

Factors affecting users' satisfaction with online group buying: A social exchange theory approach

Pavlna PAWLASOVÁ*

Department of Marketing and Business, Faculty of Economics, VŠB-Technical University of Ostrava, Sokolská tř. 33, 701 21 Ostrava, Czech Republic.

Abstract

The topic of this paper is a comparison of the factors that affect users' satisfaction with online group buying. Social exchange theory was used to identify these factors. Reciprocity, reputation and trust, proposed by social exchange theory, along with the vendor's creativity and customers' satisfaction with the purchase can be included among these factors. The aim of this paper is to identify the factors affecting customers' satisfaction with online group buying and to find the optimal factor model in the conditions of the Czech Republic. The methods of factor analysis and structural equation modelling are used. The optimal model for the Czech conditions is found. The results confirm that trust, including trust in online group buying vendors and their trustworthy impression, the vendor's creativity, including new ways to meet consumer demands, new approaches to selling products and new ideas about how to promote products, and customers' pleasure and contentment are the most important factors for Czech customers.

Keywords

Factor analysis, online group buying, satisfaction, social exchange theory, structural equation modelling.

JEL Classification: M31, M37

* pavlina.pawlasova@vsb.cz

This paper was created within the project *SGS Buying Behaviour of Generation Y in International Context*, project registration number SP2015/118, and was supported within the Operational Programme Education for Competitiveness – Project No. CZ.1.07/2.3.00/20.0296.

Factors affecting users' satisfaction with online group buying: A social exchange theory approach

Pavčina PAWLASOVÁ

1. Introduction

Online group buying became popular all over the world in 2008 and nowadays the online group buying market is growing at a fast rate globally (Erdogmus and Cicek, 2011). Group buying refers to social or collective shopping whereby goods and services can be purchased at significantly reduced prices when enough buyers participate in the purchase. The transaction can proceed only when the required number of buyers is reached (Shiau and Luo, 2012). Customers can buy goods, adventure events, gastronomy, services, such as wellness, hair styling, massages and so on, or holidays in online group buying auctions (Michl, 2013). Online group buying is a new phenomenon that takes advantage of both online marketing and social media influence (Erdogmus and Cicek, 2011).

When Czech people want to buy something at a discount, online group buying auctions are the third most common place for them to look. The most usual places are leaflets and seasonal sales in shops (Michl, 2013).

The first online group buying auctions in the Czech Republic were launched in 2008/2009. The biggest increase in this method of purchasing occurred in 2010 and 2011. There are about 40 providers of online group buying auctions nowadays in the Czech Republic.

Therefore, vendors should try to achieve the maximum user satisfaction with purchases. A high consumer satisfaction rate contributes significantly to consumer loyalty to the service provider, and consumer satisfaction helps companies to establish long-term relationships with consumers (Shiau and Luo, 2012; Zamazalová, 2009). Additionally, the success of an online group buying vendor depends on the number of customers that the system is able to attract and retain. Therefore, the quality of service and purchase satisfaction become issues of maximum importance (de Oña et al., 2013).

It was found by Shiau and Luo (2012) that social exchange theory (SET) can be used to identify the factors that affect users' satisfaction with online and offline buying. However, it was found by Pawlasová (2014) that Shiau and Luo's (2012) proposed model is not optimal in the conditions of the Czech Republic and there are some possibilities for model improvement.

This article extends the original paper by Pawlasová (2014); the suggestions mentioned are applied and the optimal model is evaluated in this paper. The excluded variables are described later. Figure 3 in the Appendix presents the original proposed model with the factors that were excluded.

The aim of this paper is to identify the factors affecting customer satisfaction with online group buying and to find the optimal factor model in the conditions of the Czech Republic.

The article contains the theoretical background of satisfaction measurement and social exchange theory. The subsequent practical part of the article contains the research methodology and an introduction to the methods of factor analysis, which are used to categorize variables according to their mutual relations, as well as structural equation modelling (SEM), which is used to evaluate the proposed model in the Czech conditions and find the optimal model with the most significant factors. Finally, the results are described and the evaluation of the proposed model is presented. This paper also includes a discussion of the results and a conclusion.

2. Theoretical background of users' satisfaction measurement and social exchange theory

Marketing research uses satisfaction to measure customer satisfaction after a purchase. Research has stressed the differences between consumer expectations and actual satisfaction. Satisfaction has a significant influence on purchase intentions (Shiau and Luo, 2012).

Satisfaction can be influenced by the service quality. The service quality consists of many attributes affecting satisfaction with online group buying. If the service quality is measured from the customers' perspective, the most important aspect is the users' perceptions of each attribute characterising the service. It is not only important to know the perceptions about the factors of quality; the most important point is to identify which

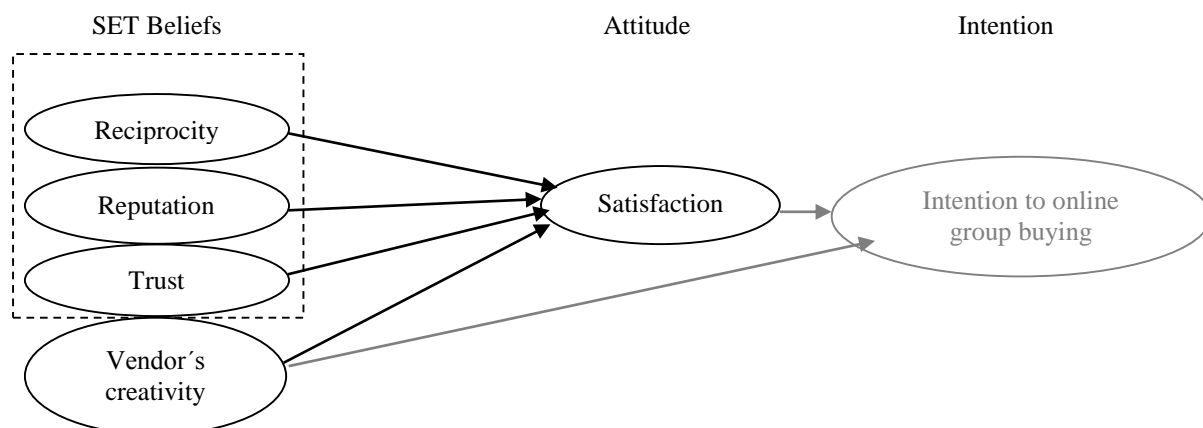


Figure 1 Proposed model by Shiau and Luo (2012)

factors have the greatest influence on the global assessment of the service.

Nowadays, asking customers to state the importance of each service attribute is a frequently used method, but it can lead to erroneous estimation, because some factors can be rated as important even though they have little influence on overall satisfaction or they are important only in one of the moments of the assessment (before or after thinking) (de Oña et al., 2012; 2013). Therefore, it is recommended to apply one of the derived methods that determine the importance of the attribute by statistically testing the strength of the relation of individual factors with overall satisfaction (Weinstein, 2000).

In the study by Shiau and Luo (2012), structural equation modelling was applied to measure customers' satisfaction with online group buying. It was found that social exchange theory, originating in the 1950s, based on psychology, initially developed to analyse human behaviour and later applied to understand organizational behaviour, can be used to determine the factors that influence online group buying users' satisfaction.

This study applies social exchange theory to explore the factors related to customer psychology and relation exchange. The factors that are included in social exchange theory were identified as critical factors affecting both online and physical shopping. Social exchange theory has been adopted in social networking research and across different areas, such as sales performance or adoption decisions. The psychological and consumer behaviours are important for marketers seeking to increase customer satisfaction, loyalty and sales rates (Shiau and Luo, 2012).

Social exchange theory states that people and organizations interact to minimize their costs and maximize their rewards. According to SET, individuals typically expect reciprocal benefits (namely personal affection, trust and gratitude) and economic returns when

they act according to social norms. This approach primarily presents only an egoistic perspective based on the economic and social exchange theories, which states that human behaviour is influenced by the expected economic rewards. Altruistic motives are omitted from this study. However, no intention to improve the welfare of other buyers and no expectation of personal returns exist in online group buying (Shiau and Luo, 2012).

Reciprocity, reputation and trust can be involved between the factors influencing online users' satisfaction according to social exchange theory in the case of group buying. We can also include the vendor's creativity and factors of satisfaction such as pleasure, contentment and delight. Satisfaction, trust and the vendor's creativity influence buyers' intention to engage in online group buying (Shiau and Luo, 2012). The validated part of the model in this paper is black; the invalidated part is grey. See Figure 1.

Reciprocity can be interpreted as quid pro quo behaviour. *Reputation* is derived from the degree to which a person believes that social interaction potentially enhances personal reputation. *Trust* is frequently defined as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action that is important to the trustor, irrespective of the ability to monitor or control that other party. *Creativity* refers to the Latin word *creatus*. Creative products are often characterized by novelty and appropriateness; otherwise, we can consider them as general products. Creative products should also have a competitive advantage (Shiau and Luo, 2012).

3. Research methodology

The purpose of this research was to identify the factors influencing buyers' satisfaction with online group buy-

ing in the Czech Republic. The factors of SET, supplemented with the vendor's creativity and satisfaction, were used.

The data were obtained in online questionnaire research in August 2013. This method was chosen because of its connection with the research concern. The population was all online group buying auction users, meaning everyone who has ever bought at this auction. The sample consisted of 115 respondents; the structure of the sample was equal to the structure of the online group buying auction consumers. The respondents expressed their attitudes and opinions regarding the statements on a Likert scale of 1 to 5, on which 1 corresponded to a positive statement and 5 corresponded to a negative statement.

A factor analysis following the varimax method was used to categorize the variables according to their mutual relations and to confirm the validity of the proposed groups of factors. Structural equation modelling (SEM) was used to evaluate the proposed model in the Czech conditions and find the optimal model with the most significant factors.

3.1 Factor analysis

The factor analysis uses basic statistical methods: multiple regression and partial correlation. Multiple regression is a method of statistical explanation of the first type, when part of the variance of one variable is explained by regression. It explains the variance of one variable by its relation to other variables. The partial derivative represents the statistical explanation of the second type, when the entire correlation of two variables is explained by their mutual correlation with another variable. It is an attempt to explain the correlation between two variables by their mutual covariance with the third variable. It means that the mutual relation of variables is explained by their relation to another variable (McDonald et al., 1990).

The factor analysis was conducted using the varimax method, which was developed by Kaiser in 1958 and nowadays is indubitably the most popular rotation method by far. Abdi (2003) claims that *for varimax a simple solution means that each factor has a small number of large loadings and a large number of zero (or small) loadings. This simplifies the interpretation because, after a varimax rotation, each original variable tends to be associated with one (or a small number) of factors, and each factor represents only a small number of variables. In addition, the factors can often be interpreted from the opposition of few variables with positive loadings to few variables with negative loadings. Formally, varimax searches for a rotation (i.e., a linear combination) of the original factors such that the variance of the loadings is maximized.*

3.2 Structural equation modelling

Structural equation modelling (SEM) is a technique that can be considered as similar to regression modelling but more advanced. It permits the introduction of the latent constructs that really appear in such a phenomenon in which there are some latent factors due to the respondent subjectivity (de Oña et al., 2013). According to Nachtigall et al. (2003), a general structural model consists of two parts – a measurement model and a structural model.

A measurement model comprises the relations between the observed and the unobserved variables. If one of the observed variables constitutes an unobserved variable, it is called a proxy variable. It is called an indicator if it is measured by several observed variables (Urbánek, 2000).

Observed variables correlate only with measured unobserved variables, so the variance explained by the linear dependency of the observed variable on the unobserved variable represents every *valuable* variance of the observed variable (Urbánek, 2000). The model does not interpret the residual segment of the variance. The residual variance can be considered as an unobserved variable.

The measurement model can be algebraically interpreted as two systems of equations in matrix form (de Oña et al., 2013):

$$\vec{x} = \Lambda_x \vec{\xi} + \vec{\delta}, \quad (1)$$

$$\vec{y} = \Lambda_y \vec{\eta} + \vec{\varepsilon}, \quad (2)$$

where \vec{x} is the vector of the indicator for the vector of unobserved variable $\vec{\xi}$, \vec{y} stands for the vector of the indicator for the vector of unobserved variable $\vec{\eta}$, $\vec{\xi}$ is the vector for the unobserved exogenous variable, $\vec{\eta}$ is the vector for the unobserved endogenous variable, Λ_x and Λ_y are the matrixes of the structural coefficients for the relations of variables' vectors \vec{x} and $\vec{\xi}$ and variables \vec{y} and $\vec{\eta}$, and $\vec{\delta}$ and $\vec{\varepsilon}$ are the vectors of the residual variables for the vectors \vec{x} and \vec{y} .

The covariation matrixes Θ_δ and Θ_ε of the vectors of the residual variables are also included in the measurement model. These matrixes are usually diagonal, and residual variables do not correlate in the model (de Oña et al., 2013).

A structural model depicts the relations between the latent variables. This model detects which unobserved variable is independent (exogenous) and which unobserved variable is dependent (endogenous). We can say that the exogenous variable is not influenced by any of

the independent variables, whilst the endogenous variable is influenced by other variables. The structural model can be defined as follows (de Oña et al., 2013):

$$\vec{\eta} = B\vec{\eta} + \Gamma\vec{\xi} + \vec{\zeta}, \quad (3)$$

where B and Γ are the matrixes of the structural coefficients of the unobserved endogenous (exogenous) variables and $\vec{\xi}$ are the measurement errors (disturbances).

The *validity of the proposed model* can be proven with multiple chi-squared tests and the rate of change of a conditional mean is interpreted as a regression coefficient. CFI, NFI, RMSEA and Cronbach's alpha were used in this paper. Standardized regression coefficients should take values of 0.5 (optimally 0.7) and higher if the relations between the variables are important (Byrne, 2009; Hair et al., 2010).

The comparative fit index (CFI) can be interpreted algebraically as:

$$CFI = \frac{P_N}{P_{N_b}}, \quad (4)$$

where P_N and P_{N_b} are the parameters of non-centrality for the estimated and the basic model. The CFI ranges between 0 and 1 and the value of this index should be close to 1.000 for the optimal model. This index does not vary much with the sample size (Urbánek, 2000).

The normed fit index (NFI) can be defined algebraically as:

$$NFI = 1 - \frac{F}{F_b}, \quad (5)$$

where F is the minimum value of the loss function for the estimated model and F_b is the value of the loss function as the minimum for the basic model (Urbánek, 2000). The possible range of NFI values is 0 to 1. The NFI index should also be close to 1.000. We consider that a model with an NFI lower than 0.9 can be improved (Hooper et al., 2008).

The RMSEA index can be calculated as follows:

$$RMSEA = \sqrt{\frac{(\chi^2 - df_k)^2}{(N-1)}}, \quad (6)$$

where χ^2 is the chi-square, df is the degrees of freedom, k is the number of estimated (free) parameters and N is the sample size; see Hair et al. (2010). The RMSEA index should take a value of 0.08 up to 0.10 and lower. The lower its value, the more the proposed model fits the real data; see Urbánek (2000).

Cronbach's alpha is one of the most frequently applied coefficients of reliability and it measures reliability as internal consistency. It is a measure of reliability used to evaluate the degree to which different test items that probe the same construct produce similar results. Cronbach's alpha can be calculated as follows:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_i^2}{\sigma_t^2} \right), \quad (7)$$

where k is the number of estimated (free) parameters, σ_i^2 is the variance of component i for the current sample and σ_t^2 is the variance of the observed total test scores. The actual value of Cronbach's alpha should be (in the optimal case) higher than 0.7 for each latent variable. If the Cronbach's alpha of the latent variable exceeds 0.7 and higher, this latent variable is valid (Urbánek et al., 2011).

4. Model analysis and results

First, the variables in the model are specified in this part of paper; then, the results of the factor analysis and the validation of the proposed model are described. The validation consists of the validation of the measurement model and the validation of the structural model as well as the evaluation of the goodness-of-fit indexes.

4.1 Specification of the variables in the model

There were 26 variables in the original tested model. The number of variables was reduced to optimize the model.

Excluded variables

The variables that were not statistically reliable and significant in the original tested model were excluded from the model with the aim of achieving model optimization. As mentioned by Pawlasová (2014), all the observed variables that create the latent variables *Reciprocity* and *Reputation* were excluded because the actual significance levels of these latent variables were higher than the considered significance level of 0.05. In addition, the variable *Online group buying gives me a feeling of trust* (Q47) was excluded from the original model because its significance level was too high.

As was found in the process of model optimisation, the variables *The online group buying vendor suggests new product ideas* (Q50) and *I feel absolutely delighted with my overall shopping experience with online group buying vendors* (Q57) also had to be excluded from the model because the values of the goodness-of-fit indexes of the model with these variables were too low.

Variables in the optimal model

The tested model contains 19 variables, consisting of 8 observed variables and 11 unobserved variables, including 8 residual variables. The number of variables is appropriate for the number of respondents, because it is known that the number of respondents should be at least 5 or 7 times more than the number of variables. The following Table 1 shows the variables in the tested model.

The first latent variable, *Trust*, is measured by the observed variables Q48–Q49. These observed variables evaluate trust; trust is a consumer's confident belief in the online group buying vendor's honesty towards the consumer. Specifically, the following factors were evaluated:

Q48 I have trust in online group buying vendors.

Q49 The online group buying vendor gives me a trustworthy impression.

Table 1 Variables of the tested model

Type of variable	Name of variable in the model
Observed variables	Q48 – Q49
	Q51 – Q53
	Q54 – Q56
Latent variables	Trust
	Vendor's creativity
	Satisfaction
Residual variables	e1 – e8

Another latent variable, *Vendor's creativity*, is measured by three observed variables, Q51–Q53. These observed variables evaluate the vendor's creativity, which involves coming up with new ideas and new products to meet consumers' demands. To be precise, we explored the respondents' perceptions of the following:

Q51 The online group buying vendor often has new ideas about how to promote products.

Q52 The online group buying vendor often has a new approach to sale products.

Q53 The online group buying vendor develops new ways to meet consumers' demands.

The last latent variable, *Satisfaction*, is measured by three observed variables, Q54–Q56. We elicited the consumers' perceptions of their prior shopping experience with the online group buying vendor. Specifically, the following factors were evaluated:

Q54 I feel very satisfied with my overall shopping experience with online group buying vendors.

Q55 I feel very pleased with my overall shopping experience with online group buying vendors.

Q56 I feel very contented with my overall shopping experience with online group buying vendors.

Table 3 Communalities

Name of variable	Initial	Extraction
I have trust in online group buying vendors (Q48)	1.000	0.689
The online group buying vendor gives me a trustworthy impression (Q49)	1.000	0.562
The online group buying vendor often has new ideas about how to promote products (Q51)	1.000	0.822
The online group buying vendor often has a new approach to selling products (Q52)	1.000	0.921
The online group buying vendor develops new ways to meet consumer demands (Q53)	1.000	0.833
I feel very satisfied with my overall shopping experience with online group buying vendors (Q54)	1.000	0.663
I feel very pleased with my overall shopping experience with online group buying vendors (Q55)	1.000	0.724
I feel very contented with my overall shopping experience with online group buying vendors (Q56)	1.000	0.731

Extraction Method: Principal Component Analysis.

4.2 Results of the factor analysis

The factor analysis was performed in SPSS 20 to validate the proposed groups of factors. It was found that the factor analysis was valid and was successful for 69.9%. See Table 2.

Table 2 KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.699
Bartlett's Test of Sphericity	Approx. Chi-Square	716.811
	df	28
	Sig.	0.000

The following Table 3 shows the actual communalities, which mean the ratios of the latent variable in the variance of the observed variable.

The eight variables in the model were categorized into the three components of factors according to the factor analysis following the varimax method. See Table 4.

The first component is created by the variables Q51–Q53 as well as the latent variable *Vendor's creativity*. The second component is created by the variables Q54–Q56, so it describes the latent variable *Satisfaction*, and the last component is created by the other variables, Q48 and Q49, as well as the latent variable *Trust*. The designed components confirmed that the proposed factors of each latent variable in the model are valid and can be used for structural equation modelling.

4.3 Validity of the model

The presented values of the regression coefficients and goodness-of-fit indexes were calculated in SPSS Amos 20. Figure 2 shows the relations between the variables in the measurement model according to (1) and (2) and the relations between the variables in the structural model according to (3).

Validity of the measurement model

The relations between the observed and the unobserved variables in the measurement model were tested. Table 8 in the Appendix shows the values of the standardized

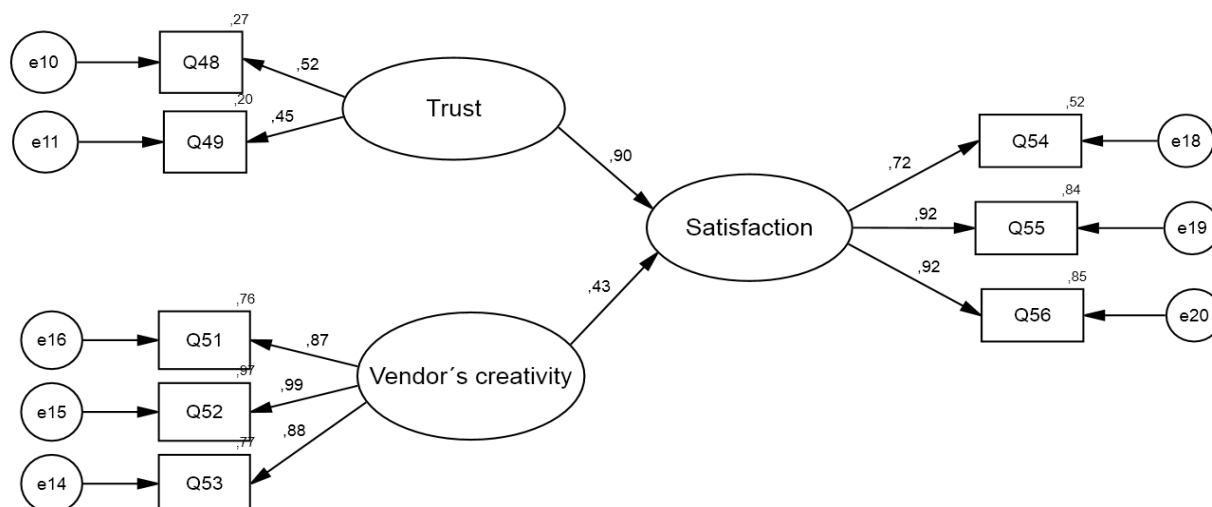


Figure 2 Regression coefficients of the measurement and the structural model

regression coefficients in the measurement model. The significance level of 0.05 was used.

All the observed variables in the measurement model are statistically reliable at the significance level of 0.05. See Table 8 in the Appendix.

If we consider 0.5 as the minimum value for a significant relation between variables, all the tested variables except Q48 are significant. In addition, the actual value of the standardized regression coefficient of variable Q49 shows that the relation is moderate, but the value is higher than 0.5. The significance of the variables *I have trust in online group buying vendors* and *The online group buying vendor gives me a trustworthy impression* are moderate, but these variables are statistically reliable, so they can be factors of the model. Both variables measure the latent variable *Trust*. We can consider their impact as weak.

There are three observed variables with strong relations to their latent variables. The actual values of their standardized regression coefficients are higher than 0.7 but lower than 0.9, and these are the variables *The*

online group buying vendor often has new ideas about how to promote products (Q51) and *The online group buying vendor develops new ways to meet consumer demands* (Q53), which measure the latent variable *Vendor's creativity*, and the observed variable *I feel very satisfied with my overall shopping experience with online group buying vendors* (Q54), which creates the latent variable *Satisfaction*.

There are also three observed variables with very strong relations to their latent variables. The actual values of their standardized regression coefficients are higher than 0.9. These are the variable *The online group buying vendor often has a new approach to sale products* (Q52), measuring the latent variable *Vendor's creativity*, and the observed variables *I feel very pleased with my overall shopping experience with online group buying vendors* (Q55) and *I feel very contented with my overall shopping experience with online group buying vendors* (Q56), creating the latent variable *Satisfaction*. These are the variables with the most important impact on users' satisfaction with online group buying.

Table 4 Rotated component matrix

Name of variable	Component		
	1	2	3
The online group buying vendor often has new ideas about how to promote products (Q51)	0.936		
The online group buying vendor often has a new approach to sale products (Q52)	0.875	0.366	
The online group buying vendor develops new ways to meet consumer demands (Q53)	0.811	0.356	
I feel very satisfied with my overall shopping experience with online group buying vendors (Q54)		0.916	
I feel very pleased with my overall shopping experience with online group buying vendors (Q55)		0.883	
I feel very contented with my overall shopping experience with online group buying vendors (Q56)	0.320	0.756	
The online group buying vendor gives me a trustworthy impression (Q49)			0.898
I have trust in online group buying vendors (Q48)		0.324	0.795

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Validity of the structural model

The relations between the latent endogenous and the latent exogenous variables in the structural model were tested. The following Table 5 shows the values of the standardized regression coefficients in the structural model. We used the significance level of 0.05

Table 5 Values of the standardized regression coefficients in the structural model

Latent endogenous variable	Latent exogenous variable	Significance	Standardized regression coefficients
Satisfaction	Trust	0.000	0.902
	Vendor's creativity	0.000	0.432

If we consider the significance level of 0.05, the relation between the latent variable *Trust* and the latent variable *Satisfaction* and the relation between the latent variable *Vendor's creativity* and the latent variable *Satisfaction* are statistically reliable. The variable *Trust* is more important than the variable *Vendor's creativity* because the actual value of the standardized regression coefficient is higher for the variable *Trust*; see Table 5. The relation between the variables *Vendor's creativity* and *Satisfaction* is moderate, whereas the relation between the variables *Trust* and *Satisfaction* is very strong.

Goodness-of-fit indexes of the proposed model

The comparative fit index (CFI), the normed fit index (NFI) and the RMSEA index were used to validate the proposed model. These coefficients were calculated in SPSS Amos 20. The internal consistency as reliability is measured by Cronbach's alpha, which was calculated in SPSS 20.

The CFI, NFI and RMSEA indexes show that the proposed model is optimal; see Table 6. The CFI index was calculated as (4), the NFI index as (5) and the RMSEA index as (6).

Table 6 CFI and NFI indexes for the tested model

Model	CFI	NFI	RMSEA
Default model	0.824	0.843	0.112

The CFI index of the tested model takes the value of 0.824. This is a high value. In addition, the NFI index, which takes the value of 0.843, shows that the model can be improved only minimally. According to the NFI index, the proposed model fits the real data with a score of 84%. The actual value of the RMSEA index is also good enough. All the indexes applied confirmed that this model is optimal. It means that there are just small possibilities to improve the model and these possibilities can be measured by residual variables. It would be necessary to conduct new research in this case.

Cronbach's alpha was calculated as (7) for each latent variable and the actual values are shown in Table 7.

It was found that all the latent variables are valid, because each actual Cronbach's alpha value for each latent variable is higher than 0.7; thus, it is possible to state that this model is valid.

Table 7 Values of Cronbach's alpha for each latent variable

Latent variable	Cronbach's Alpha	N of items
Trust	0.772	2
Vendor's creativity	0.937	3
Satisfaction	0.886	3

5. Discussion and managerial implications

According to the results, Czech users' satisfaction with online group buying is affected the most by the variable *Trust*. It was found that the variables *I have trust in online group buying vendors* and *The online group buying vendor gives me a trustworthy impression* are the most important indicators of satisfaction. That is why online group buying vendors should increase buyers' trust in this method of purchasing. It is possible to recommend money refunds if there is a problem with the service, insurance for vouchers or the possibility to withdraw from the contract after a longer period than 14 days. The providers can also set up security gates for payment, certificates of quality and secure certificates and they can become members of associations of online group buying.

The variable *Vendor's creativity* is the second most important indicator. *The online group buying vendor develops new ways to meet consumer demands* and *The online group buying vendor often has new ideas about how to promote products* have a strong impact on this latent variable, but *The online group buying vendor often has a new approach to selling products* is the most important factor creating the latent variable *Vendor's creativity*. It means that online group buying vendors should be innovative. They should think about new ways of promoting products and services and they should adopt a new approach to sell products. They can develop payment methods or money refunds in the case of a problem.

6. Conclusion

This paper discusses the factors affecting customers' satisfaction with online group buying. Social exchange theory was used to identify these factors. The factors reciprocity, reputation and trust are groups of variables that influence users' satisfaction with online group buy-

ing according to this theory. It was found in the literature review that these factors coming from this theory can be extended with the vendor's creativity.

This article extends the original paper by Pawlasová (2014), in which it was found that the proposed model is not optimal for the behaviour of Czech customers and that there are some possibilities for model improvement. These suggestions were applied first, which means that only the observed variables of the latent variables *Trust*, *Vendor's creativity* and *Satisfaction* influence the users' satisfaction with online group buying; the modified model is evaluated in this paper.

The aim of this paper is to identify the factors affecting customer satisfaction with online group buying and to find the optimal factor model for the conditions of the Czech Republic. This paper includes the theoretical background of online group buying as well as social exchange theory, which is the base of the proposed model. A factor analysis was conducted following the varimax method to categorize the variables according to their mutual relations and to validate the proposed groups of factors. Structural equation modelling was used to evaluate the proposed model in the Czech conditions and find the optimal model with the most significant factors. The theoretical background of these methods also forms part of this paper.

This research demonstrated that factor analysis and the structural equation modelling methodology constitute a powerful tool that can be used as a technique to identify the latent aspects that are hidden under a series of attributes describing the quality of the service. This type of methodology is useful, but it is difficult to establish whether this tool is better than other methodologies.

References

- ABDI, H. (2003). Factor rotations. In: Lewis-Beck, M., Bryman, A., Liao, T. F. (eds): *Encyclopedia for research methods for the social sciences*. Thousand Oaks: Sage, 978–982.
- BYRNE, B. M. (2009). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*. New York: Routledge.
- ERDOĞMUS, I. E., ÇİÇEK, M. (2011). Online Group Buying: What Is There For the Consumers? *Procedia – Social and Behavioral Sciences* 24: 308–316. <http://dx.doi.org/10.1016/j.sbspro.2011.09.138>
- HAIR, J. et al. (2010). *Multivariate Data Analysis*. New Jersey: Prentice Hall.
- HOOPEER, D. et al. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit, *Electronic Journal of Business Research Methods* 6(1): 53–59.
- NACHTIGALL, C. et al. (2003). (Why) Should We Use SEM? Pros and Cons of Structural Equation Modelling, *Methods of Psychological Research Online* 8(2): 1–22.
- MCDONALD, J. et al. (1990). Robust and Partially Adaptive Estimation of Regression Models, *The Review of Economics and Statistics* 72(2): 321–327. <http://dx.doi.org/10.2307/2109722>
- de OÑA, J. et al. (2013). Perceived service quality in bus transit service: A structural equation approach, *Transport Policy* 29: 219–226. <http://dx.doi.org/10.1016/j.tranpol.2013.07.001>
- de OÑA, J. et al. (2012). A classification tree approach to identify key factors of transit service quality. *Expert Systems with Applications* 39(12): 11164–11171. <http://dx.doi.org/10.1016/j.eswa.2012.03.037>
- PAWLASOVÁ, P. (2014). Evaluation of factors affecting users' satisfaction with online group buying based on SET. *Ekonomická Revue - Central European Review of Economic Issues* 17(4): 199–207. doi: 10.7327/ce-rei.2014.12.04
- SHIAU, W.-L., LUO, M. M. (2012). Factors Affecting Online Group Buying Intention and Satisfaction: A Social Exchange Theory Perspective, *Computers in Human Behavior* 28(6): 2431–2444. <http://dx.doi.org/10.1016/j.chb.2012.07.030>
- URBÁNEK, T. (2000). *Strukturální modelování v psychologii*. Brno: Psychologický ústav AV ČR a Nakladatelství Pavel Křepela.
- URBÁNEK, T. et al. (2011). *Psychometrika: Měření v psychologii*. Praha: Portál.
- WEINSTEIN, A. (2000). Customer satisfaction among transit riders: How customers rank the relative importance of various service attributes, *Transportation Research Record* 1735: 123–132. <http://dx.doi.org/10.3141/1735-15>
- ZAMAZALOVÁ, M. (2009). *Marketing obchodní firmy: nový přístup k zisku, růstu a obnově*. Praha: Grada.

Other sources

- MICHL, P. (2013). *Infografika: Slevové portály si vedou rok od roku lépe*. [Online], [cit. 2013-12-10] Available at [www: <http://www.m-journal.cz/cs/aktuality/Infografika:-Slevove-portaly-si-vedou-rok-od-roku-lepe__s288x9729.html>](http://www.m-journal.cz/cs/aktuality/Infografika:-Slevove-portaly-si-vedou-rok-od-roku-lepe__s288x9729.html).

Appendix

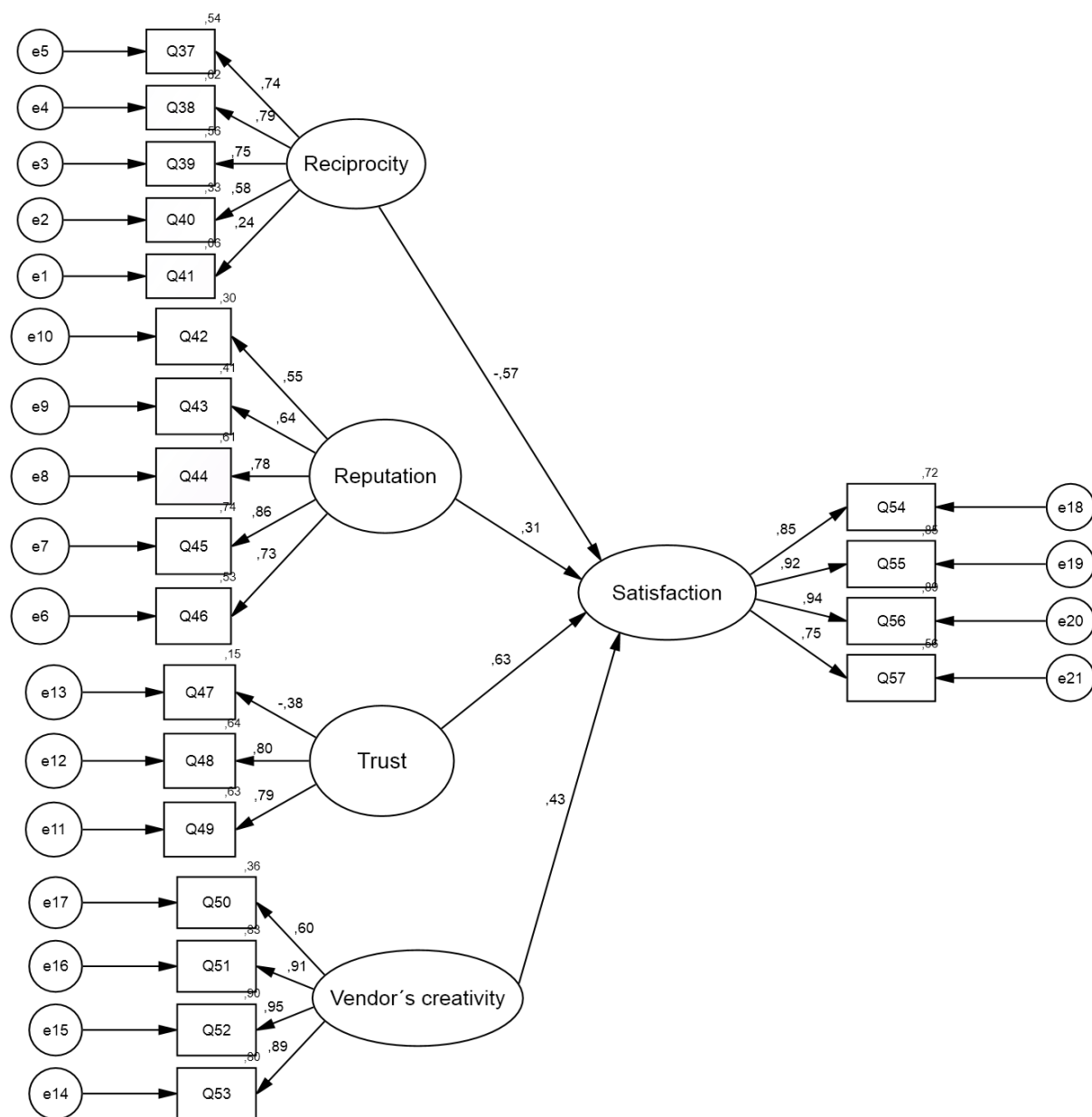


Figure 3 Original model by Pawlasová (2014)

Table 8 Values of the standardized regression coefficients in the measurement model

<i>Latent variable</i>	<i>Observed variable</i>	<i>Significance</i>	<i>Standardized regression coefficients</i>
Trust	I have trust in online group buying vendors (Q48)	0.000	0.454
	The online group buying vendor gives me a trustworthy impression (Q49)	0.000	0.518
Vendor's creativity	The online group buying vendor often has new ideas about how to promote products (Q51)	0.000	0.871
	The online group buying vendor often has a new approach to selling products (Q52)	0.000	0.987
	The online group buying vendor develops new ways to meet consumer demands (Q53)	0.000	0.879
Satisfaction	I feel very satisfied with my overall shopping experience with online group buying vendors (Q54)	0.000	0.723
	I feel very pleased with my overall shopping experience with online group buying vendors (Q55)	0.000	0.916
	I feel very contented with my overall shopping experience with online group buying vendors (Q56)	0.000	0.923

