

MONITORING CHANGES IN CONSUMER REQUIREMENTS FOR WOOD PRODUCTS IN TERMS OF CONSUMER BEHAVIOR

Miriam Olšiaková – Erika Loučanová – Hubert Paluš

ABSTRACT

This paper is aimed at the monitoring of the changes in selected consumer requirements for wood products in terms of consumer behavior in the years 2004 and 2014. Based on the comparison of observed consumers' behavior requirements for wood products obtained by a questionnaire survey and a constructed Kano model, we found out significant changes in consumers' requirements mainly regarding the price and quality using the measurement of the rate of satisfaction and dissatisfaction of customers with predefined wood products parameters. At the present, price is no longer the most significant factor because the rate of dissatisfaction of consumers with the price of wood products significantly decreased by 35% while maintaining a similar level of satisfaction. The satisfaction with products quality increased by 80% followed by a decrease in dissatisfaction by 25%. The customers have not changed their consumption behavior towards wood as a material and therefore it is advisable to maintain the existing position and implement innovative strategic business models that emphasize wood as a material and its quality compared to substitute materials.

Key words: consumer behavior, consumer requirements, wood products, Kano model, comparison.

INTRODUCTION

Market competition accelerates technological progress and innovation in all areas to meet the customer needs. From a microeconomic perspective the customer satisfaction can be understood as a factor of product competitiveness valuation that can satisfy the maximum volume of customer needs regarding the knowledge of his/her behavior as a consumer. Surveying consumer behavior is an interdisciplinary issue.

Consumer behavior is presented by dynamic interactions of people and surrounding containing emotions, cognition and action, through which people realize exchange in order to meet their needs (RICHTEROVÁ *et al.* 2005). Consumer behavior involves the understanding that acquisition, use and disposition can occur over time in a dynamic sequence. To understand consumer behavior it is important to understand psychological factors, such as motivation, perception, learning and attitude, personal characteristics and their influence appearing in reactions to stimuli and previous experience in decision-making process when choosing the products. The interdisciplinary approach to consumer behavior analysis has significantly contributed to the knowledge expansion of the issue and has

created stimuli for broad research of consumers that are the core of marketing research within the market psychology (KULČÁKOVÁ, RICHTEROVÁ 1997). REJMÁNEK (1968) defines the market psychology as a practically oriented psychological discipline that monitors physical effects related to consumer behavior after realizing the exchange of goods. The core of the market psychology relies in solving the practical economic problems, including market development through the research of consumer behavior and purchasing motivation.

At the present the market psychology is applied in all tools of marketing mix called as the "4P": product, price, promotion and place. The origin of the market psychology was forced by everyday economic practice. Successful sellers in the goods and services markets realized that their success does not mainly lie in their professional technical quality, but that their work applies particularly good knowledge of the customer, as well as social skills in direct and indirect communication with customers and understanding associated social phenomena, such as the evolutional family cycles, fashion trends and cultural differences between countries and ethnical groups. The present market psychology represents a very rich and powerful stream aimed at the investigation of consumer behavior in its widest economic, cultural and individual context.

LOUDON and DELLA BITTA (1993) present a current understanding of the market psychology, which emphasizes the understanding of consumer segments that have common characteristics and it is possible to create for them the same communication ways and means of communication. In addition they focus on the understanding of broad context of influences that less or more impact consumer behavior. A significant attention is paid to background factors such as the culture, subculture, social class and social groups, including the family and the influence of consumer individual personality. It reflects self-perception, motivation, information processes, and ways of learning, remembering and attitudes. Only a careful knowledge of these basic influences can help to understand the man's decision-making process when buying goods or services on the market and to choose the way of adapting to the changing needs of people or influencing them (VÝROST, SLAMENÍK 1998). Based on the mentioned ideas, customers prefer products, which present important factors determining the preferences of the product, keeping the same conditions on the market to satisfy their needs (LUO 2010, STRAKA 2013). Identifying and satisfying the customer needs is an essential mean that enables the entrepreneurs to be profitable and competitive. This concept predetermines them to understand their customers (TOKARCZYK, HANSEN 2006). Considering these thoughts we can add that based on the findings of the consumer behavior studies there have been developed several models that provide knowledge on decision-making processes of consumers during the purchase, learning the problem, searching information, evaluating alternatives and their choosing phases, as well as after-purchasing processes (OLŠIAKOVÁ 2006, OLŠIAKOVÁ, KUSÁ 2008).

For market-oriented businesses, there are many tools for identifying customer needs and desires for the subsequent identification of consumer behavior. One of the most frequently used tools is a consumer questionnaire survey. Its main goal is to provide relevant and objective information about the situation on the market in order to describe, diagnose and predict the information for decision-making processes or companies' strategic reviews to create a link between companies and consumers when monitoring the marketing performance (WANG 2015, FU 2015). It is a method of traditional marketing. Many authors in their works follow the arguments of professor KANO (1984) that customers are not generally able to specify precisely their requirements for a product that they are interested in. Based on this idea he developed a psychological model to identify the relevant customer requirements, which presents another of a number of tools to identify the needs and desires of customers for subsequent identification of their consumer behavior. It is used by major businesses of automotive and electronical industries when developing innovative products

(SHAHIN, ZAIRI 2009). In recent years, it has been used in various areas of business in order to increase competitiveness, for qualifying and integrating into the QFD (Quality Function Deployment) within the product design optimization e.g. described by Ji *et al.* (2014), or to optimize the capacity of businesses following the logical priority of customer needs, as it is presented by JEYARAJ *et al.* (2014).

These principles operate the same way in various industry sectors including the wood processing industry, where the paper is focused on. The issue of customers' satisfaction and analysis of their opinion in relation to the wood processing industry is presented by RAMETSTEINER *et al.* (2007). He analyzed the opinions and attitudes of consumers towards the determined categories of wood products in European countries and found out that design and quality belong among the preferred properties. PALUŠ *et al.* (2012) when comparing the attitudes of final consumers for selected wood products in Slovakia and Poland confirmed that the final consumers prefer the wood material to its substitutes. There are several reasons, but mainly its environmental friendliness, environmental suitability, recoverability and nature as well as tradition and health and safety characteristics. LOUČANOVÁ *et al.* (2015) pointed out similar conclusions. When identifying the differential values of selected wood products as well as consumer groups she found out that wood itself as a material in its nature is the main differentiation feature compared to substitute materials. Wood is a unique and final solution in the field of quality. MANUEL AND LEONHART (2015) focused on the visual aspects of wood. Their study was aimed at the examination of consumer preferences in regarding visually different spruce floor samples. Results indicate specific market segments according to different consumer preference groups. They found out that wood for interior use is attractive to many consumers for aesthetic and ecological reasons. Visual attractiveness can be decisive for high added value. Industrial wood grading based on technical parameters is a common practice, but little is known about consumer preferences which could direct the production chain from the tree to the final product presented to the consumer. Several studies were elaborated to prove the role of ecolabels and green product claims in providing product an added value and influence firms' sustainability strategies and consumers behavior (DARNALL, ARAGON-CORREA 2014; VLOSKY *et al.* 1999, ANDERSON AND HANSEN 2004).

Based on the above mentioned overview, the main objective of this paper is to monitor the changes in selected consumer requirements for wood products in terms of consumer behavior in 10 years. In particular, results of two surveys are used for comparison of consumer behavior requirements for wood products obtained by a questionnaire survey and a constructed Kano model in order to identify significant changes in consumers' behavior.

METHODOLOGY

The basic method used in this paper for identification of changes in consumer requirements for wood products in terms of consumer behavior is a comparison of research results aimed at the customer requirements for wood products in the last 10 years. The research focused on the comparison of three main parameters that are considered by customers when buying wood products, in particular quality, material and price, as it also follows from similar studies (RAMETSTEINER *et al.* 2007, PALUŠ *et al.* 2012, LOUČANOVÁ 2015). The attitudes, from the consumer behavior point of view, towards wood products were monitored in the survey of purchasing behavior in the period 2004–2005 (OLŠIAKOVÁ 2006; KUSÁ, OLŠIAKOVÁ 2008) and the survey that identified customer's requirements for wood products in 2014 (LOUČANOVÁ *et al.* 2015). As the approaches to both surveys differed

slightly, we shortly explain the methodology used in both cases and present proposal for integration of result in order to compare them.

In 2004–2005 survey, the research population was represented by all residents of the Slovak Republic older than 18 years. Random selection sampling was used during the international furniture fair. Pre-testing at the sample of 30 respondents was carried out, resulting in 20 returned questionnaires, thus allowing for the standard deviation calculation $s = 0.47$. Given estimation reliability (z) 95%, maximum margin of error (H) = 3.5% and calculated standard deviation $s = 0.47$ the minimum sample range of 693 respondents was calculated using the formula (RICHTEROVÁ *et al.* 1999):

$$n = \frac{z^2_{1-\alpha/2} \cdot s^2}{H^2} \quad [2]$$

There were mostly closed questions used in the questionnaire divided into areas such as demographic data and respondents' valuation of selected factors. The respondent could value the seriousness/relevance of the selected factor in the scale from 1 to 5. Value 1 meant that the evaluated factor was considered as the least significant. Each factor could receive a maximum of 5 points. Some 750 questionnaires were distributed out of which 696 questionnaires were returned (93% rate of return).

In 2014 research the methodology for the identification of customer requirements for wood products was based on the elementary steps of Kano model, following the relationship between the importance of individual properties of selected products and customer satisfaction. Based on the methodology of Kano model (KANO 1984) a questionnaire formulating positive and negative question (statement) on monitored customers' requirements was constructed to collect customer reaction in the range of Likert's scale (strong agreement, partial agreement, a neutral attitude, partial disagreement, strong disagreement). There was a questionnaire applied as a primary method of identifying customer specific requirements for products, thus representing a multilateral method to obtain and assembly primary data on the customers' activities and attitudes. To make the survey relevant the minimum sample range of respondents (196) was defined, given estimation reliability (z) 95% and maximum margin of error (H) = 7%. Finally 240 responses were received. For each variable individual responses to positive and negative question (statement) through cross rules of KANO model were separately evaluated (Table 1), so that specified the requirements for wood products were selected. The given approach divided individual monitored values into requirements: must be (M – if these requirements are not fulfilled, the customer will be very dissatisfied and on the other hand, in case of their fulfillment they have only little impact on his satisfaction), One-dimensional requirements (O we can see a linear dependence between their fulfillment and satisfaction - the more requirements are fulfilled, the more satisfied the customer is), attractive requirements (A – fulfillment of these requirements lead to an exponential increase in customer satisfaction and if these requirements are not fulfilled, the customer will be dissatisfied; these requirements have the greatest impact on customer satisfaction), reverse requirements (R – they represent product attributes where customers react contradictorily), indifferent requirements (I - attributes that are not decisive for the customers and their fulfillment or failure does not influence their satisfaction or dissatisfaction) or questionable requirements (Q – they express controversial result which results either wrongly formulated questions or customers misunderstanding of questions).

Tab. 1 KANO model for evaluation of customers' requirements.

		Negative conceived question				
		Strong agreement	Partial agreement	Neutral stance	Partial disagreement	Strong disagreement
Positive conceived question	Strong agreement	Q	A	A	A	O
	Partial agreement	R	I	I	I	M
	Neutral stance	R	I	I	I	M
	Partial disagreement	R	I	I	I	M
	Strong disagreement	R	R	R	R	Q

Source: DUCÁK *et al.* 2006

The categorized customer requirements for selected products are then expressed in percentage, where the category with the highest percentage occurrence identifies the specific category of the product monitored parameter (LOUČANOVÁ *et al.* 2015).

The basic methodological follows the idea of the methodical comparison by Tidd *et al.* (2007), which was applied to the conditions of monitored parameters (price, quality, material) in both surveys carried out in 2004–2005 and 2014. The individual parameters were evaluated in absolute numbers for each type of the observed customer requirements. To compare the monitored parameters the identified requirements was assigned a value where the most important factor or required factor has the value 5. An insignificant factor, respectively exactly the opposite factor had the lowest value 1. Taking into account the significance of these customer requirements a weighted average for each monitored parameter was calculated and subsequently presented in graphical form. The coefficients of satisfaction and dissatisfaction (KRNÁČOVÁ, LESNÍKOVÁ 2012) were calculated as follow:

$$satisfaction\ coefficient = \frac{A+O}{A+O+M+I} \quad (2)$$

$$dissatisfaction\ coefficient = \frac{O+M}{(A+O+M+I)} \times (-1) \quad (3)$$

The values of the dissatisfaction coefficient represent the negative impact of the customer's requirement non-compliance and its values range from -1 to 0 (the more the value is closer to -1, the more it represents a higher customer dissatisfaction with the requirement).

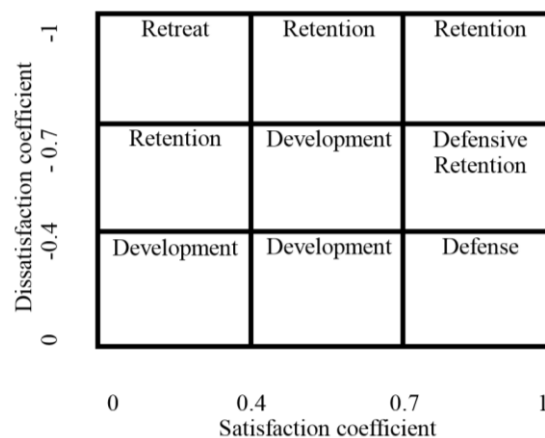


Fig. 1 Modified McKinsey matrix.

Source: LOUČANOVÁ 2015; BARTÁKOVÁ *et al.* 2007

The satisfaction coefficient represents the influence of requirements on customer in the range from 0 to 1 (the more the value is closer to 1, the more it represents a higher customer satisfaction with the requirement)

The calculated values of given coefficients are then drawn in the McKinsey portfolio matrix which is divided into nine fields (LOUČANOVÁ 2015).

Based on the requirements location in the modified requirements matrix it is subsequently decided on the strategy placement.

In order to generalize variables and identify dependencies among them a correlation matrix was calculated using the Statistica program. The degree of dependence among variables is determined by correlation analysis. The interpretation of the correlation coefficient is described by CHRÁSKA (2000). A dependency among different variables represents a weak dependence within a limit from 0 to 0.4, medium dependency from 0.4 to 0.7, high dependency from 0.7 to 0.9 and a very high dependency in the interval from 0.9 to 1. While the positive correlation coefficient indicates a positive dependence (where the variable growth causes the growth of dependent variable) and a negative value indicates a negative dependency.

RESULTS AND DISCUSSION

Monitoring changes in consumers' requirements for wood products in terms of their consumer behavior in 10 years is based on a comparison of research results. The first survey was realized in 2004–2005 and the second one after 10 years in 2014. The results of these surveys are presented in Table 2. The results comparison points out several differences. In the first survey the price and quality represent the most important factor and the material is a medium important factor. However, in the second survey carried out after 10 years, the customer preferences have changed, especially in the parameter of price, which would be attractive for customers if it meets their requirements and leads to an increase in their satisfaction exponentially, but it is no longer considered to be the most important requirements. Material is also a factor of medium importance and is in a linear relationship with satisfaction if it fulfils customer ideas related to the material. It follows that the more the material meets their requirements, the more the customers are satisfied. Very similar reactions of customers can be identified in the field of quality of wood products. At the present, the better quality, the better satisfaction of customers, however, the quality is no longer the most important factor compared to 2004.

Tab. 2 Results of surveys of customers' requirements for wood products.

2004–2005				2014			
Requirements	Price	Material	Quality	Requirements	Price	Material	Quality
Attach any importance	8	16	5	Reverse	27	26	5
Less significant factor	33	46	11	Indifferent	72	59	22
A very important factor	171	192	58	Attractive	47	21	68
Medium important factor	225	293	249	One-dimensional	39	93	94
The most important factor	259	149	373	Must be	28	26	41
				Questionable	27	15	10

The given differences may be misleading because of using different survey methodologies. The first survey does not reflect the psychologically relevant customer requirements compared to the second survey. Therefore, to obtain comparable results it is necessary to determine the weighted values of survey results and to calculate arithmetic

average as well as the coefficients of customer satisfaction and dissatisfaction with wood products and with observed selected parameters (Table 3).

Tab. 3 Calculated values of customers satisfaction parameters.

2004–2005				
Answers	Value	Price	Material	Quality
Attach any importance	1	8	16	5
Less significant factor	2	66	92	22
A very important factor	3	513	576	174
Medium important factor	4	900	1172	996
The most important factor	5	1295	745	1865
Weighted average		3,997126	3,737069	4,399425
Satisfaction coefficient		0,509373	0,676209	0,382728
Dissatisfaction coefficient		–0,79128	–0,74159	–0,93588
2014				
Answers	Value	Price	Material	Quality
Reverse	1	27	26	5
Indifferent	2	144	118	44
Attractive	3	141	63	204
One-dimensional	4	156	372	376
Must be	5	140	130	205
Weighted average		2,85446	3,151111	3,626087
Satisfaction coefficient		0,511188	0,636896	0,699638
Dissatisfaction coefficient		–0,50947	–0,73499	–0,70084

After calculating the data it can be seen that the values of customer requirement for wood products have not changed remarkably. By comparison of weighted averages in monitored periods, we can see only slight differences in the customers' requirements for wood products (Figure 1). As the figure shows the customers decrease their requirements for wood products. The price is no longer the most significant factor. On the other hand, the customers are still interested in the quality of products. The material is in the same position within the evaluation of monitored parameters.

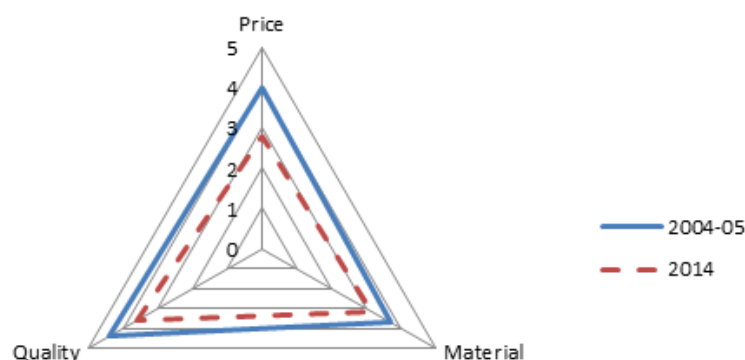


Fig. 1 Comparison of monitored parameters from the point of view of changes to required parameters of wood products.

To understand the changes in customer preferences for wood products in the period from 2004 to 2014, we calculated the dissatisfaction coefficient, which represents the negative influence of non-compliance with the customer requirements and satisfaction coefficient representing the influence of requirements on customer satisfaction. The values of these parameters are presented in the modified McKinsey portfolio matrix and point to psychological changes in the perception of monitored parameters in monitored periods (Figure 2).

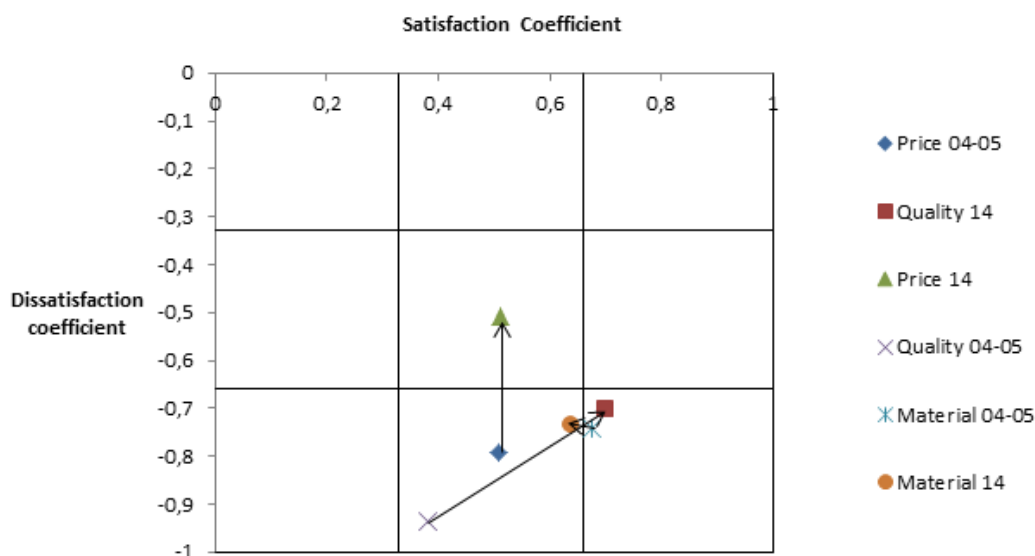


Fig. 2 Modified McKinsey matrix of customers' satisfaction and dissatisfaction with the observed parameters of wood products.

To generalize the monitored wood product parameters a correlation matrix was calculated. It refers to the relationship among monitored variables (Table 4).

Tab. 4 Correlation matrix.

*Designation correlations are significant at the level $p < 0.05000$						
Variables	Material '04	Quality '04	Price '04	Material '14	Quality '14	Price '14
Material '04	1	0.50821*	-0.01498	0.08929	0.03105	0.03097
Quality '04	0.50821*	1	-0.04033	-0.00627	-0.10187	-0.02574
Price '04	-0.01498	-0.04033	1	-0.0855	-0.06698	-0.16234*
Material '14	0.08929	-0.00627	-0.0855	1	0.51095*	0.43877*
Quality '14	0.03105	-0.10187	-0.06698	0.51095*	1	0.26087*
Price '14	0.03097	-0.02574	-0.16234*	0.43877*	0.26087*	1

Price factor value in 2004 had a satisfaction coefficient 0.509373, which in 2014 increased to 0.511188, that does not present a significant difference. However, there was a significant difference in a dissatisfaction coefficient (by 0.28181 in absolute value), so the price in the compared period moved into the middle quadrant in terms of dissatisfaction. This means that the customers are less dissatisfied with the price of wood products compared to previous time and the price is not so decisive factor, although it still has an important position in customer satisfaction in terms of value of satisfaction coefficient that has not changed in monitored periods.

This fact is indicated by a negative correlation coefficient (-0.16234), where a weak negative dependence between prices in years 2004 (0.50821) and 2014 (0.51095) suggests that price is not the decisive factor when buying wood products. This brings new opportunities for traders in terms of the pricing policy development towards the customers and possibility for the usage of new innovative tools of pricing policy connected with marketing tools and communication mix.

The material in the given period has not significantly changed, neither in terms of customers' satisfaction (0.0393131) nor from the perspective of dissatisfaction (0.0066). Statistical evaluation of the dependence degree with monitored variables stayed also almost

unchanged; the dependence between the material and quality was confirmed in both years - 2004 and 2014. The strategies choice is on the border between development and defensive strategy. This fact signifies substitution materials development, influenced by a considerable degree of innovative outputs, new materials and technologies introduction that can compete against wood (ŠUPÍN, PALUŠ 1999). It also highlights the need to adopt a defensive strategy to maintain the standards that the customers prefer material itself most of all on wood products. It represents a competitive advantage over substitute materials (LOUČANOVÁ *et al.* 2015).

The last monitored parameter – quality recorded the most significant shift in consumer behavior during the monitored period. This change in customer satisfaction is more than 80% (by 0.31691) and dissatisfaction by 25 % (by 0.23504) in positive way. That means that satisfaction increases and dissatisfaction decreases. Using results of correlation matrix, this fact is reflected in a weak dependence between the quality and the price in 2014 (0.26087) and medium dependence between the quality and the material in both monitored periods. It shows the similar effect as with the material and in terms of the strategy the wood industry should focus on the maintenance strategy to maintain and keep qualitative standards or to improve them. Differences in results may be partially caused by various sample ranges (n = 696, 240), however this was not proved in this study.

The results of this paper show growing differences in consumer behavior of customers of wood products in time. They mainly focus on quality, which represents their greatest satisfaction but also the greatest dissatisfaction in case their requirements are not met. Closely related are changes in the parameter of material that recorded minimal changes in consumer behavior. This may be caused by wood material itself, which is preferred to substitute materials (PALUŠ *et al.* 2012). Price is no longer an important parameter in consumer behavior of customers compared to the previous period. Results also confirm the focus of consumers on quality, as it was confirmed by e.g. RAMETSTEINER *et al.* (2007), who presents similar attitudes of consumers towards the listed categories of wood products and describes the differences in preferred characteristics such as design and quality. It also points to the wood competitiveness as a material regarding its features. Wood is a resource that Slovakia disposes, and it also represents renewable wealth that follows the tradition of wood processing industry. In cooperation with forestry it creates a complex of traditional industry in Slovakia (PAROBK *et al.* 2014).

CONCLUSION

This paper was aimed at the monitoring and comparing the changes in chosen consumer requirements for wood products in 2004 and in 2014. Based on the comparison of observed consumers' behavior requirements obtained through a questionnaire survey, a Kano model pointing out significant changes in consumers' requirements regarding the price and quality was constructed. To build the model, a rate of satisfaction and dissatisfaction of customers with predefined wood products parameters was determined. At the present, price is no longer the most significant factor because the rate of dissatisfaction of consumers with the price of wood products significantly decreased by 35 % while maintaining a similar level of satisfaction. The product quality satisfaction increased by 80 %. It is followed by a decrease in dissatisfaction by 25%. The customers have not changed their consumption behavior towards wood as a material. Therefore it can be concluded that the most important wood products parameters influencing consumers' behavior are mainly the quality and the material. The material (wood and its quality) presents the element of differentiation towards substitute products. The price is no longer the essential customers' requirement as it used to

be as dissatisfaction with price of wood products has significantly decreased in time and satisfaction is preserved. Regarding the strategy for wood products it is suitable to maintain the position and implement innovative strategic business models that emphasize wood as a material and its quality compared to substitute materials.

References

- ANDERSON, R. C., HANSEN, ERIC. N. 2004. The impact of environmental certification on preferences for wood furniture: A conjoint analysis approach. *Forest Products Journal*, 54(3): 42–50.
- BARTÁKOVÁ, G. A KOL. 2007. *Marketing manažment II – ako v súčasnom trhovom prostredí postupovať*. Bratislava: 228 s.r.o. ISBN 978-80-969856-1-6.
- DARNALL, N, ARAGON-CORREA, JA. 2014. Can Ecolabels Influence Firms' Sustainability Strategy and Stakeholder Behavior? *Organization & Environment*, 27(4): 319–327. ISSN 1086-0266.
- DUCÁR, S., NAŠČÁKOVÁ, J. MALÁK, M. 2006. Návrh systému merania spokojnosti zákazníkov Kano modelom. In *Transfer inovácií 9/2006*. s. 137–139. ISBN 80-7093-6.
- FU, T. 2015. Market Research and Development under the Network Environment In *Proceedings of the 2015 International Conference on Social Science and Technology Education*, 18, p. 229–231.
- CHRÁSKA, M. 2000. *Základy výzkumu v pedagogice*. Olomouc : VUP. 257 s. ISBN 80-7067-798-8.
- JEYRAJ, K. L. *et al.* 2014. Customer Needs and Customer Satisfaction Analysis in a Textile Dyeing Process: A Case Study. *Clouthing and Textiles Research Journal*, 32(4): 282–295.
- Ji, P., JIN, J., WANG, T. ET AL. 2014. Quantification and integration of Kano's model into QFD for optimising product design. *International Journal of Production Research*, 52(21): 6335–6348.
- KANO, N. *et al.* 1984. Attractive quality and must-be quality. *Journal of the Japanese Society for Quality Control*, 14(2): 39–48.
- KRNÁČOVÁ, P., LESNÍKOVÁ, P. 2012. Kano model spokojnosti zákazníka v neziskovom sektore. In *Vedecké state Obchodnej fakulty 2012*. ISBN 987-80-225-3452-9. s. 368–382.
- KULČÁKOVÁ, M., RICHTEROVÁ, K. 1997. *Spotrebiteľ na trhu*. Bratislava : Vydavateľstvo Sprint. 182 s. ISBN 80-88848-19-9.
- LOUČANOVÁ, E., KALAMÁROVÁ, M., PAROBEK, J. 2015. Konkurencieschopnosť produktov dreva z pohľadu použitého materiálu. *Acta Facultatis Xylogologiae Zvolen*, 57(2): 155–163.
- LOUČANOVÁ, E. 2015. Návrh metodiky nástrojov pre efektívne riadenie inovácií na základe požiadaviek zákazníkov. In *Poster.sk : portál pre odborné publikovanie*. 8(4).
- LOUNDON, D.L., DELLA BITTA, A.J. 1993. *Consumer behavior. Concepts and applications*. 4th ed. New York : Mc Graw Hill.
- LUO, XM. 2010. Product competitiveness and beating analyst earnings target. *Academy of Marketing Science Journal*, 38(3): 253–264.
- MANUEL, A., LEONHART, R. 2015. Consumers' perceptions and preference profiles for wood surfaces tested with pairwise comparison in Germany. *Annals of Forest Science*, 72/6: 741–751.
- OLŠIAKOVÁ, M., KUSÁ, A. 2008. Vyhodnotenie vplyvu vybraných nástrojov marketingového mixu na správanie sa spotrebiteľov pri kúpe nábytku. *Vedecké štúdie*. Zvolen : Technická univerzita vo Zvolene, 84 s. ISBN 978-80-228-1943-5.
- OLŠIAKOVÁ, M. 2006. Výskum vplyvu vybraných nástrojov marketingového mixu na správanie sa spotrebiteľa pri výbere nábytku. In *Marketing a obchod 2006 : Trvalo udržateľný rozvoj – predpoklad hospodárskeho rastu*. Zvolen : Národné lesnícke centrum. s. 179-184. ISBN 80-8093-009-0.
- PALUŠ, H., MAŇOVÁ, H., KAPUTA, V. 2012. Consumer preferences for joinery products and furniture in Slovakia and Poland. *Acta Facultatis Xylogologiae Zvolen*, 54(2): 123–132.
- PAROBEK, J., PALUŠ, H., KAPUTA, V. ŠUPÍN, M. 2014. Analysis of wood flows in Slovakia. *BioResources*, 9(4): 6453–6462.
- RAMETSTEINER, E., OBERWIMMER, R., GSCHWANDTL, I. 2007. Europeans and wood: What do Europeans think about wood and its uses? A review of consumer and business surveys in Europe. [online]. Warsaw: Ministerial Conference on the Protection of Forests in Europe, Liaison Unit

- Warsaw, 70 p. ISBN 978-83-926647-0-3. [cit. 2011-12-05.]. Available: http://www.foresteurope.org/filestore/foresteurope/Publications/Eur_Wood_net.pdf
- REJMÁNEK, E. 1968. Co je psychologie trhu – Populární přehled. Praha : Merkur.
- RICHTEROVÁ, K. a kol. 1999. Kapitoly z marketingového výskumu. Bratislava : Ekonóm, 242 s. ISBN 80-225-0966-3.
- RICHTEROVÁ, K., KULČÁKOVÁ, M., KLEPOCHOVÁ, D. 2005. Spotrebiteľské správanie. Bratislava : Ekonóm, 206 s. ISBN 80-225-2036-5.
- SHAHIN, A., ZAIRI, M. 2009. Kano Model : a Dynamic Approach for Classifying and Prioritising Requirements of Airline Travelers with Three Case Studies on International Airlines. *Total Quality Management*, 20(9): 1003–1028.
- STRAKA, M. 2013. Logistika distribúcie, Ako efektívne dostať výrobok na trh. Bratislava : EPOS, 400 s. ISBN 978-80-562-0015-5.
- ŠUPÍN, M., PALUŠ, H. 1999. Approaches to the forest products demand analysis. In: *Marketing w przemyśle meblarskom*, Warszawa : Wydział Technologii Drewna SGGW w Warszawie. s. 54–56. ISBN 83-909414-1-4
- TIDD, J., BESSANT, J., PAVITT, K. 2007. Řízení inovací. Brno : Computer Press, 549 s. ISBN 978-80-251-1466-7.
- TOKARCZYK, J., HANSEN, E. 2006. Creating Intangible Competitive Advantages in the Forest Products Industry. *Forest Products Journal*, 56(7/8): 4–13.
- VÝROST, J., SLAMENÍK, I. 1998. Aplikovaná sociální psychologie I. Praha : Portál, 384 s. ISBN 80-7178-269-6.
- VLOSKY, R.P., OZANNE, L.K., FONTENOT, R.J. 1999. A conceptual model of US consumer willingness-to-pay for environmentally certified wood products. *Journal of Consumer Marketing*, 16(2): 122–140.
- WANG, S. 2015. Discussing on the Characteristics and Functions of Market Research. In *Theoretical and methodological approaches to social science, economics and management science*, s. 263–266.

Acknowledgements

The authors would like to thank the Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic and the Slovak Academy of Sciences. This paper was elaborated within the frame of Grant project 1/0473/16 “Dynamics and Determinants of Wood Based Products Market in the Slovak Republic“.

Authors addresses

Ing. Miriam Olšiaková, PhD.
Ing. Erika Loučanová, PhD.
doc. Ing. Hubert Paluš, PhD.
Technická univerzita vo Zvoelene
Drevárska fakulta
Katedra marketingu, obchodu a svetového lesníctva
T. G. Masaryka 24
960 53 Zvolen, Slovenská republika
olsiakova@tuzvo.sk
loucanova@tuzvo.sk
palus@tuzvo.sk