

# Consumer Preferences for Wooden Furniture in Croatia and Slovakia

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During the last decade, the Slovak and Croatian furniture industry markets have experienced changes that have made these markets more interesting for domestic and foreign investors. Furniture manufacturers and retailers are still trying to determine the best ways to adjust to customer demands, and understanding the furniture preferences of customers would provide beneficial information to the furniture industry. The purpose of this study, which was conducted in 2016, was to improve the knowledge regarding differences in the preferences of customers for furniture materials, attributes, and styles when purchasing furniture in Slovakia and Croatia. The findings showed that Slovak and Croatian respondents differ in their preferences for furniture materials, as well as the factors that influence their purchasing decisions when buying interior and exterior furniture. Overall, it was found that wood as the furniture material, compared with the surveyed substitutes, was widely preferred among the Croatian and Slovak respondents.

*Keywords:* Consumer preferences; Wooden furniture; Material substitutes; Furniture attributes

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## INTRODUCTION

Every person experiences the world in a different way, and reality for the individual is only what is perceived to exist or what occurs. But this experience is also based on personal needs, wants, values, and experiences. Many consumers view their home and furniture as extensions of themselves. As such, buying furniture can be seen as an emotional purchase (Perry 2007; Ponder 2013). Additionally, furniture today, even if it is not functionally necessary, represents a status symbol and is most often considered a permanent investment. Preferences are typical in the consumer market, and according to Dhar (1997), consumers often face situations in the marketplace that require choosing among several alternatives. According to Turner and Edwards (1974), preference is the priority to which a consuming unit (a household, family, or individual) refers to when a decision-making situation is encountered. Technological changes, the rise of social media, evolving demographics, and increasing purchasing power of women are just a few factors that furniture manufacturers and retailers must consider in their marketing efforts (Ponder 2013).

Consumers can be divided into similar groups that have homogenous needs by market segmentation (Sinclair 1992). These groups can vary with regards to the age, gender, education, profession, geographic location, purchasing power, buying attitude and practice, interest, wants, and needs of the consumers (Kotler 1991; Schiffman and Kanuk 2004). Smith *et al.* (2010) noted that some buyer modalities include divisions based on consumer demographics and geography to achieve market segmentation. According to

Nicholls and Stiefel (2007), socio-demographic factors, including age, gender, and income, are related to preferences for a variety of wood products. This is in line with some of the findings of Nicholls and Bumgardner (2007), who noted some socio-demographic statistical differences in preferences among wood furniture consumers. Age and income were both found to be statistically significant, with age having a stronger effect. In contrast, gender was not found to be statistically significant. According to Schiffman and Kanuk (2004), informal communications with consumers are considered credible sources in the decision-making process for certain products in comparison with paid ads and/or company sales representatives. According to Ponder (2013), manufacturers and retailers should keep in mind that they are not only making or selling a product, but also they are providing a way for consumers to spend time comfortably with family and friends. Additionally, knowing the needs and demands of customers could help to improve the production and business results of companies in the wood industry (Dušak *et al.* 2017).

With regards to eco-friendly furniture, the socio-demographic elements of consumers (income, residence, age, and educational level) and family size have a significant influence on their willingness to buy this type of furniture (Chitra 2007). Vlosky *et al.* (1999), who investigated furniture consumers in the United States, and Xiaolei *et al.* (2014), who investigated customer preference for kitchen cabinets in China, ascertained that consumers preferred eco-friendly furniture. According to Anderson and Hansen (2004), consumers in the United States are willing to pay a premium for eco-friendly wood products. Pirc *et al.* (2008) determined that Croatian consumers most often view domestic furniture as high-quality and well designed, but also expensive. Motik *et al.* (2010) collected research data that was part of the advertising campaign “Wood is First”, in which potential consumers (experts) were selected from the fields of architecture, journalism, investments, design, and sales. The data obtained supported the thesis that quality is one of the reasons why customers prefer to purchase furniture from domestic (Croatian) manufacturers, but it did not support the idea that domestic wood furniture is considered well designed. Additionally, data that was collected in Slovenia and Croatia by Oblak *et al.* (2017) showed the most important criterion in the furniture purchasing decision process in Slovenia was the quality of the products, while in Croatia it was found to be the price of the product. Olšiaková *et al.* (2016) monitored the changes in consumer requirements for wood products in terms of the consumer behaviour in 2004 and 2014. They found that price was no longer the most important factor for Slovak consumers in 2014 because the rate of dissatisfaction of consumers with the price of wood products remarkably decreased by 35%, while the satisfaction with wood products quality increased by 80%. The same findings were presented in the study by Parobek *et al.* (2015), where Slovak consumers placed a lower importance on price as a criterion in their buying decision. According to Pakarinen and Asikanen (2001), the material has been identified as one of the most important attributes for solid wood furniture. This finding is in line with Scholz and Decker (2007), who found that using wood as the furniture material has a strong impact on the preferences of German consumers.

In eastern and southeastern Europe, during the transition time from a planned economy to a market economy, problems arose that were mostly related to the privatization of companies and entering highly competitive global markets (Aruna *et al.* 1997; Nabuurs and Sikkema 2001). Over the last 10 years, Slovakia and Croatia have made many economic and societal changes that either directly or indirectly impacted their furniture industries. In the areas of manufacturing and selling furniture, Slovakia and Croatia have experienced numerous important changes related to the development and application of

marketing functions. Those changes together with factors as geographic situation, development of infrastructure, qualified workforce, prices of inputs, and attempts of government towards foreign investments have made these markets more interesting for domestic and foreign investors. For both countries, membership in the European Union (EU) is important. Slovakia has been a member of the EU since 2004, whereas Croatia entered the EU in 2013. These two countries are marked by similar characteristics in terms of their size and population. Both countries cover approximately the same area (49,000 km<sup>2</sup> for Slovakia and 57,000 km<sup>2</sup> for Croatia) with a population of approximately 5.4 million inhabitants in Slovakia and 4.2 million inhabitants in Croatia (Croatian Bureau of Statistics 2016; Statistical Office of the Slovak Republic 2017). However, there is a difference in the standard of living between the two countries. In 2015, the average net monthly salary in Croatia was approximately 750 Euro (EUR), the gross domestic product (GDP) growth rate was 1.6%, and the unemployment rate was 16.3% (58.7% of which were people between 25 years and 49 years old) (Croatian Bureau of Statistics 2016). In 2015, the average net monthly salary in Slovakia was 883 EUR, the real GDP growth rate (as a percentage change from the previous year) was 3.8%, and the unemployment rate was 11.5% (Statistical Office of the Slovak Republic 2016). In 2012, the ratio of the furniture consumption in Croatia to the total EU furniture consumption was 0.4%, and that for Slovakia was 0.8% (Centre for European Policy Studies 2014). Additionally, the furniture consumption *per capita* in Croatia in 2012 reached approximately 81 EUR, while in Slovakia this value was 120 EUR. In Slovakia, sales revenue of furniture production reached 704 million Euro in 2014, while the value of exports was 535 million Euro. When looking at the construction activity of legal entities employing five or more persons, the value of work that was done on residential buildings was approximately 250 million EUR, and 10000 dwellings for permanent residence were completed in Croatia in 2014 (Croatian Bureau of Statistics 2016). In Slovakia, 15471 dwellings were completed in 2015 (Statistical Office of the Slovak Republic 2017). The recession of 2009 influenced the Slovak furniture markets directly because of circumstances in the building industry market. Wood product demand is a derived demand in terms of how it is created, *e.g.* furniture demand is derived mainly from the demand for residential and civil buildings. The number of completed dwellings decreased until 2014. This situation caused financial problems for furniture companies, and many smaller businesses had to stop production. Vetráková *et al.* (2013) stated that companies in this period were looking into any form of cost saving, such as the possibility of outsourcing. There was a boost in production in the furniture industry in 2014 when the number of residential buildings started to grow because of massive investments and the growth in this sector.

The purchasing habits and demands of consumers are continuously changing. With the purpose of developing and implementing a successful marketing strategy, a comprehensive understanding of the furniture preferences of consumers in the buying process is necessary. When considering the latest decline in the furniture industry and the continuous changes in consumer behavior, understanding the furniture preferences of customers would provide information that is beneficial to the furniture industry. A study of certain demographic categories of customers in relation to their preferences allows for a better understanding of consumer behavior. This research aimed to identify and compare furniture preferences of consumers in Slovakia and Croatia. Transnational comparison is a fruitful method. Exposure to a contrary view allows for a better understanding of national specifics. Clustering furniture consumers according to their affinity for certain materials could possibly outline useful segments in each investigated country. Furniture

manufacturers and retailers are still trying to determine the best ways to adjust their businesses to the changing demands of customers. The findings of this study could improve the knowledge of the furniture industry with regards to the differences in the preferences of consumers for furniture materials, attributes, and styles when purchasing furniture in Slovakia and Croatia. Implications are revealed in the final part of the Conclusions.

## **EXPERIMENTAL**

### **Questionnaire Design**

Based on the research objective of collecting information from potential furniture buyers, a questionnaire was developed using the existing literature and based on the previous research results of the authors. The questionnaire was distributed in the respective languages of Slovakia and Croatia and consisted of two parts. The first part contained questions regarding consumer demographic characteristics as gender, level of education (primary school, high school, and university), and age (according to five given categories). These variables were used as predictors of customer furniture preferences. The second part of the questionnaire consisted of questions that concerned the decision-making process for purchasing furniture, including consumer preferences regarding the furniture materials (solid wood, wood composites, plastic, metal, glass, and combination of materials), attributes (price, manufacturing quality, design, environmental attributes, country of origin, warranty, colour, brand, and safety), and styles (rustic, modern, futuristic, and retro). Preferences for both interior and exterior furniture were surveyed in case of furniture material as well as in case of preferences for eco-labeled furniture (coming from environmentally certified wood). The answers to the questions regarding the decision-making process were measured by the multiple-item Likert scales based on the observation of Churchill (1979) that no single item is likely to provide a perfect representation of the general idea. The item scales were reported on a scale of agreement: 1 (definitely no), 2 (somewhat no), 3 (neither yes nor no/indifferent), 4 (somewhat yes), and 5 (definitely yes). To avoid difficult or confusing questions, the questionnaire was pre-tested and revised.

### **Sampling and Data Collection**

Snowball sampling as a non-probability sampling method was used to spread the questionnaires in both countries. In Slovakia, an electronic form of the questionnaire was distributed to respondents *via* e-mails and social networks. University students were the “first movers” who started to share the questionnaire. A telephone survey using a snowball sampling method was the approach used in Croatia. This approach was selected because it was deemed the most cost-effective for surveying, ensured data collection over a wide geographic area, and had a low-cost data conversion (Dillman 2000; Zahs and Baker 2007). University students were also the “first movers” who made phone calls to the people they know, and each respondent gave them five telephone numbers. The fact that students shared their contacts caused higher share of respondents holding academic degree. The survey process began in the spring and ended in the summer of 2016.

As described above, we have used multiple mode data collection – different samples and different modes. According to De Leeuw (2005), typical fields of study using this approach include international and regional comparisons. The reasons for using this approach can vary. Different countries may have different survey traditions and/or different practical constraints. Martin (2011) also concludes that in a cross-national survey, different

countries may use different modes of data collection.

### Data Analysis

There are two commonly used approaches for market segmentation: the *a priori* approach, in which the variables and their categories are decided before the data are collected; and the *a posteriori* approach, in which the segments are formed by using cluster analysis on a set of variables, and the segments are characterized afterwards (Rao and Wang 1995; Pakarinen and Asikainen 2001). In this research, *a posteriori* approach was used to reveal “natural” existing clustering among respondents. The data were analysed using the statistical software SPSS PASW Statistics 18 (SPSS Inc., Chicago, USA) and STATISTICA 12 for MS Windows software (Dell Inc., Tulsa, USA), as well as Microsoft Excel (Microsoft EMEA, Issy-les-Moulinex, France). A frequency analysis determined the basic relationships between countries. Cross tabulation was used to determine relationships among the individual answers of one posed question and mutually among the questions. The qualitative data (demographic characteristics) was processed using Pearson’s chi squared test of independence (at an  $\alpha = 0.05$  significance level) to assess the significance of the frequency differences. Furthermore, the statistical significance of differences in preferences between both countries was investigated. The null hypothesis stated that there was no difference between the two countries at a 95% confidence interval. Because the test of normality had shown that the data were not normally distributed, a nonparametric Mann-Whitney U test for two independent samples was employed. The U test is the most powerful (or sensitive) nonparametric alternative to the t-test for independent samples.

For the cluster analysis, the k-Means and EM algorithms in the Generalized EM and k-Means Cluster Analysis module of the STATISTICA 12 software were used. The Generalized EM and k-Means Cluster Analysis module uses a modified v-fold cross validation scheme to determine the best number of clusters from the data. For the distance measure, a Squared Euclidean measure was used.

The united factor (UF) originates in the demographic data (Kaputa 2008; Kaputa and Šupin 2010) and is used in contingency analysis to divide the respondents according to the responses specific to each created subgroup. The more demographic factors linked into one UF, the more specific subgroups are created. Therefore, when using a UF, the sample size needs to be taken into consideration. In the case of small samples, subgroups with low numbers occur frequently. In this study, a triple UF composed of gender, achieved education, and age was used to identify respondents who expressed a preference for either solid wood or wood composites as a furniture material.

## RESULTS AND DISCUSSION

### Demographic Characteristics of the Consumers

In Slovakia, 453 individuals took part in the survey and responded to the questionnaire. In Croatia, of the 410 people contacted, 395 individuals responded to the survey, which presented an adjusted response rate of 96.3%.

The Slovak and Croatian respondents had a similar distribution of gender and age groups, as the differences in the frequencies were not statistically significant (Pearson’s Chi Square test at an  $\alpha = 0.05$  significance level). However, as seen in Table 1, significant differences were noted between the respondents of the two countries with regards to the frequencies of achieved education ( $\chi^2 = 36.256$ ;  $p < 0.001$ ). Additionally, the respondents

of both countries contained a high share of university educated people (32.2% in Slovakia and 51.4% in Croatia). Moreover, half of the respondents in both countries represented young people that were between 18 years and 30 years old (45.9% in Slovakia and 51.4% in Croatia).

**Table 1.** Differences in the Consumer Demographic Characteristics between Countries

Demographic Characteristic	<i>n</i>	Pearson $\chi^2$ Value	<i>df</i>	<i>p</i>
Gender	848	0.136	1	0.713
Achieved education	848	36.256	2	0.0001
Age	848	5.937	4	0.204

Statistical significance at an  $\alpha < 0.05$ ; *n* = 453 participants in Slovakia and 395 participants in Croatia; *df* = degrees of freedom

## Consumer Preferences

### *Furniture material*

Table 2 shows that the Slovak and Croatian respondents have similar preferences for interior furniture made of solid wood, wood composites (wood-based panels), and a combination of materials. Preferences for exterior furniture were similar if the furniture was made of wood composites and metal. All other preferences for the furniture material between respondents in Slovakia and Croatia were significantly different ( $\alpha = 0.05$ ).

**Table 2.** Mann-Whitney U Test of Consumer Preferences for the Furniture Material

	Material	Mann-Whitney U	<i>p</i>
Furniture for Interior Use	Wood (solid)	83711.50	0.091
	Wood composite*	86649.00	0.411
	Plastic	71053.50	<b>0.000</b>
	Metal	68820.00	<b>0.000</b>
	Glass	62936.00	<b>0.000</b>
	Combination of materials	85220.00	0.214
Furniture for Exterior Use	Wood (solid)	80208.50	<b>0.007</b>
	Wood composite*	86399.50	0.377
	Plastic	69795.00	<b>0.000</b>
	Metal	83914.00	0.109
	Glass	51665.50	<b>0.000</b>
	Combination of materials	80805.50	<b>0.012</b>

Statistical significance at an  $\alpha < 0.05$ ; *n* = 453 participants in Slovakia and 395 participants in Croatia; \*Wood composite such as plywood, particleboard, and fibreboard

Crosstabs allowed for the study of the share of preferences in cases that had statistically significant differences between countries. The original data were adjusted to present the percentage of respondents that indicated a preference for a certain kind of material (definitely yes and somewhat yes) and those who did not (somewhat no and definitely no).

The Slovaks were not as familiar with substitutive materials (to wood) in the furniture making process as compared to the Croatians. This conclusion was in line with some previous findings regarding consumer preferences for furniture in Slovakia. Paluš *et al.* (2012) noted that wood was preferred in comparison to non-wood materials. Similar

findings were found in Croatia, where Pirc *et al.* (2008) noted that in relation to other materials, most potential consumers (experts) consider wood to be a high-quality material, and in a hypothetical case of equal prices for all of the materials, the majority of the consumers would vote for wood as the most suitable material for different interior spaces. When compared to solid wood, plastic was the only substitutive material that had a higher share of Slovaks (54.1%) preferring it for exterior use. Combinations of the surveyed materials had similar levels of attractiveness to the respondents, as little over 60% of the respondents from each country preferred combinations for interior furniture. It is worthwhile to point out there were higher percentages of indifferent attitudes (neither yes nor no) toward the surveyed materials among the Croatians, where four out of six respondents had indifferent attitudes of over 27%. In contrast, the Slovaks had more decisive attitudes, especially in the cases of preferences for interior furniture made of metal and exterior furniture made of glass.

#### *Furniture attributes*

The analysis of the differences in preferences for certain furniture attributes highlighted further findings of the attitudes of end-users. Table 3 shows that the tested U values were not statistically different between the Croatian and Slovak respondents in their attitudes towards the furniture colour, manufacturing quality, design, price, and country of origin. Of the analysed furniture attributes, manufacturing quality had the greatest importance when making a purchasing decision. Over 78% of the Croatian respondents considered manufacturing quality and price to be the most important attributes. In Slovakia, the manufacturing quality had the highest percentage of importance (85%). Price was important for almost 80% of the Slovaks. The importance of price was also noted by Mohamed and Abdullah (2006), Lihra and Graf (2007), and Lihra *et al.* (2012), who reported that the furniture choice of a consumer was mostly driven by the price. Strong preferences for the design of the furniture (approximately 74% of positive answers) were also expressed by the respondents of both countries. Generally, the high shares of positive preferences for the manufacturing quality, price, and design (with the lowest shares of indifferent answers) indicated these purchase factors were of great importance for respondents in both countries. Similar findings were published in previous studies, where Kaputa and Šupín (2010) found that the most relevant purchasing decision factors in Slovakia were the manufacturing quality, price, and design of the furniture.

**Table 3.** Mann-Whitney U Test of Consumer Preferences for the Furniture Attributes

Furniture Attribute	Mann-Whitney U	<i>p</i>
Safety	78631.500	<b>0.001</b>
Warranty (condition)	79986.500	<b>0.006</b>
Brand (its image)	81289.000	<b>0.017</b>
Environmental attributes	82264.500	<b>0.036</b>
Colour (appearance)	85123.000	0.200
Manufacturing quality	85550.500	0.223
Design	86031.500	0.304
Price	86588.500	0.380
Country of origin	87554.500	0.581

Statistical significance at an  $\alpha < 0.05$ ;  $n = 453$  participants in Slovakia and 395 participants in Croatia

The Mann-Whitney U test indicated that there were significant differences at an  $\alpha$  of 0.05 between the Croatian and Slovak respondents in the preferences of the safety ( $p = 0.001$ ), warranty conditions ( $p = 0.006$ ), brand image ( $p = 0.017$ ), and environmental attributes ( $p = 0.036$ ). The safety attribute influenced the purchasing decisions of three-quarters of the Croatians (74.7%), whereas less than two-thirds of the Slovaks (61.2%) exhibited the same influence. Meanwhile, the brand attribute played only a small part in purchasing decisions (25.2% of Slovaks; 33.4% of Croatians). The findings regarding the brand attribute was in line with the results of Mohamed and Abdullah (2006), which indicated that consumers did not consider brands when purchasing wooden household furniture.

The warranty conditions were found to be an important attribute for almost two-thirds (66%) of the Slovak respondents. A slightly lower percentage (about 60%) of the Croatian respondents considered the warranty in their purchasing decisions.

Regarding the environmental attributes of furniture, the respondents from Croatia seemed to be more environmentally conscious, as 37.5% of them considered this attribute when making a purchasing decision, whereas only 29.4% of Slovaks did the same. This difference was more significant if preferences for eco-labelled furniture (coming from environmentally certified wood) were taken into account (Table 4). Almost 70% of the Croatians preferred interior furniture made of environmentally certified wood, while this was found to be the case for 46% of the Slovaks. Also, there was a higher percentage of Croatian respondents (54.9%) that preferred eco-labelled furniture for exterior use compared with the Slovak respondents (43.3%). It is necessary to point out there was a higher percentage (approximately 30%) of indifferent attitudes from respondents of both countries when assessing the environmental consciousness of the respondents.

Of the investigated attributes, the country of origin held a rather low importance. There was a higher percentage of Slovaks (38.2%) compared with the Croatians (31.6%) whose purchasing decision was influenced by this attribute. The previous study performed in Slovakia by Kaputa and Šupín (2010), where 620 respondents were surveyed, showed a lower percentage of respondents (27%) that considered the country of origin an important attribute when making furniture buying decisions.

#### *Additional factors influencing the furniture purchasing decisions*

As mentioned above, the country of origin did not play a significant role in the furniture purchasing decisions. However, a deeper insight was obtained when the preferences for domestic and foreign furniture producers were investigated. The results showed that domestic furniture was favoured by more than half of the respondents of both countries (almost 60% of Croatians and 55% of Slovaks). Moreover, half of those positive preferences were expressed categorically as the fifth degree on the Likert-type scale (definitely yes). Only a low percentage (approximately 10%) of respondents of both countries would not consider these characteristics in their purchasing decisions. The proportion of respondents of both countries with indifferent attitudes retained similar (around one-third) preferences for the country of origin. The attitudes towards domestic furniture manufacturers were in line with previous findings regarding consumer preferences for furniture in Croatia. Pirc *et al.* (2008) noted that 59% of the 315 respondents (mostly persons with a high school or university education) would purchase furniture that was made in Croatia.

Any significant difference between the Slovaks and Croatians was not proven ( $p = 0.134$ ) in the case of preferences for domestic producers. In contrast, the differences were



statistically significant ( $p = 0.002$ ) in the case of preferences for furniture from foreign producers, where more Croatians would buy foreign furniture.

**Table 4.** Mann-Whitney U Test of Preferences for Additional Furniture Characteristics

Consumer Preference	Mann-Whitney U	$p$
Preference for domestic producers	84365.500	0.134
Preference for foreign producers	79303.000	<b>0.002</b>
Preference for eco-labelled furniture for interior use	62276.500	<b>0.0001</b>
Preference for eco-labelled furniture for exterior use	76108.500	<b>0.0001</b>
Preference for modern style of furniture	79754.000	<b>0.004</b>
Preference for futuristic style of furniture	78436.500	<b>0.001</b>
Preference for retro style of furniture	62589.500	<b>0.0001</b>
Preference for rustic/antiquated style of furniture	62084.000	<b>0.0001</b>

Statistical significance at an  $\alpha < 0.05$ ;  $n = 453$  participants in Slovakia and 395 participants in Croatia

Table 4 also shows there were significant differences in preferences for furniture styles between the Slovak and Croatian respondents at an  $\alpha$  of 0.05 (rustic/antiquated style of furniture:  $p = 0.0001$ ; retro style of furniture:  $p = 0.0001$ ; futuristic style of furniture:  $p = 0.001$ ; and modern style of furniture:  $p = 0.004$ ). Despite these differences, the most preferred style in both countries was the modern style, whereas the futuristic style was the least preferred.

### Cluster Analysis of the Furniture Preferences in Croatia and Slovakia

A cluster analysis of the results enriched this study by introducing possible segments of consumers. Clusters reflected the preferences of the respondents for different (and substitutive) kinds of furniture material, as well as their preferences for given furniture attributes. The number and character of the clusters differed between the two countries. The clusters also differed within a specific country according to exterior and interior furniture.

#### *Clusters according to the preferred furniture materials in Croatia*

Cluster 1 contained over 30% of the respondents with only a positive preference for combinations of materials for interior furniture. Their preferences for other kinds of material were rather ambivalent. It was assumed that the buying decision comes from a set of factors, in which the kind of material did not play a significant role.

Clusters 2, 3, and 4 contained respondents that preferred wooden materials (solid and composite). The differences among these clusters were in their willingness to also consider other materials or combinations of materials. Cluster 2 represented “Absolute Wood Lovers” who explicitly refused other materials, while extremely preferring wood. Similarly, Cluster 3 had an extreme preference for wood (“Wood Fans”), but they also decidedly considered the combination of materials with neutral attitudes towards a certain material. The respondents of Clusters 2 and 3 together contained almost half of the total Croatian respondents. The “Moderate Wood Fans” of Cluster 4 were inclined towards wooden materials, as well as glass. Preferences for such materials may have also been an option for consumers that paid attention to the design of the interior furniture.

There were two different clusters of Croatian respondents that expressed

preferences for wooden exterior furniture (Table 5). Cluster 1 contained “Hands-Off Users” who preferred solid wood and a combination of materials for exterior furniture, while holding neutral attitudes towards all of the other material options. Cluster 2 consisted of “Pragmatic Users” who strongly preferred solid wood and at the same time strictly rejected wood composite materials. They also preferred furniture made of plastic and metal and rejected glass furniture.

**Table 5.** Clusters According to the Preferred Materials for Furniture in Croatia

Material	Interior				Exterior	
	1 “Ambivalent Consumers”	2 “Absolute Wood Lovers”	3 “Solid Wood Lovers”	4 “Moderate Wood Fans”	1 “Hands-Off Users”	2 “Pragmatic Users”
Wood (solid)	Indif.	YES!	YES!	YES	YES	YES!
Wood composite	Indif.	YES!	YES!	YES	Indif.	NO!
Plastic	NO	NO!	Indif.	Indif.	Indif.	YES
Metal	NO	NO	Indif.	NO	Indif.	YES
Glass	Indif.	NO	Indif.	YES	Indif.	NO
Combination of materials	YES	Indif.	YES!	Indif.	YES	Indif.
Number of cases	126	91	93	85	237	158
Percentage (%)	31.9	23.1	23.5	21.5	60.0	40.0

Centroids for k-means clustering – Total number of cases: 395; Preferences: NO! – definitely no, NO – somewhat no, Indif. – Indifferent, YES – somewhat yes, YES! – definitely yes

*Clusters according to attributes influencing furniture purchasing decisions in Croatia*

Cluster 1 was rather different compared with the other clusters. The respondents claimed that, except for the brand, all of the attributes influenced their purchasing decisions when buying furniture. As such, they were labelled “Aware Consumers”. Clusters 2 and 3 were almost the same, except they had an indifferent attitude towards the safety of the furniture. Respondents from those clusters had a neutral attitude to the environmental attributes, country of origin of the producer, and brand.

**Table 6.** Clusters According to the Attributes Influencing Furniture Purchasing Decisions in Croatia

Attribute	Cluster			
	1 “Aware Consumers”	2	3	4 “Brand Fans”
		“Standard Consumers”		
Price	YES!	YES!	YES	YES
Manufacturing quality	YES!	YES!	YES	Indif.
Design	YES!	YES!	YES	Indif.
Environmental attributes	YES	Indif.	Indif.	NO
Country of origin	YES	Indif.	Indif.	NO
Warranty (conditions)	YES!	YES	YES	Indif.
Colour (appearance)	YES!	YES	YES	Indif.
Brand	Indif.	Indif.	Indif.	YES
Safety	YES!	Indif.	YES	YES
Number of cases	157	86	92	60
Percentage (%)	39.7	21.8	23.3	15.2

Centroids for k-means clustering – Total number of cases: 395; Preferences: NO! – definitely no, NO – somewhat no, Indif. – Indifferent, YES – somewhat yes, YES! – definitely yes

Clusters 2 and 3 were labelled “Standard Consumers” who considered the classic attributes and exhibited the purchasing behaviour of the majority of respondents. Cluster 4 consisted of respondents who openly admitted that the environmental attributes and country of origin do not affect their purchasing decisions. The price, brand, and safety of the furniture were attributes that were most important to them. The respondents of this cluster were labelled “Brand Fans” because they were the only cluster with an affinity for the brand (Table 6).

#### *Clusters according to the preferred furniture materials in Slovakia*

Regarding interior furniture (Table 7), the Slovaks were divided into three clusters, where the first two clusters were quite similar and were indifferent towards either plastic or metal. Those respondents were labelled “Wood and Combination Fans” and preferred wood (solid, as well as composite) and its combinations with certain materials. Cluster 3 consisted of respondents who refused plastic, metal, and glass interior furniture. They were labelled “Solid Wood Lovers” with neutral attitudes towards wood composites and combinations of solid wood and wood composite materials. Glass as a material was not preferred by the respondents in any of the clusters.

Furthermore, respondents of Cluster 1 rigidly denied solid wood and wood composites as materials for exterior furniture. The cluster labelled “No Wood for Exterior” contained approximately one-third of the respondents and had preferences for plastic, metal, and combinations of those materials. They preferred materials that are practical and inexpensive, like plastic, or last for a long time, like metal. Extreme negative attitudes towards wood (either solid or composite) for exterior furniture were expressed, but the authors noticed that there were no negative responses to wood being used in interior spaces. It was assumed that the negative attitude of the Cluster 1 respondents resulted from a distrust of wood resisting exterior environmental conditions. Cluster 2 had the higher share (39%) of respondents. It was referred to as “Consumers Favoring Solid Wood” and they did not have explicit preferences for wood composites, plastic, or combinations of materials for exterior furniture.

**Table 7.** Clusters According to the Preferred Materials for Interior and Exterior Furniture in Slovakia

Material	Interior			Exterior			
	1	2	3	1	2	3	4
	"Wood and Combination Fans"		"Solid Wood Lovers"	"No Wood for Exterior"	"Consumers Favoring Solid Wood"	"Solid Wood Lovers"	"Utilitarian Consumer"
Wood (solid)	YES	YES!	YES!	NO!	YES!	YES!	YES
Wood composite	YES	YES!	Indif.	NO!	Indif.	NO!	YES
Plastic	Indif.	NO	NO!	YES	Indif.	NO!	YES
Metal	NO!	Indif.	NO	YES	NO	Indif.	Indif.
Glass	NO!	NO!	NO	NO!	NO!	NO!	NO
Combination of materials	YES	YES!	Indif.	YES	Indif.	Indif.	Indif.
Number of cases	181	151	121	154	177	55	67
Percentage (%)	40.0	33.3	26.7	34.0	39.1	12.1	14.8

Centroids for k-means clustering – Total number of cases: 453; Preferences: NO! – definitely no, NO – somewhat no, Indif. – Indifferent, YES – somewhat yes, YES! – definitely yes

Cluster 3 was referred to as "Solid Wood Lovers", and contained consumers who stringently refused all of the alternatives to wood, except for metal. The cluster contained about 12% of the total number of Slovak respondents. The Solid Wood Lovers also pragmatically considered metal and combinations of metal and solid wood and were considered a cluster of consumers that were looking for attractive, aesthetic, and valuable products. The respondents from Cluster 4 preferred all wood-based and plastic furniture for exterior use with any stringent attitude (definitely yes or no) towards all of the materials. Cluster 4 was labelled "Utilitarian Consumers" and the only negative attitude these respondents had was towards glass (Table 7).

#### *Clusters according to attributes influencing furniture purchasing decisions in Slovakia*

Table 8 presents two groups of Slovak respondents (with similar frequency distribution) clustered according to their preferences for attributes that influenced their purchasing decisions. In both clusters, the respondents had a neutral attitude towards the environmental attributes of furniture. Cluster 1 was referred to as "Not too Brand Addicted", and the respondents claimed that the furniture brand does not influence their purchasing decisions. Moreover, this cluster contained the only negative attitude that was expressed. Cluster 2 consisted of "Pragmatic Consumers", for whom the price, manufacturing quality, design, warranty, and safety were important attributes. The country of origin was also taken into consideration, while they were indifferent to the furniture brand.

**Table 8.** Clusters According to the Furniture Attributes Influencing Furniture Purchasing Decisions in Slovakia

Attribute	Cluster	
	1 "Not too Brand Addicted"	2 "Pragmatic Consumers"
Price	YES!	YES!
Manufacturing quality	YES!	YES!
Design	YES	YES!
Environmental attributes	Indif.	Indif.
Country of origin	Indif.	YES
Warranty (conditions)	YES	YES!
Colour (appearance)	YES!	YES
Brand	NO	Indif.
Safety	YES	YES!
Number of cases	230	223
Percentage (%)	50.8	49.2

Centroids for k-means clustering – Total number of cases: 453; Preferences: NO! – definitely no, NO – somewhat no, Indif. – Indifferent, YES – somewhat yes, YES! – definitely yes

The Slovak respondents of both clusters had indifferent attitudes towards the environmental attributes of the furniture. This finding resulted from the fact that a cluster analysis operates using the mode as the statistical measure. Such a finding (a great share of indifferent attitudes) also resulted from the frequency analysis. Similar results concerning the environmental awareness of Slovak consumers were reported by Kaputa (2013) and Kaputa and Šupín (2010). However, there is still a segment of Slovaks who consider environmental attributes in their purchasing decisions, although at a considerably lower percent compared with the Croatians (also proven by the Mann-Whitney U test).

### Devotees of Wood

After analysing the data from the contingency tables, the respondents who clearly expressed preferences for wood as a furniture material were identified. They were labelled as "Devotees (of wood)" and had a number of respondents ( $n$ ) equal to or higher than 10. All of the Devotees expressed a positive response to either solid wood or wood composites as the furniture material. Table 9 categorizes the Devotees according to the relevant demographics. Almost 50% of the Croatian respondents preferred solid wood and wood composites as the material for interior furniture, which was greater compared with the Slovak respondents (38%). In the case of exterior furniture, the preferences for wood were considerably lower (27.6% of Slovaks, 20.8% of Croatians).

**Table 9.** Demographics of the Respondents Preferring Wooden Furniture (Devotees of wood)

Demographic Category	Slovakia			Croatia		
	Frequency in the Sample (n = 453)	Interior Use	Exterior Use	Frequency in the Sample (n = 395)	Interior Use	Exterior Use
		Devotees as % of the Respective Category (n = 172)	Devotees as % of the Respective Category (n = 94)		Devotees as % of the Respective Category (n = 195)	Devotees as % of the Respective Category (n = 109)
<b>GENDER</b>						
Men	195	33.85	20.00	175	57.14	30.29
Women	258	41.09	21.32	220	43.18	25.45
Sum	453	37.97	20.75	395	49.37	27.59
<b>ACHIEVED EDUCATION</b>						
Primary school	20	35.00	25.00	23	47.83	8.70
High school	287	34.49	17.07	169	50.30	29.59
University	146	45.21	27.40	203	48.77	28.08
Sum	453	37.97	20.75	395	49.37	27.59
<b>AGE</b>						
18 years to 30 years	208	34.13	18.75	203	45.32	32.02
31 years to 40 years	94	40.43	19.15	63	57.14	39.68
41 years to 50 years	80	41.25	16.25	76	53.95	15.79
51 years to 60 years	42	45.24	40.48	36	47.22	13.89
Over 61 years	29	37.93	24.14	17	52.94	11.76
Sum	453	37.97	20.75	395	49.37	27.59

**Table 10.** Subgroups of Devotees According to their Preferences for Wooden Interior Furniture

Country	Subgroup	Devotees Percentage (%)	Cumulative Percentage (%)
Slovakia (n = 172)	Women - High school - 18 years to 30 years	16.28	16.28
	Women - University - 18 years to 30 years	12.79	29.07
	Women - High school - 41 years to 50 years	8.14	37.21
	Men - High school - 18 years to 30 years	6.98	44.19
	Men - High school - 31 years to 40 years	6.40	50.58
	Men - University - 31 years to 40 years	6.40	56.98
	Men - High school - 51 years to 60 years	5.81	62.79
	Women - University - 31 years to 40 years	5.81	68.60
Croatia (n = 195)	Men - University - 18 years to 30 years	16.92	16.92
	Women - University - 18 years to 30 years	12.31	29.23
	Women - High school - 18 years to 30 years	9.74	38.97
	Men - High school - 18 years to 30 years	8.21	47.18
	Women - High school - 41 years to 50 years	6.15	53.33
	Men - High school - 31 years to 40 years	5.64	58.97

Introduced subgroups had frequencies that were equal to or higher than 10

Additionally, the Devotees were divided into subgroups according to their gender, achieved education, and age, and the combination of these three demographic categories (with a maximum of 27 combinations), which is shown in Tables 10 and 11. The combination of the demographic categories was done using the UF (United Factor).

Table 10 shows that 29% of the Slovak Devotees were women with a high school and university education between the ages of 18 years and 30 years. When combined with the subgroup of high school educated women between 41 years and 50 years old, these three subgroups contained over 37% of the total Slovak Devotees. Men were less represented, and the subgroups of high school and university educated respondents between 18 years and 40 years old had the highest amount of men. Approximately 59% of the Croatian Devotees (6 subgroups shown in Table 10) were mostly men with high school and university education between 18 years and 30 years old (25% of the 6 selected subgroups). Women that had a high school and university education between 18 years to 30 years old (22%) were most present in the Croatian Devotees subgroups.

**Table 11.** Subgroups of Devotees of Wood According to their Preferences for Wooden Exterior Furniture

Country	Subgroup	Devotees Percentage (%)	Cumulative Percentage (%)
Slovakia (n = 94)	Women - High school - 18 years to 30 years	17.02	17.02
	Women - University - 18 years to 30 years	13.83	30.85
Croatia (n = 109)	Men - University - 18 years to 30 years	18.35	18.35
	Women - University - 18 years to 30 years	17.43	35.78
	Women - High school - 18 years to 30 years	13.76	49.54
	Men - High school - 18 years to 30 years	10.09	59.63

Introduced subgroups had frequencies that were equal to or higher than 10

Table 9 shows that almost 28% of the Croatian respondents preferred wooden materials (solid wood and wood composite) for exterior furniture and only approximately 21% of the Slovak respondents had the same attitude. The relevant subgroups of the Slovak Devotees that were high school and university educated women between 18 years and 30 years old present up to 31% of the total Slovak Devotees (Table 11). Approximately 60% of the Croatian Devotees consisted of young men and women (18 years to 30 years old) with a high school and university education.

## CONCLUSIONS

1. The Slovak and Croatian respondents had different preferences for furniture materials, as well as for the factors that influence their purchasing decisions when buying interior and exterior furniture.
2. The significant differences were in their preferences for the safety, brand, warranty, and environmental furniture attributes. The brand was not among the most relevant purchasing decision factors of the analysed furniture markets. This was an interesting finding compared with the final consumers of other products, where the brand is a

crucial marketing strategy for many companies. The nonparametric analysis of furniture attributes showed that the country of origin, price, design, manufacturing quality, and colour of the furniture all have similar influences on the purchasing decision of consumers of both countries.

3. The attitudes toward the country of origin provided general information on the preferences of the consumers. Compared with the results of similar studies, it was assumed there was a slightly growing interest among consumers in the country of origin as a factor that influences their buying decisions. Although the country of origin did not play a significant role in the purchasing decision, the additional questions concerning their preferences for either domestic or foreign furniture manufacturers brought another perspective into the issue. The direct request to choose between domestic and foreign manufacturers showed a clear inclination towards domestic producers by the respondents of both countries.
4. The environmental attributes of furniture had a relatively lower impact on buying decisions. These findings showed that “green” consumers are more prevalent in the Croatian market. The high percentage of indifferent attitudes expressed, approximately one-third of the respondents in both countries, indicated there is a fair number of consumers who do not consider the environmental issues of furniture production. This fact could be taken as a challenge by furniture manufacturers and other stakeholders to promote the importance of environmental attributes. Regarding the environmental consciousness of the respondents of both countries, the authors theorize that appealing to “green” consumers and consumers that express an indifferent attitude towards the environmental attributes of furniture could create an interesting potential for a market with eco-labelled furniture products. This presumption could be supported with the similar findings from the other Central-European consumers’ studies (Maťová and Kaputa 2017; Kaputa and Šupín 2010; Koszewska *et al.* 2017). Moreover, there are challenges for furniture manufacturers because of Green Growth and Circular Economy measures and legislative proposals recently adopted in EU countries. The main areas are connected to the waste management policy (*e.g.* waste prevention programme, changes in waste hierarchy), designing of products, setting-up of production processes, and utilisation of resources.
5. Overall, the cluster analysis brought a deeper insight into the preferences of consumers and outlined the possible segmentation according to their affinity towards different kinds of material used for interior and exterior furniture. Considering the number of clusters in both countries that preferred solid wood (11 out of 13 clusters), it was found that there is a strong preference for wood as a furniture material.
6. Wood was widely preferred among the clusters of Croatian and Slovak respondents. Furthermore, it was concluded that a combination of materials was often considered when buying furniture because none of the clusters had a negative attitude towards it. In the case of exterior furniture, climate could be a contributing factor in the preference difference between Slovaks and Croatians. A large area of Croatia is situated along the seaside, where mild winters and hot summers are typical, while in Slovakia fairly cold winters and warm summers are more typical. Considering these facts and cultural differences allowed the authors to better understand the differences in the preferences for furniture materials and attributes.
7. The cluster analysis showed that price had a crucial importance within the surveyed



furniture attributes that influenced the purchasing decisions of the Slovak and Croatian respondents. Price was followed by manufacturing quality, design, warranty, safety, and colour as the furniture attributes that were most important in five out of six clusters.

8. The contingency analysis helped to identify the respondents with preferences for wooden materials, either solid wood or wood composites. Studying the respective percentages in Slovakia and Croatia of those that preferred wooden furniture (Devotees), it was concluded that most of such consumers are younger (18 years to 30 years old) women and men that are high school or university educated. A limitation of this claim resides in the distribution of the demographic categories of the analysed respondents.
9. The findings of this study have potential to influence marketing activities of furniture companies in the whole range. Starting from product policy (*e.g.* design, furniture style), to marketing communication (*e.g.* the structure of information printed on package or information which are essential for effective marketing communication – online even offline). The whole product can communicate the firm's core values, firm's interests in environmental or social platforms, and basic benefits for the customer (through design, material, style, manufacturing quality, used packaging, *etc.*). The product cannot "talk" for itself, but its design, style, used materials, and manufacturing quality can reach the right costumers. The furniture companies could use the findings to create specific offers for different consumers' segments according to their preferences. Also, to create a very distinguishable offer from their competitors. If companies know when and what to communicate, and how to use information gathered from market research, it could help them to improve acting at the market and build inimitable competitive advantages.
10. The study design limitation is given by non-probability sampling technique (Snowball technique). The major disadvantage of this method is that such a sample does not represent the population. Therefore, the results from research cannot be used in generalisations pertaining to the entire population of Slovakia and Croatia. The results only represent the opinion of the surveyed respondents. Another limitation was that sample from Croatia contained a high share of university educated people (32.2% in Slovakia and 51.4% in Croatia) and approximately half of the respondents in both samples were young people (18 years - 30 years). Nevertheless, these results can be used as a base for research hypotheses in a further research, and these hypotheses can be verified on a sample from probability sampling. This study could be viewed as an initial study that revealed possible consumer segments in two countries and differences in their consumer preferences for wooden furniture.

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