Verma 2012, Yin and Jin-Song 2014, Solomon 2017). Therefore, many companies and their marketing departments make great efforts to influence consumers to make impulsive (unplanned) purchases.

There are many definitions of sales promotion in the literature. However, the most comprehensive definition is the one by which sales promotion encompasses a range of incentives, *i.e.* methods (mostly short-term) designed to encourage faster or greater purchase of certain products by consumers (Blattberg and Neslin 1990, Laroche, Pons, Zgolli, Cervellon and Kim 2003, Oyedapo, Akinlabi and Sufian 2012). Sales promotion can be directed to different participants in the distribution channel, *i.e.* towards consumers, business customers, and sales staff (Egan 2007, Kotler and Keller 2006, Percy 2008, Shimp 2007). However, in this paper, the focus will be on those sales promotion methods used by companies to encourage consumers to make impulsive purchases.

### 1. Literature review

Consumer-oriented sales promotion refers to incentives offered directly to the consumers of a particular company or its potential consumers with the intention of speeding up their decision-making process to buy products of a company rather than competitors (Kotler and Armstrong 1994, Moriarty, Mitchell and Wells 2012, Palmer 2004, Percy 2008). These are various short-term promotional methods that add value to products (either by reducing

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costs or adding benefits) and thus provide an unequivocal incentive to buy them (Srinivasan and Anderson 1998; Du Plessis, Bothma, Jordaan and Van Heerden 2010). More specifically, these methods are used to stimulate specific responses in consumer behavior, such as (Shi, Cheung and Prendergast 2005):

- brand change (procurement of competing products);
- inventory creation (purchase of a larger quantity of products than planned);
- speeding up purchases (pre-planned procurement);
- a trial of those products that have not been purchased so far;
- spending more money than planned.

Some of the most important consumer promotion methods that have also served as variables in research presented by this paper are: discounts, free samples, bonus packs, premiums, loyalty programs, rewards, coupons and product demonstrations and rehearsals. There is a quantum of research in the literature that has examined the impact of sales promotion methods on impulsive consumer behavior. It is important to note that almost all have come to the conclusion that most of the observed methods (if not all) have a given influence, expressed to a greater or lesser extent. Thus, for example, according to the results of some recent research (Osman, Fah and Foon 2011, Tinne 2011, Banerjee and Saha 2012, Rittipant, Kheawwilai, Suaingam, Promsoot and Vivatanaprasert 2013, Nagadeepa, Selvi and Pushpa 2015), discounts are the method that most motivates consumers to make impulsive purchases. The reason for this is certainly the consumer's desire for savings. In particular, discounts provide the buyer with a temporary reduction in price and thus immediate value, and therefore represent an unequivocal incentive to buy (Jobber and Fahy 2006). Others include bonus packs, loyalty cards, free samples, coupons and rewards, whose impact strengths vary depending on the research. According to Osman *et al.* (2011) discounts and free samples are the most significant methods that influence impulsive consumer behavior, while according to Tinne (2011) these are discounts and bonus packs. The results of the Tinne's study were also confirmed by Rittipant *et al.* (2013), stating that discounts, followed by bonus packs, loyalty cards, and coupons, have the greatest impact, with the least impact. On the other hand, Nagadeepa *et al.* (2015) found that discounts and loyalty cards are those methods that have a significant effect on encouraging consumers to go shopping ahead of schedule, whereas this cannot be said for coupons, rewards and bonus packs. Results of research done by Kelemen and Kemeny (2019) show that special events' shoppers could be segmented and these segments could assist retailers to find distinct shopper groups.

In accordance with the theoretical review and the results of previous research, the paper defines three hypotheses, which will be proven (tested):

H1: There is a statistically significant effect of sales promotion methods on impulsive consumer behavior;

H2: Discounts are a sales promotion method that has the greatest impact on impulsive consumer behavior;

H3: Overall, the methods that have the most effect are those that create value for the consumer or save money.

## 2. Methodology

### 2.1. Data collection and sample description

The survey was conducted during 2018 in the largest cities of the five regions of Serbia, which are usually taken in marketing and other segmentations (Eastern, Western and Southern Serbia, and Vojvodina and Sumadija-Central Serbia). A directed random sample was used to collect the data required for the survey. It was composed of respondents of different demographic profiles who were contacted on site, *i.e.* in front of three supermarket chains (Dis, Maxi and Idea), in which some of the mentioned sales promotion methods were used during that period. Based on the consent of the respondents to participate in the survey and the received e-mail addresses, the web address of the survey was sent and the respondents filled it via the Internet. This method was chosen because the respondents did not have enough time to answer all questions in direct contact, and also because this approach resulted in more precise answers that were later easier to compare. The study was conducted on a sample of 376 elementary units. Of these, 37.8% were male and 62.2% were female; the age of the respondents ranged from 20 to 84 years. Viewed by region, most respondents were from Sumadija and Western Serbia (58.5%), followed by Belgrade (19.4%), Vojvodina (12.5%), South and Eastern Serbia (8.2%) and lastly Kosovo and Metohija (1.3%). Out of the total number of respondents, 51.6% of them stated that they make purchases in supermarkets once a week, 24.2% of respondents make it daily, 11.4% of them once every two weeks, 7.4% once a month, 2.9% less than once a month, with the rest doing it once every three weeks.

## 2.2. Methods

When referring to the measuring instrument, the survey questionnaire (in the second and third part) contained precisely defined statements regarding:

- certain answers in the behavior of the respondents (change of brand, making inventories, speeding up purchases, trying out those products that have not been bought so far and spending more money than planned) that each of the observed methods (discounts, bonus packages, free samples, coupons, premiums), awards, loyalty programs and product demonstrations and rehearsals) creates;
- impulsive consumer behavior (Table 1).

Table 1. Observations regarding impulsive consumer behavior

Impulsive consumer behavior
I often buy products spontaneously, without thinking
If I see something I think I need, I'll buy it even though I went shopping for other things
I buy products the way I feel at the moment
I'm going shopping to improve my mood
I feel excited when I do impulsive shopping
I find it hard to control myself from buying, especially when I see a good deal
If I see a good deal, I tend to buy more than originally planned

Source: Authors

Respondents expressed the degree of their agreement with the definite findings on a five-point Likert scale (1 - disagree at all, 2 - disagree, 3 - partially agree, 4 - agree and 5 - completely agree). The aforementioned findings were selected based on a review of relevant literature in the field of sales promotion and consumer behavior, or factors that affect them (Gilbert and Jackaria 2002, Shi *et al.* 2005, Osman *et al.* 2011, Tinne 2011, Banerjee and Saha 2012, Rittipant *et al.* 2013, Ashraf, Rizwan, Iqbal and Khan 2014, Obeid 2014).

All data collected were stored in the SPSS (Statistical Package for Social Science, version 20.0) database. The same program was later used to analyze the statistics provided.

In order to determine the impact of the observed sales promotion methods on impulsive consumer behavior, regression analysis was used as one of the methods of predictive analysis. However, factor analysis was first conducted, which is one of the most popular multivariate techniques and is used to investigate the links between different traits, *i.e.* for reducing a large set of variables or scale items to a smaller number of dimensions or factors, which are easier to work with (Pallant 2011). After the obtained results of factor analysis, the mentioned regression analysis was conducted in order to show whether there is an influence of the obtained factors on the variable impulsive behavior of consumers. Also, it is important to emphasize that the reliability analysis was also used to measure the level of reliability of the obtained factors and internal agreement of the findings by Kronbach's alpha coefficient. To determine statistical significance, a 95% confidence interval, that is, a risk factor  $\alpha = 0.05$ , was used.

## 3. Results of the research

Prior to the actual implementation of factor analysis, the values of the KMO test (KMO = 0.901) and the Bartlett test ( $p = 0.000$ ) confirmed that conditions for its application were justified (Table 1 in Annex). KMO index values can range from 0 to 1, and using factor analysis is inadequate if KMO values are below 0.5. Bartlett's test is based on hi-square statistics. The obtained value shows that the null hypothesis (no significant correlation between the variables) is rejected. The principal component analysis was used as a method of factor analysis in this study, which considers the total variance in the data. The diagonal of the correlation matrix contains units and the total variance is entered into the factor matrix. To determine the number of factors in this paper, two criteria were used, the first based on characteristic values and the second on the Scree Plot diagram. In the first case, we are only interested in those factors whose characteristic value is 1 or more (Kaiser's criterion), while in the second, only those factors above the crossing point are retained. The results of the application of both criteria are presented in the appendix. For the sake of clearer interpretation of the factors, Varimax method was used as one of the most commonly used orthogonal rotations. It minimizes the number of variables with high absolute values of factor loadings and provides factors that are not correlated (Pallant 2011).

The results of the factor analysis (presented in the following table) show that the findings clustered around the nine formed factors. The first "reward" factor explains 32.899% of the variance. This factor captures all five awards related statements. The second "free samples" factor, which includes all five statements regarding free samples, explains 9,640% of the variance. The third "loyalty card" factor describes 6.796% of the variance and

includes all the findings regarding loyalty cards. The fourth factor of “demonstrations and product rehearsal” refers to all findings regarding product rehearsal and explains 5.929% of variance. The fifth “coupons” factor explains 5.627% of the variance and includes all five coupons findings. The sixth factor of “premiums” concerns the findings regarding premiums. This factor describes 4.641% of the variance. The seventh “discount” factor explains 3.994% of the variance and refers to the findings regarding discounts. The eighth “bonus pack” factor captures the findings regarding the bonus pack and describes 3.509% of the variance. Finally, the ninth factor “changing the brand and product rehearsal” explains 2.955% of the variance and refers to those findings regarding bonus packages, discounts and premiums. Otherwise, all nine factors describe 76.030% of the total variance. On the basis of all of the above, it can be concluded that the theoretical basis of the questionnaire was almost completely confirmed.

The next step is a reliability analysis. According to the results obtained, all nine factors have a high level of reliability. As can be seen from Table 2, alpha coefficients are higher than the minimum confidence threshold of 0.7 recommended by Nunnally (1978). Since high values of the alpha coefficients were obtained (more than 0.8 for all factors except for the seventh one), it can be concluded that there is an internal agreement between the findings grouped around each individual factor. This justified the use of the above statements.

Table 2. Results of exploratory factor analysis

Statements	Factors								
	1.	2.	3.	4.	5.	6.	7.	8.	9.
<b>Factor 1. Rewards</b>									
Speeding up your shopping	0.843								
Spending more money	0.840								
Making stock	0.826								
Brand change	0.823								
Product rehearsal	0.809								
<b>Factor 2. Free samples</b>									
Speeding up your shopping		0.844							
Spending more money		0.804							
Making stock		0.802							
Changing the brand		0.796							
Product rehearsal		0.715							
<b>Factor 3. Loyalty cards</b>									
Making stock			0.850						
Speeding up your shopping			0.824						
Spending more money			0.805						
Changing the brand			0.760						
Product rehearsal			0.738						
<b>Factor 4. Demonstrations and product rehearsal</b>									
Changing the brand				0.852					
Speeding up your shopping				0.816					
Spending more money				0.814					
Product rehearsal				0.794					
Making stock				0.778					
<b>Factor 5. Coupons</b>									
Speeding up your shopping					0.859				
Changing the brand					0.826				
Making stock					0.802				
Spending more money					0.789				
Product rehearsal					0.780				
<b>Factor 6. Premiums</b>									
Making stock						0.827			
Speeding up your shopping						0.803			
Changing the brand						0.747			
Product rehearsal						0.719			
Spending more money						0.701			
<b>Factor 7. Discounts</b>									
Speeding up your shopping							0.809		
Spending more money							0.728		

Statements	Factors								
	1.	2.	3.	4.	5.	6.	7.	8.	9.
Making stock							0.683		
Product rehearsal							0.526		
Changing the brand							0.498		
<b>Factor 8. Bonus packages</b>									
Making stock								0.755	
Spending more money								0.737	
Speeding up your shopping								0.696	
Changing the brand								0.341	
Product rehearsal								0.344	
<b>Factor 9. Changing the brand and product rehearsal</b>									
Changing the brand (bonus packs)									0.708
Product rehearsal (bonus packs)									0.641
Changing the brand (discounts)									0.555
Product rehearsal (Discounts)									0.516
Changing the brand (premiums)									0.322
Product rehearsal (Premiums)									0.322
Eigenvalue	13.160	3.856	2.718	2.371	2.251	1.856	1.598	1.404	1.198
Percentage of variance described	32.899	9.640	6.796	5.929	5.627	4.641	3.994	3.509	2.995
Alfa	0.983	0.916	0.932	0.902	0.918	0.908	0.793	0.817	0.825

Source: Authors

Following the results of the factor analysis, a regression analysis was conducted to show whether there is an influence of the nine factors (factor scores - independent variables) on the dependent variable (impulsive consumer behavior). It is important to note that the dependent variable is created by calculating the total scores on the scale for each subject (respondent). More specifically, the total scores for each respondent on this scale consisted of the sum of scores for each item (constant) that related to impulsive consumer behavior (Table 1).

However, in order to perform the regression analysis, it was first verified that the assumptions about sample size, normality, linearity, multicollinearity, and homogeneity of variance were met. Tabachnick and Fidell (2007) provide a sample size calculation formula that considers the number of independent variables:  $N > 50 + 8m$  (where  $m$  = number of independent variables). As in this paper,  $m = 9$  and the total sample size  $n = 376$ , it can be concluded that the sample size assumption is satisfied. Also, the analysis showed that the remaining assumptions were not violated and it was justified to carry out the regression analysis (Charts 2 and 3 in the appendix).<sup>2</sup> In specific, the problem of multicollinearity was tested through a variance inflation factor (VIF). Since the VIF values for each factor were less than 10, which also represents the intersection point for determining the presence of multicollinearity, therefore it can be concluded that the same does not exist between the observed variables<sup>3</sup>.

The coefficient of determination of  $R^2$  is 0.105, which shows that 10.5% of the variability of the dependent variable explains the nine factors obtained (Table 3 in the annex). Based on Snedekor's F random variable ( $F=4.772$ ) and realized level of significance ( $p = 0.000$ ), we can conclude that there is a mean, statistically significant regression of the influence of observed factors on impulsive consumer behavior (Table 4 in the appendix). This is also confirmed by Table 3, which presents the values of non-standardized coefficients B, standardized coefficients  $\beta$ , t-statistics and realized significance levels (column Sig.). Looking at column  $\beta$  we can see that the highest value of this coefficient (0.183) is recorded for the seventh factor (discounts). This means that this factor (variable) individually contributes most to explaining the dependent variable, when subtracting the variance explained by all

<sup>2</sup> In the Normal Probability Plot (P-P) diagram of the Regression Standardized Residual it can be seen that the points lie in approximately a straight diagonal line from the lower left to the upper right corner of the diagram. It indicates that there are no major deviations from normality. In the scatterplot diagram of standardized Scatterplot residuals, it can be seen that the residuals are approximately rectangular distributed and that most of the results are accumulated in the center (around point 0). This concludes that there is no deviation from the shape of the central rectangle, which means that some of the starting assumptions are not violated. In other words, the residuals are normally distributed around the predicted values of the dependent variable, thus fulfilling the assumption of normality. Also, residuals have a linear relationship with the predicted values of the dependent variable, *i.e.* their diagram is approximately a straight line. Thus the assumption of linearity is fulfilled. Among other things, the residual variance around the predicted values of the dependent variable is approximately the same for all predicted values, thus also assuming the variance homogeneity is also fulfilled.

<sup>3</sup> Validation of the multicollinear assumption was performed according to: Pallant, J. (2011), SPSS priručnik za preživljavanje (prevod 4. izdanja), Beograd: Mikro knjiga.

other factors (variables) in the model. The values of the coefficients  $\beta$  for the second and fourth factors are less than 0.183, and therefore their contribution is smaller. It is important to note that of the nine, as many as six factors (first, third, fifth, sixth, eighth and ninth) did not have a statistically significant effect on impulsive consumer behavior ( $p > 0.05$ ). Certainly, loyalty cards are at the top ( $p = 0.983$ ). For all others, their statistically significant effect on the dependent variable was confirmed. The highest impact was recorded for the seventh factor ( $p = 0.000$ ). Second ( $p = 0.001$ ) and fourth ( $p = 0.003$ ) follow. This (partially) confirmed the first defined hypothesis in manuscript (H1).

Table 3. Results of the regression analysis (dependent variable: impulsive consumer behavior)

Variable	B	$\beta$	t	Sig.
Factor 1. Rewards	0.370	0.056	1.126	0.261
Factor 2. Free samples	1.099	0.166	3.348	0.001**
Factor 3. Loyalty cards	-0.007	-0.001	-0.021	0.983
Factor 4. Demonstrations and product rehearsal	0.996	0.150	3.033	0.003**
Factor 5. Coupons	0.264	0.040	0.804	0.422
Factor 6. Premiums	0.355	0.054	1.082	0.280
Factor 7. Discounts	1.218	0.183	3.709	0.000**
Factor 8. Bonus packs	0.644	0.097	1.960	0.051
Factor 9. Changing the brand and Product rehearsal	0.446	0.067	1.359	0.175

Notes:  $p < 0.01$  (\*\*),  $p < 0.05$  (\*);  $R^2 = 0.105$ ;  $F = 4,772$  \*\*

Source: Authors

The results obtained are broadly similar to the results of previous research on the same topic (Osman *et al.* 2011, Tinne 2011, Banerjee and Saha 2012, Rittipant *et al.* 2013, Nagadeepa *et al.* 2015). According to this and all of the previously conducted research, discounts are the method of sales promotion that motivates consumers the most for impulsive, *i.e.* unplanned purchases. Thus, the second defined hypothesis in manuscript (H2) is confirmed. Also, free samples and demonstrations and product rehearsals play a significant role and stand out from other variables, thus also confirming the third hypothesis (H3). This is almost certainly conditioned by the poor material condition of the average consumer, *i.e.* high share of consumer basket in individual or family income, which the authors plan to confirm in the next survey.

## Conclusion

In order to investigate the influence of sales promotion methods on impulsive consumer behavior, a large set of variables was reduced to a smaller number of factors in order to show whether there was an influence of these isolated factors on the dependent variable impulsive consumer behavior. The factor analysis showed that the findings from the survey were grouped around nine separate factors that together describe 76.030% of the total variance. Among them, the factor that contributes most to explaining variance is rewards (32.899%). On the other hand, the least contributing factor is changing the brand and product rehearsal (2.649%). It refers to those statements regarding bonus packages, discounts and premiums. Also, the reliability analysis showed that all the factors have a high level of reliability, which justifies their use for further research on this topic. Based on the conducted regression analysis, it was concluded that there is a statistically significant influence of certain methods of sales promotion, *i.e.* factors, to impulsive consumer behavior. Therefore, the first defined hypothesis is partially confirmed. The factor that contributes most to explaining the dependent variable, when subtracting the variance explained by all other factors (variables) in the model, is discounts. Second in importance are free samples and the third is demonstrations and product rehearsal. This also confirmed the second and third hypotheses. On the other hand, all other factors have been shown to have no significant effect on impulsive consumer behavior, which is a surprise. Certainly, loyalty cards come first. They are the least contributing factor in explaining the dependent variable. The results obtained are broadly similar to the results of previous research on the same topic (Osman *et al.* 2011, Tinne 2011, Banerjee and Saha 2012, Rittipant *et al.* 2013, Nagadeepa *et al.* 2015). The reason for this claim lies in the fact that these sales promotion methods are relatively easy to understand and, on the basis of them, consumers can clearly assess the benefits they receive from a purchase. This also confirms the results of the research conducted so far (Gilbert and Jackaria 2002, Shi *et al.* 2005, Osman *et al.* 2011, Obeid 2014).

In addition to the fact that the results of the study coincide with the mentioned studies conducted in this and the previous decade, certain differences and variations exist both in the mutual conclusions of the mentioned studies and in comparison with this study. The authors assume that these differences are due to market diversities as well as cultural differences between different countries. Therefore, the authors propose and plan to conduct

research that would pair this type of research with Hofstede's extended theory of cultural dimension (Hofstede, Hofstede and Minkov 2010), in order to create the model in relation to different countries in one region (former Southeast Europe) or the continent.

This study has limitations due to the fact that the sample is not representative, but despite them, the results provide an empirical framework as a reference for further research and may also be useful for selling and managing brands of different orientations.

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## APPENDIX

Table 1. Results of verification of the validity of the factor analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		901
Bartlett's Test of Sphericity	Approx. Chi-Square	12184.120
	Df	780
	Sig.	.000

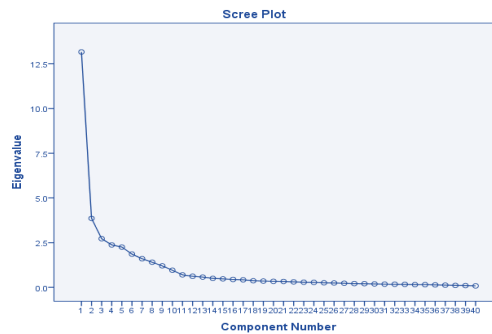
Table 2. Determining the number of factors using criteria based on eigenvalues

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of variance	Cumulative %
1	13.160	32.899	32.899	13.160	32.899	32.899	4.129	10.323	10.323
2	3.856	9.640	42.539	3.856	9.640	42.539	3.934	9.835	20.158
3	2.718	6.796	49.335	2.718	6.796	49.335	3.907	9.767	29.925
4	2.371	5.929	55.264	2.371	5.929	55.264	3.881	9.704	39.629
5	2.251	5.627	60.891	2.251	5.627	60.891	3.859	9.647	49.276
6	1.856	4.641	65.532	1.856	4.641	65.532	3.517	8.793	58.069
7	1.598	3.994	69.526	1.598	3.994	69.526	2.542	6.356	64.425
8	1.404	3.509	73.035	1.404	3.509	73.035	2.328	5.821	70.246
9	1.198	2.995	76.030	1.198	2.995	76.030	2.314	5.785	76.030
10	.954	2.385	78.415						
11	.695	1.738	80.153						
12	.617	1.544	81.697						
13	.572	1.430	83.127						
14	.501	1.253	84.380						
15	.471	1.179	85.559						
16	.441	1.102	86.661						
17	.418	1.044	87.705						
18	.367	.916	88.621						
19	.349	.874	89.495						
20	.334	.836	90.331						
21	.328	.820	91.150						
22	.303	.758	91.908						
23	.286	.715	92.623						
24	.275	.687	93.310						
25	.251	.628	93.938						
26	.241	.602	94.540						
27	.229	.572	95.111						
28	.208	.519	95.630						
29	.202	.506	96.136						
30	.188	.470	96.606						
31	.177	.443	97.049						
32	.172	.430	97.479						
33	.166	.415	97.895						
34	.149	.373	98.268						
35	.148	.371	98.639						

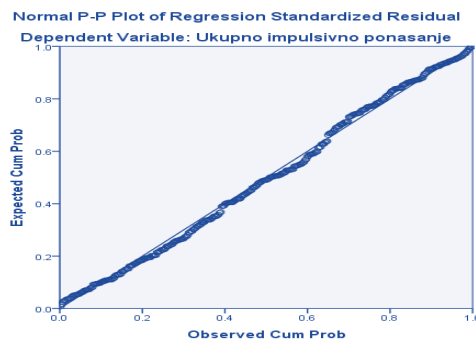
Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of variance	Cumulative %
36	.137	.343	98.982						
37	.123	.307	99.289						
38	.106	.266	99.554						
39	.097	.242	99.796						
40	.082	.204	100.000						

Extraction Method: Principal Component Analysis

Graph 1. Determining the number of factors using criteria based on the Scree Plot diagram



Graph 2. First diagram for checking the assumptions on which the regression analysis is based



Graph 3. Second diagram for checking the assumptions on which the regression analysis is based

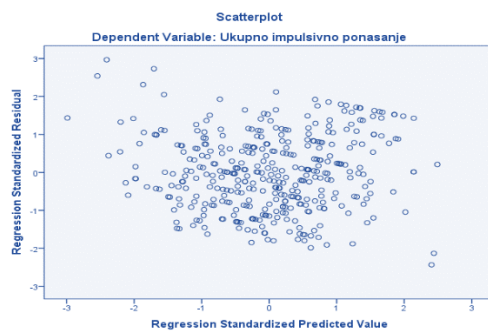


Table 3. Basic results of regression analysis (coefficient of determination, etc.)

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.324 <sup>a</sup>	.105	.083	6.359	1.121

Note: a. Predictors: (Constant), REGR factor score 9 for analysis 1, REGR factor score 8 for analysis 1, REGR factor score 7 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1; b. Dependent Variable: Total impulsive behavior

Table 4. Baseline regression analysis results (Snedekor's random variable and realized significance level)

ANOVA						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,736.708	9	192.968	4.772	.000 <sup>b</sup>
	Residual	14,801.504	366	40.441		
	Total	16,538.213	375			

Note: a. Dependent Variable: Total impulsive behavior; b. Predictors: (Constant), REGR factor score 9 for analysis 1, REGR factor score 8 for analysis 1, REGR factor score 7 for analysis 1, REGR factor score 6 for analysis 1, REGR factor score 5 for analysis 1, REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1.