Equilibrium. Quarterly Journal of Economics and Economic Policy
Volume 17 Issue 1 March 2022
p-ISSN 1689-765X, e-ISSN 2353-3293
www.economic-policy.pl

ORIGINAL ARTICLE

Citation: Savov, R., & Szarková, X. (2022). Craft beer revolution: formation of a new segment in Slovakia. *Equilibrium. Quarterly Journal of Economics and Economic Policy, 17*(1), 225–246. doi: 10.24136/eq.2022.009

Contact to corresponding author: Radovan Savov, radovan.savov@uniag.sk

Article history: Received: 22.02.2021; Accepted: 15.02.2022; Published online: 25.03.2022

Radovan Savov
Slovak University of Agriculture in Nitra, Slovakia
orcid.org/0000-0002-4882-0978

Xénia Szarková
Slovak University of Agriculture in Nitra, Slovakia
orcid.org/0000-0002-8263-6170

Craft beer revolution: formation of a new segment in Slovakia

JEL Classification: *L66; M31; M11*

Keywords: *craft beer; customers; segment; socio-demographic characteristics; brewing industry*

Abstract

Research background: Globalization has significantly affected the brewing sector worldwide during the last three decades. The industry consolidation and many acquisitions led to a reduced number of breweries and consequently to the homogenization of beer. It was an important factor affecting the significant decline in beer consumption in the world. However, over the years, this negative phenomenon also brought a new wave — the development of craft breweries, and resulted in the formation of a new segment with specific preferences in the market.
Purpose of the article: As a result of the craft beer revolution in the world and the wider offer on the beer market, customer preferences changed, and a new segment was subsequently formatted. In the past, lagers were the preferred choice, but due to the new wider range of beers offered in the market, they are about to lean towards other types of beer. Therefore, the purpose of this paper is to identify a new segment of craft beer consumers based on characteristics such as age, gender, education, income, residence, marital status, work, and leisure activities.
Methods: For data collection, a questionnaire was used as a tool and, therefore, we analyzed the answers of 685 respondents from Slovakia. The questionnaire is evaluated through dependency analysis using nonparametric methods (Kruskal-Wallis Test, Mann-Whitney Test) to identify the differences between groups of customers and to describe the characteristics of a typical consumer of craft beer.
Findings & value added: The craft beer revolution in the world brought a formation of a new segment, which considers the taste and quality more compared to price. Our research has con-

firmed that this segment consists of highly educated men (26–40 years old), with above average income. However, it is important for beer producers to know this segment more to meet its requirements. Nevertheless, deeper studies of this segment were missing. Therefore, our research was focused on other parameters of the segment and according to our findings, these consumers are from bigger cities, working more mentally, and doing sports in leisure time.

Introduction

In the world, the brewing industry has gone through several changes in recent years. While globalization has brought many positives in terms of the greater potential of capital use, on other hand, local breweries were taken over by multinationals. Other breweries were forced to stop the production due to their inability to compete with multinational giants. Over time, there was a significant concentration of the industry worldwide, which was dominated by few companies (AB InBev Heineken, China Resources Snow Breweries, Carlsberg, Molson). Of course, their main priority was to increase profits and, therefore, costs were reduced mainly by optimizing the portfolio from which local brands were excluded. Thus, mostly unified beers, which did not differ significantly, remained on the beer supply side. This was also one of the several reasons why beer consumption in the world decreased significantly and should be named as a global trend observed in many countries that created a good opportunity for craft beer revolution. Hatred against 'Eurobeer' has created a new opportunity in the market. New small breweries were established, and they started to produce specific products, which were expressively different from those of multinational companies. Small breweries began to produce beer with soul, experience, and own story, which greatly stimulated the interest of beer drinkers.

Craft breweries thus found a market niche. Thanks to these craft breweries, there was a slight increase in beer consumption. Other social and economic positives of the development of microbreweries can be seen mainly in the form of excise duties, which are paid to the state budget. Furthermore, other positive consequences were created, especially in the development of regions through the promotion of tourism and job creation directly in breweries, but also indirectly in supply and customer chains. The correct path of craft breweries is demonstrated by the fact that many multinational companies have started to diversify their product portfolio and have started to produce other beer types. There have even been several acquisitions around the world, where small craft breweries have been bought by multinational concerns, but this time to preserve the original brand while using local beer recipes.

It follows from the above that the segment of craft beer customers plays an important role in the brewing industry. Its origin is also determined by better economic conditions since based on the increasing revenues, beer drinkers are willing to pay a significantly higher price for such a product. This created a new market segment of customers who started to prefer beers of diverse flavours. For this reason, it is necessary to know this segment better so that owners and managers of craft breweries can adapt the business strategy to achieve better economic results. Therefore, the contribution focuses on the identification of the resulting segment of the beer market. Our research follows on several studies in the world where the purpose is focused on researching the craft beer segment, especially in terms of age, gender, income and education (Murray & O´Neill, 2012; Malone & Lusk, 2018; Gómez-Corona *et al*., 2016; Jaeger *et al*., 2017; Aquilani *et al*., 2015). However, the study from the Central European environment is significantly absent, despite the fact that the countries of Central Europe are among the major consumers of beer. We consider this to be a significant gap in the current scientific literature. Based on the results of our research, it will be possible to compare in further research individual segments across countries, regions in Europe, and the world. All the more so as our research is expanded in other studies to include other segment characteristics such as residence, marital status, type of work, free time activities, and preference of taste, brand or price.

This paper aims to describe the basic characteristics of the segment of craft beer customers based on the results obtained from the survey research. We used original primary data from consumers for the analysis and identification of the key elements of the segment. The results were then statistically evaluated based on non-parametric tests, by which we verified the statistical significance of individual factors resulting from customer preferences regarding craft beer. In other scientific studies, the most common description of the segment is based on age, gender, and income. Additionally, as part of our research, we also tested other factors such as education, residence, marital status, type of work, leisure activities and, at the same time, we examined what factor is the most important when the customer selects a beer type.

In the following sections of the paper, the relevant literature focuses on the changes in the brewing sector, craft beer revolution, and characteristics of the beer consumer segment. In the methodology, the used methods describe the nature and items of the questionnaire survey, as well as the description of the methods applied to identify the statistically significant differences in respondents' attitudes according to criteria such as age, gender, income, education, residence, marital status, type of work, leisure activities.

In the results section, we point to the statistically significant differences in responses, through which the segment of consumers preferring craft beer can be described. During the research, we came across with similar studies, therefore we compare the results with them in the discussion section. In the conclusion section, we summarize our results where the main characteristics of the segment are presented with an insight into their use in practice.

Literature review

Alcohol and its consumption belong to popular topics in many scientific studies. Researchers look at alcohol consumption from multiple angles. They focus on psychological aspects (Brewer *et al*., 2017, Kirouac & Witkiewitz, 2017), sensory analysis (Viejo *et al*., 2019, Medoro *et al.,* 2016), economic and market aspects (Colen & Swinnen, 2016, Morgan *et al.,* 2020, Madsen & Wu, 2016). The brewing industry in the world has changed a lot in the last decades. There were some similarities noticed in the development of European beer industries, but structural differences among countries remained considerable in past years (Brouwer, 1981). Massive industrial production stimulated demand and lowered the cost of beer. The needs of customers were unified and satisfied by standardized products supplied by brewing concerns (Stack *et al*., 2016). It led to a concentration in the global beer market structure and was named as an important characteristic feature in the brewing sector in the last decades. Some results of previous studies have showed high concentration both in global production and trade (Török *et al*., 2020). Globalization brought positive changes that led to higher competition, increased productivity, better availability of sources, and also well-known world beer brands. On the other side, pressure on economic results had driven to lower costs, and therefore many local breweries stopped their production due to the impossible mission to be a rival of the big corporations in the industry. The brewing industry is an example where the long trend toward consolidation of production uniform beer and undifferentiated products was halted and then reversed (Clemons *et al*., 2006). Recently, many small independent breweries have been purchased by large corporations to get a market share of the growing and profitable niche market in craft beer (Morgan *et al*., 2020).

In Slovakia, the craft beer revolution began after 2009. Whereas in 2010, there were only 11 small breweries, nowadays there are more than 90 and most of them are craft breweries (Wojtyra *et al*., 2020). There are several drivers of craft beer movements in Slovakia, such as good investment opportunities, good availability of technology and know-how, easy access to inputs, government support for craft brewery start-ups, and cooperation among craft brewers (Pokrivčák *et al*., 2018). Similar rapid development was recorded also in other countries (Acitelli & Magee, 2017; Patterson & Hoalst-Pullen, 2014; Garavaglia & Swinnen, 2017). The emergence of craft producers has countered firm concentration and the homogenization of alcoholic beverages (Anderson *et al*., 2018). The beer brewed in big corporations is homogeneous and not different at all, so it is one of the big reasons for the success of craft beer (Tremblay & Tremblay, 2011). Other factors such as changes in demand conditions and regulatory environment have created some space on the local markets for craft beer development. (Tremblay *et al*., 2005). The craft beer revolution is powered by increasing personal income. A survey of beer drinkers found that high-income consumers are more likely to buy craft beer (Pokrivčák *et al*., 2019).

The rapidly emerging number of new craft breweries is also called hyper-differentiation phenomenon, which is defined as the high increasing importance of being different on the market. It led to reducing the importance of prices as the main factor behind customers´ decision to buy or not to buy beer (Clemons *et al*., 2006). We want to confirm this fact in our paper, because taste is the moving power for craft drinkers since they expect to find flavors, bitterness, texture characteristics, and sparkle (Mastanjević *et al*., 2019). Customers declare high interest in trying new products, especially with new flavors (Aquilani *et al*., 2015). In another research (Sester *et al*., 2013), the main motivation factors to drink craft beer seem to be the quest for authenticity, desire for more knowledge, new taste experience, and not to be the mainstream of beer consumption. Craft beer drinkers are a growing segment that has been formatted in the beverage sector and are particularly interesting in craft beers with different types, flavors, aroma, rather than world-known industrial beer brands (Carvalho *et al*., 2018). Some results of previous researches show that the craft beer segment is growing with different buying habits and behaviors compared to traditional beer consumers (Gómez-Corona *et al*., 2016). Some researchers claimed that this segment includes almost 35 % of beer consumers compared to industrial beer with 41% and occasional industrial with 24%. Men who are 25–35 years with a high-income level are named as the segment of craft beer (Sester *et al*., 2013). What is very positive for the economy of each region, craft beer helps to develop also tourism, so-called beer tourism which is pulled by craft beer experience, enjoyment, socialization, and beer consumption (Kraftchick *et al*., 2014).

The craft beer revolution is a phenomenon that has brought new beers, new tastes and a new segment to the brewing industry. The importance of price as the main factor in the purchasing decision has decreased significantly (Jaeger *et al.*, 2019). Due to the growing importance of market differences, many small local breweries have found a place in the market, trying to satisfy the changed preferences and requirements of consumers. However, the new segment has its specifics and, therefore, it is necessary to know it as well as possible. There are several studies in the world that examine the craft beer segment in terms of age, gender, and income (Gómez-Corona *et al.*, 2016; Aquilani *et al.*, 2015; Murray & O´Neill, 2012; Malone & Lusk, 2018). However, knowledge of the craft beer segment in Central Europe is severely limited. Other key characteristics that are missing from current research results need to be added for better knowledge. Therefore, our research extends these characteristics by other parameters — residence, marital status, type of work, free time activities. So far, we have not registered any study that would look at the craft beer segment from such a wide range. The results can thus serve as a motivation for further similar research with a focus on expanding other parameters of the craft beer segment. At the same time, our results can help us to examine the differences between the segments across the various regions of the world.

Research methods

The research design, structure of data in the research, and methods used in this paper are explained in the following section. Even though new trends are emerging in the brewing industry, the knowledge of customer segments is insufficient. The paper is focusing on the identification of the new segment in the beer market. This segment prefers craft beer over industrial beer. In our contribution, we would like to identify and describe this segment through the basic characteristics. The main purpose of the paper is to determine some demographic attributes and some main habits of craft beer drinkers. We would like to identify the main decision factor which influences craft beer consumers to buy this product. For meeting the objective, a questionnaire was constructed and distributed in electronic form. It includes basic characteristics of respondents (age, gender, level of education, income, residence, and marital status), some special attributes (type of work, free time activities, factors of the decision to buy craft beer), and items to declare respondents´ attitudes to craft and industrial beer (binary questions and Likert scale questions). The preference of craft beer was examined by binary questions (whether they prefer craft or industrial beer), however, we want to confirm their response also according to items focused on attitudes to domestic/foreign/industrial/craft beer. Data obtaining was realized between the period of February 2019 — January 2020 and 685 respondents took part in this research in Slovakia. In Table 1, we present the operationalization of variables for better transparency in the text.

We set up the hypothesis that the craft beer consumer segment differs from the traditional beer segment and has different socio-demographic characteristics. Segmentation helps to take into account the diversity of the product as well as the diversity of the segment concerned (Alves *et al*., 2008; Varela *et al.*, 2014). The uniqueness of the product helps to create a product of excellence that ensures the success of the market (Favalli *et al.*, 2013). Customer segmentation is a recommended and effective strategy that recognizes heterogeneity between individuals and prevents the fallacy of the average consumer (Köster, 2009).

We want to answer the following questions in our research. Is there a significant difference in drinking craft between respondents according to selected factors — age, gender, level of education, income, residence, marital status? What do these customers in the craft segment prefer to do in their leisure time? Do they do physical work as their job? What is the most important factor when the customer selects beer? We also searched what the awareness of craft beer among respondents is and if it differs among the selected groups in each criterion. The questionnaire is evaluated through dependency analysis using nonparametric methods (The Kruskal-Wallis Test, The Mann-Whitney Test). According to Munk *et al.* (2014), the Mann-Whitney test (Formula 1) is used to compare differences between two independent groups. In our research, it was used to find the differences between groups according to following variables: gender, income, residence, type of work, and free time activities. The Kruskal-Wallis test (formula 2) is an extension of the Mann-Whitney test to three or more samples (Munk *et al*., 2014). In our case, it was used to identify differences between groups according to variables age, education, marital status, and decision factors to buy craft beer. Both tests are used to determine whether a statistically significant difference exists between the medians of independent groups. The tests answer the question of whether the differences in the values of the variable in groups are only random (the factor does not depend on the factor) or are statistically significant (variable depends on factor). The null hypothesis assumes that the distribution of the observed variable in all groups is identical. This hypothesis was tested at the 5% level of significance. If the significance value is greater than 0.05, the null hypothesis cannot be rejected with 95% confidence. This means that the observed samples were selected from the same baseline. If less than or equal to 0.05, the null hypothesis is with 95% confidence rejects and alternative hypothesis is accepted.

$$U_x = mn + \frac{m(m+1)}{2} - R_x$$
$$U_y = mn + \frac{n(n+1)}{2} - R_y \quad (1)$$
$$U = \min\left(U_x, U_y\right)$$

where:

U	Mann-Whitney statistic;
M	number of samples drawn from first group;
n	number of samples drawn from second group;
R_x, R_y	sum of ranks attributed to groups.

$$H = \left(\frac{12}{N(N+1)} \sum_{j=1}^{k} \frac{R_j^2}{n_j}\right) - 3(N+1 \quad (2)$$

where:

N	total observations in all groups (total sample size);
k	number of groups;
n_j	sample size for jth group;
R_j	sum of ranks of jth group.

The reliability of the questionnaire was verified by using Cronbach´s alpha. Cronbach´s alpha reached the level of 0.724 for items of the questionnaire. The values of Cronbach´s alpha are higher than 0.7 that shows sufficient scale consistency.

Results

Slovakia is a country with a long tradition of drinking beer with a focus on drinking lagers as the most popular type of beer. Beers were usually produced by regional breweries. After the velvet revolution, some of them were closed, because they were not able to compete with large multinational companies like Heineken and SAB. They entered the Slovak market, bought the biggest breweries and the market became concentrated. About 90% of the market belongs to these two giants. Privatization was followed by the globalization of the brewing industry after 1990, which brought standardized beers with better economic results for producers but smaller diversity for customers. It was one important reason why there has been a reduction in customer satisfaction and consumption of beer has declined dramatically. After 2009, when the Association of Small Independent Breweries in Slovakia was established, some businessmen saw the opportunity to start their own small breweries and tried to fill the niche on the market. They started to produce craft beer with a characteristic taste and beer supply became more differentiated. New trends in beer production have transferred from abroad to small breweries, such as manufacturing of other beer types, like IPA, stouts, or porter. Craft beer has become more and more popular. Therefore, our research is focused on this segment — craft beer drinkers — which is still growing, but is still not known enough in our conditions.

Our research shows that more than half of the respondents (51%) have awareness about craft beer. Of the total, 35% of respondents answered they drink craft beer, which can be considered as a large proportion. Craft beer from domestic breweries dominated the preferences, followed by industrial beer also from domestic breweries. This was followed by craft beer from abroad and foreign industrial beer in the last position. Thus, the local aspect of where beer comes from also plays an important role when customers buy the beer. This creates a good prerequisite for the further development of the small breweries in Slovakia. In our research, we focused on some important characteristics which should be used to describe a new segment of the beer market.

Firstly, we searched whether there is a significant difference in drinking craft beer according to age. In the group of 18–25, 31% showed the tendency to drink craft beer, which is in contrast with older groups of respondents, where 41% (in the group 26–40) resp. 39% (in the group 41 and more) stated that they drink craft beer. As we can see from the results presented in Table 2, a significant difference among the group of respondents was revealed in a comparison of preferences in drinking domestic or foreign beer (highlighted in the table). People in the group of 26–40 years old (according to means of variables and results of post hoc tests) have a higher preference to drink foreign beer more than other aged groups. It does not matter if it is a craft or industrial beer. We consider that the main reason is the fact that these people travel a lot and, therefore, have more possibilities to try foreign beers and they also have a good experience with them.

Gender was the second characteristic we were focusing on, whether there are any differences among the respondents. Our results have showed that in the group of men 48% showed a positive attitude to drink craft compared to 26% in the group of women. As stands in Table 3, we have found significant differences in all variables. From the means of each group, we can state that men have better awareness about craft beer and prefer drinking craft compared to women. These results were confirmed also in other variables (DIB, FIB, DCB, FCB), but it shows us the higher popularity of beer by men in general, which was the expected result.

We thought that the level of education should play an important role in knowing and drinking craft beer as well. More highly educated people have more knowledge and insights. Oftentimes they have more opportunities to try something new that they will love later. Our presumption was right. Higher educated people have a bigger tendency (46% of these respondents showed this tendency) to drink craft beer than people with primary (only 11%) and secondary (only 26%) education levels. These people have also better awareness about craft beer (see table 4).

The income of respondents was set as another factor searched to identify the segment of craft beer. It is well known that craft beer is much more expensive than industrial beer and therefore we wanted to verify this fact. From the group of people who earn above average, 46% tend to drink craft compared to 28% in the group of people with below-average income. In our research, we can see that there is a significant difference between respondents whose monthly income is above average (note: according to national statistics it was average monthly income in Slovakia on the level 1,092€) compared to people who earn below-average income per month (see Table 5). We can state that people with higher income can spend more money on more expensive beer. This result was also confirmed when we used scaled questions focused on domestic and foreign craft beer. On the other side, there is no difference between these groups in drinking industrial beer.

People from bigger cities usually adopt fashionable trends in consumption more often than people in villages or small cities. Therefore, the residence of respondents was determined as another factor of drinking craft beer in our research. As we can see in Table 6, this fact was confirmed. A significant difference was found between respondents from bigger cities compared to inhabitants of smaller cities or villages. People living in bigger cities prefer drinking craft beer (42%) compared to people from small cities (28%). This result was also confirmed in the other two variables, where we searched the difference on scaled questions concerned with domestic and foreign craft beer. Better availability to buy craft beer in bigger cities, where special beer shops are located, can be named as the main reason for this fact, according to our opinion.

In the next part of our research, we provided the test of whether marital status is a significant factor in drinking craft beer. We wanted to verify the presumption that single people have a higher tendency to drink craft beer. This presumption was refused as showed in Table 7. No significant difference was found between the group of single (34% showed positive attitude towards craft), married (38%), and divorced (35%) respondents. All these groups have approximately the same awareness and tendency to drink craft beer.

Type of work is another parameter in our research that influences drinking craft beer. We divided respondents into two groups. The first one was people who work manually and do physical work as a job. The second group is people who do mental work as a job. We have found a significant difference in drinking craft between these two groups (see Table 8). A higher tendency to drink craft is in the group of people who work mentally (41%) compared to people who do physical work (28%).

We wanted to know what craft beer drinkers do in their leisure time; whether there is any significant difference between respondents who were divided into two groups. The first group is characterized as a group of people who prefer spending their free time in a passive way — for example watching TV, reading books, going to the cinema and theatre. The second group is characterized as a group of people who spent their free time actively. They usually do sports, travel or go for walks in nature. As we can see in Table 9, there is a significant difference between these groups in craft beer awareness and drinking. People who prefer active free time activities have a higher tendency to drink craft (39%) compared to people who prefer passive free time activities (26%).

The last research question was focused on what is the key factor when people are selecting a beer. The respondents had three possibilities to choose from — price, taste, or brand. Almost 40% of respondents who drink craft answered that taste is the key factor when they decide to buy beer. We found a significant difference between respondents who preferred taste as the dominant factor. According to our results (see Table 10), people who preferred taste as the key factor for buying beer have better craft beer awareness and prefer to drink craft beer.

Discussion

Although beer consumer segmentation is an effective tool for better managing customer relationships, there is only a limited number of scientific studies dealing with it. Segment analysis offers different profiles of beer consumers and it is crucial for brewers to understand and meet the customer requirements much better. For this reason, it is essential to know the basic characteristics of the new segment that has evolved — craft beer consumers. Thus, Calvo-Porral *et al.* (2017) present the need to know the beer segments and beer consumers cannot be seen as a homogenous consumer group. The need to explore the craft beer segment is also highlighted by Aquilani *et al.* (2015), who sees this segment as a new trend in the brewing industry as consumers look for beers with diverse flavors. Gómez-Corona *et al.* (2016) divided beer drinkers into two main segments: 1) industrial beer drinkers; 2) craft beer drinkers. For this reason, it was also our motive to further describe the craft beer segment, so that managers in breweries can better respond to the new trend while fulfilling customer expectations. We also added an aspect of domestic or foreign beer to this categorization and wanted to find out their preferences in individual categories of customers also according to the origin of the beer.

The craft beer segment seeks novelty, unique products (Malone & Lusk, 2018; Rivaroli *et al.*, 2018) and differs from mainstream drinkers based on several typical attributes (Jaeger *et al.*, 2020). Most researchers who focus on the description of the craft beer segment point to the relationship between craft consumption and income (Carvalho *et al.*, 2018, Gómez-Corona *et al.*, 2016). As well, in our case, we have come to the same conclusion that people consuming craft beer are characterized by an above average income. Regarding other socio-demographic characteristics, Carbone and Quici (2020) did not identify any impact on craft beer consumption. In contrast to this research, we identified a statistically significant impact of gender, education, residence on craft consumption. Similar results as we have found have been reached as well. Regarding gender, some previous studies were published (Malone & Lusk, 2018; Gómez-Corona *et al.*, 2016; Jaeger *et al.*, 2017), where it is stated that craft consumers are mostly male. We didn´t find a statistically significant difference as far as age goes, but in other studies (Aquilani *et al.*, 2015; Murray & O´Neill, 2012) the results show that craft beer drinkers are younger than traditional beer consumers. Regarding age, we found interesting findings as far as the origin of beer goes. People between 26-40 years have a higher tendency to drink foreign beer compared to other aged groups, which was not examined in other studies. Regarding the level of education, previous studies (Murray & O´Neill, 2012; Malone & Lusk, 2018) identified the same findings as stated in our research — craft beer consumers are mostly highly educated.

In the last part of our results, we showed that taste is the most important factor (compared to price and brand) when people select beer. This fact confirms the trend of craft breweries development. Jaeger *et al.* (2019) also came to a similar conclusion when they concluded that the different taste is the key driver of consumer behavior when buying beer. It is not such a surprising finding, because many beer experts refer that these beers are characterized by high flavor complexity (Medoro *et al.*, 2016; Jaeger *et al.*, 2020).

Conclusions

The craft beer segment has been growing very fast in recent years. Many people started to stop drinking standardized beer from big industrial breweries and switched to craft beer. According to our research, the craft beer segment includes men with higher education. According to age, we didn´t find significant differences in terms of drinking craft, but the results have showed us that people between 26–40 have a higher tendency to drink craft. Whereas craft is more expensive than industrial beer, this segment includes people with above average income. These people live in bigger cities and work mentally not physically, they do sports and go for walks in nature during their leisure time. The specific taste of craft beer is the main motive to buy craft beer for this segment. This research showed that the craft beer segment became an important part of the beer market and there are still opportunities to grow. Added value to the research field compared to other similar studies consists in searching more characteristics of craft beer customers like marital status, residence, type of work, and free time activities that were not included yet. As far as we know, this is the first detailed research focused on the craft beer segment in Central Europe. Our results suggest a change in customer preferences in beer consumption. Therefore, the results can be used in other similar surveys for international comparison, as there are several country specifics in alcohol consumption. From the international context, it would be very interesting to conduct similar research in other European countries or regions in the world, where we expect some differences in the characteristics of the craft beer segment. The craft beer revolution is also transforming the world map of alcohol consumption because in several typical beer countries (Germany, Belgium, the Czech Republic) there is a significant reduction in consumption. On the contrary, in several typical wine countries (Spain, Portugal) beer consumption is increasing, mainly due to different flavors and types of craft beer. We believe that this trend will certainly continue for a longer period, as there is still room in the market for new craft breweries.

This research has also some limitations that we would like to improve in the following research. We can say that respondents were mostly people up to 50 years and, therefore, we can´t exactly describe the habits and consumer preferences of older beer drinkers and the respondents were mostly from limited regions. In our future research, we want to extend the research sample to other countries to compare results with other regions and countries. We want to focus also on other characteristics of the craft beer segment, like internship abroad experience, preferred food they eat, beer-drinking frequency, a place to drink, and some others. When more characteristics will be searched there is the possibility to adopt other methods (f. e. cluster analysis to describe more beer consumers´ groups). On the other hand, the results of this research can help new craft brewers to focus on the right segment and create appropriate strategies to increase consumption of their craft beer and be successful in competition. The results of the research can provide a deeper understanding of craft consumers in the market and understand how these craft beer consumers respond to the beer supply and, therefore, results can be used by beer producers and distributors to develop and implement a communication strategy towards customers with diverse preferences. Segmentation of the beer market will help producers to expand the offer of new types of beer with a unique taste that will meet the needs of a specific group of customers at a higher level. The importance of the craft beer revolution can also be seen in the long term development of regions, where it represents one of the driving forces of local tourism and its contribution can be seen in the economic and social field. Therefore, these results about craft beer segment can help local policymakers in the development of regions and tourism activities to plan the marketing of the relevant areas where the local brewery is located, targeting the exact segment.

References

Acitelli, T., & Magee, T. (2017). *The audacity of hops: the history of America's craft beer revolution*. Chicago: Chicago Review Press, 123–141.

Alves, L. R., Battochio, J. R., Cardoso, J. M. P., De Mello, L. L. M. M., Da Silva, V. S., Siqueira, A. C. P., & Bolini, H. M. A. (2008). Time–intensity profile and internal preference mapping of strawberry jam. *Journal of Sensory Studies*, *23*(1), 125–135. doi: 10.1111/j.1745-459X.2007.00146.x.

Anderson, K., Meloni, G., & Swinnen, J. (2018). Global alcohol markets: evolving consumption patterns, regulations, and industrial organizations. *Annual Review of Resource Economics*, *10*, 105–132. doi: 10.1146/annurev-resource-100517-023331.

Aquilani, B., Laureti, T., Poponi, S., & Secondi, L. (2015). Beer choice and consumption determinants when craft beers are tasted: an exploratory study of consumer preferences. *Food Quality and Preference*, 41, 214–224. doi: 10.1016/j.foodqual.2014.12.005.

Brewer, C., Streel, E., & Skinner, M. (2017). Supervised disulfiram's superior effectiveness in alcoholism treatment: ethical, methodological, and psychological aspects. *Alcohol and Alcoholism*, *52*(2), 213–219. doi: 10.1093/alcalc/agw 093.

Brouwer, M. T. (1981). The European beer industry: concentration and competition. In *The structure of European industry*. Dordrecht: Springer, 39–56.

Calvo-Porral, C., Orosa-González, J., & Blazquez-Lozano, F. (2018). A clustered-based segmentation of beer consumers: from “beer lovers” to “beer to fuddle”. *British Food Journal*, *12*(6), 1280–1294. doi: 10.1108/BFJ-11-2017-0628.

Carbone, A., & Quici, L. (2020). Craft beer mon amour: an exploration of Italian craft consumers. *British Food Journal, 122*(8), 2671–2687. doi: 10.1108/BFJ-07-2019-0476.

Carvalho, N. B., Minim, L. A., Nascimento, M., de Castro Ferreira, G. H., & Minim, V. P. R. (2018). Characterization of the consumer market and motivations for the consumption of craft beer. *British Food Journal, 120*(2), 378–391. doi: 10.1108/BFJ-04-2017-0205.

Clemons, E. K., Gao, G. G., & Hitt, L. M. (2006). When online reviews meet hyperdifferentiation: a study of the craft beer industry. *Journal of Management Information Systems*, *23*(2), 149–171. doi: 10.2753/MIS0742-1222230207.

Colen, L., & Swinnen, J. (2016). Economic growth, globalisation and beer consumption. *Journal of Agricultural Economics, 67*(1), 186–207. doi: 10.1111/1477-9552.12128.

Favalli, S., Skov, T., & Byrne, D. V. (2013). Sensory perception and understanding of food uniqueness: from the traditional to the novel. *Food Research International*, *50*(1), 176–188. doi: 10.1016/j.foodres.2012.10.007.

Garavaglia, C., & Swinnen, J. (Eds.). (2017). *Economic perspectives on craft beer: a revolution in the global beer industry*. Springer. doi: 10.1007/978-3-319-58235-1.

Gómez-Corona, C., Escalona-Buendía, H. B., García, M., Chollet, S., & Valentin, D. (2016). Craft vs. industrial: habits, attitudes and motivations towards beer consumption in Mexico. *Appetite*, *96*, 358–367. doi: 10.1016/j.appet.2015.10.002.

Jaeger, S. R., Cardello, A. V., Chheang, S. L., Beresford, M. K., Hedderley, D. I., & Pineau, B. (2017). Holistic and consumer-centric assessment of beer: a multi-measurement approach. *Food Research International*, *99*, 287–297. doi: 10.1016/j.foodres.2017.05.004.

Jaeger, S. R., Worch, T., Phelps, T., Jin, D., & Cardello, A. V. (2020). Preference segments among declared craft beer drinkers: perceptual, attitudinal and behavioral responses underlying craft-style vs. traditional-style flavor preferences. *Food Quality and Preference*, *82*, 103884, doi: 10.1016/j.foodqual.2020.103884.

Jaeger, S. R., Xia, Y., Le Blond, M., Beresford, M. K., Hedderley, D. I., & Cardello, A. V. (2019). Supplementing hedonic and sensory consumer research on beer with cognitive and emotional measures, and additional insights via consumer segmentation. *Food Quality and Preference*, *73*, 117–134. doi: 10.1016/j.foodqual.2018.11.015.

Kirouac, M., & Witkiewitz, K. (2017). Identifying “Hitting Bottom” among individuals with alcohol problems: development and evaluation of the noteworthy aspects of drinking important to recovery (NADIR). *Substance Use & Misuse, 52*(12), 1602–1615. doi: 10.1080/10826084.2017.1293104.

Köster, E. P. (2009). Diversity in the determinants of food choice: a psychological perspective. *Food Quality and Preference*, *20*(2), 70–82. doi: 10.1016/j.foodqual.2007.11.002.

Kraftchick, J. F., Byrd, E. T., Canziani, B., & Gladwell, N. J. (2014). Understanding beer tourist motivation. *Tourism Management Perspectives*, *12*, 41–47. doi: 10.1016/j.tmp.2014.07.001.

Madsen, E. S., & Wu, Y. (2016). Marketing and globalization of the brewing industry. In I. Cabras, D. Higgins & D. Preece (Eds). *Brewing, beer and pubs*. London: Palgrave Macmillan, 34–53. doi: 10.1057/9781137466181_3.

Malone, T., & Lusk, J. L. (2018). If you brew it, who will come? Market segments in the US beer market. *Agribusiness*, *34*(2), 204–221. doi: 10.1002/agr.21511.

Mastanjević, K., Krstanović, V., Lukinac, J., Jukić, M., Lučan, M., & Mastanjević, K. (2019). Craft brewing–is it really about the sensory revolution? *Kvasny Prumysl*, *65*(1), 13–16. doi: 10.18832/kp2019.65.13.

Medoro, C., Cianciabella, M., Camilli, F., Magli, M., Gatti, E., & Predieri, S. (2016). Sensory profile of italian craft beers, beer taster expert versus sensory methods: a comparative study. *Food and Nutrition Sciences, 7*(06), 454. doi: 10.4236/fns.2016.76047.

Morgan, D. R., Thomas Lane, E., & Styles, D. (2020). Crafty marketing: an evaluation of distinctive criteria for “craft” beer. *Food Reviews International*. Advance online publication. doi: 10.1080/87559129.2020.1753207.

Munk, M., Drlik, M., Kapusta J., & Munkova, D. (2013). Methodology design for data preparation in the process of discovering patterns of Web users behaviour. *Applied Mathematics & Information Science, 7*(1), 27–36. doi: 10.12785/AMIS%2F071L05.

Murray, D. W., & O'Neill, M. A. (2012). Craft beer: penetrating a niche market. *British Food Journal, 114*(7), 899–909. doi: 10.1108/00070701211241518.

Patterson, M., & Hoalst-Pullen, N. (Eds.). (2014). *The geography of beer: regions, environment, and societies*. Berlin/Heidelberg: Springer, 23–30. doi: 10.1007/978-94-007-7787-3.

Pokrivčák, J., Lančarič, D., Savov, R., & Tóth, M. (2018). Craft beer in Slovakia. In *Economic perspectives on craft beer*. London: Palgrave Macmillan, 321–343.

Pokrivčák, J., Supeková, S. C., Lančarič, D., Savov, R., Toth, M., & Vašina, R. (2019). Development of beer industry and craft beer expansion. *Journal of Food & Nutrition Research*, *58*(1), 63–74.

Rivaroli, S., Hingley, M. K., & Spadoni, R. (2018). The motivation behind drinking craft beer in Italian brew pubs: a case study. *Economia Agro-Alimentare*. *20*(3), 425–443. doi: 10.3280/ECAG2018-003009.

Sester, C., Dacremont, C., Deroy, O., & Valentin, D. (2013). Investigating consumers’ representations of beers through a free association task: a comparison between packaging and blind conditions. *Food Quality and Preference*, *28*(2), 475–483. doi: 10.1016/j.foodqual.2012.11.005.

Stack, M., Gartland, M., & Keane, T. (2016). Path dependency, behavioral lock-in and the international market for beer. In *Brewing, beer and pubs*. London: Palgrave Macmillan, 54–73. doi: 10.1057/9781137466181_4.

Török, Á., Szerletics, Á., & Jantyik, L. (2020). Factors influencing competitiveness in the global beer trade. *Sustainability*, *12*(15), 5967. doi: 10.3390/su12155957.

Tremblay, C. H., & Tremblay, V. J. (2011). Recent economic developments in the import and craft segment of the US brewing industry. In J. F.M. Swinnen (Ed.). *Economics of beer*. Oxford Scholarship Online, 141–160. doi: 10.1093/acprof:oso/9780199693801.003.0008.

Tremblay, V. J., Iwasaki, N., & Tremblay, C. H. (2005) The dynamics of industry concentration for U.S. micro and macro brewers. *Review of Industrial Organization, 26*, 307–324. doi: 10.1007/s11151-004-8114-9.

Varela, P., Beltrán, J., & Fiszman, S. (2014). An alternative way to uncover drivers of coffee liking: preference mapping based on consumers' preference ranking and open comments. *Food Quality and Preference*, *32*, 152–159. doi: 10.1016/j.foodqual.2013.03.004.

Viejo, C. G., Fuentes, S., Howell, K., Torrico, D. D., & Dunshea, F. R. (2019). Integration of non-invasive biometrics with sensory analysis techniques to assess acceptability of beer by consumers. *Physiology & Behavior, 200*, 139–147. doi: 10.1016/j.physbeh.2018.02.051.

Wojtyra, B., Kossowski, T. M., Březinová, M., Savov, R., & Lančarič, D. (2020). Geography of craft breweries in Central Europe: location factors and the spatial dependence effect. *Applied Geography*, *124*, 102325. doi: 10.1016/j.apgeog.2020.102325.

Acknowledgments

This work was supported by the Scientific Grant Agency of the Ministry of Education of the Slovak Republic (ME SR) and the Slovak Academy of Sciences (SAS) under the contract No. VEGA-1/0525/21, and by the Operational Program Integrated Infrastructure within the project: Demand-driven research for the sustainable and innovative food, Drive4SIFood 313011V336.

Annex

Table 1. Operationalization of the variables

VARIABLES	LABELS	OPERATIONALIZATION	MEASUREMENT
Age of the respondent	AGE	What is your age?	1: 18-25 years; 2: 26-40 years; 3: 41 and more
Gender of the respondent	MALE	Are you man or woman?	0: woman; 1: man
Level of education of the respondent	EDU	What is your final level of education?	1: primary education; 2 secondary education; 3: higher education
Monthly income	INCO	What is your monthly income?	0: below average; 1: above average
Residence of the respondent	RES	Where do you live?	0: small city, town, or village up to 20.000 inhabitants; 1: bigger city with more than 20.000 inhabitants
Marital status of the respondent	MARST	What is your marital status?	1: single; 2: married; 3: divorced
Type of work of the respondent	WORK	Do you perform physical work as a job?	0: no; 1: yes
Free time of the respondent	FREETIME	What type of activity you prefer to do in free time?	0: passive free time (books, cinema, theatre, TV); 1: active free time (sport, travelling, nature)
Decision factors to buy craft beer	FACT	Which factor is the most important for you when you buy the beer?	1: price; 2: taste; 3: brand
Craft beer awareness	AWCB	Do you know what the craft beer is?	0: no; 1: yes
Preference of drinking craft beer	DRCB	Do you prefer to drink draft beer?	0: no; 1: yes
Domestic industrial beer	DIB	I like to drink domestic industrial beer.	Likert scale 1-5: 1 – totally disagree, 3 – neutral attitude; 5 – totally agree
Foreign industrial beer	FIB	I like to drink foreign industrial beer.	Likert scale 1-5: 1 – totally disagree, 3 – neutral attitude; 5 – totally agree
Domestic craft beer	DCB	I like to drink domestic craft beer.	Likert scale 1-5: 1 – totally disagree, 3 – neutral attitude; 5 – totally agree
Foreign craft beer	FCB	I like to drink domestic craft beer.	Likert scale 1-5: 1 – totally disagree, 3 – neutral attitude; 5 – totally agree

Table 2. Case processing summary and test statistics according to age

CASES (AGE)	INCLUDED		EXCLUDED		TOTAL	
	N	Percent	N	Percent	N	Percent
	657	95.9%	28	4.1%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Kruskal-Wallis H	4.403	4.965	1.902	6.415	4.573	7.861
df	2	2	2	2	2	2
Asymp. Sig.	0.111	0.084	0.386	0.040	0.102	0.020
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
18-25	0.48	0.31	2.91	2.69	3.07	2.64
26-40	0.57	0.41	3.00	2.82	3.33	2.96
41 and more	0.53	0.39	2.78	2.41	3.14	2.61

Table 3. Case processing summary and test statistics according to gender

CASES (MALE)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	657	95.9%	28	4.1%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Mann-Whitney U	37226.5	40292.5	47240.5	42178.0	41204.0	43363.0
Z	-6.993	-5.674	-3.113	-4.997	-5.494	-4.419
Asymp. Sig. (2-tailed)	0.000	0.000	0.002	0.000	0.000	0.000
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Women	0.41	0.26	2.80	2.51	2.92	2.54
Men	0.68	0.48	3.12	2.99	3.50	3.03

Table 4. Case processing summary and test statistics according to level education

CASES (EDU)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	657	95.9%	28	4.1%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Kruskal-Wallis H	27.816	27.396	4.398	8.532	20.883	26.467
df	2	2	2	2	2	2
Asymp. Sig.	0.000	0.000	0.111	0.014	0.000	0.000

Table 4. Continued

CASES (EDU)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	657	95.9%	28	4.1%	685	100.0%
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Primary	0.22	0.11	2.25	2.13	2.25	2.25
Secondary	0.44	0.27	2.87	2.61	2.97	2.52
Higher	0.64	0.46	3.02	2.84	3.43	3.04

Table 5. Case processing summary and test statistics according to income

CASES (INCO)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	656	95.8%	29	4.2%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Mann-Whitney U	39555.0	41344.0	52944.0	50027.0	45781.0	46964.0
Z	-5.372	-4.610	-0.143	-1.164	-3.070	-2.449
Asymp. Sig. (2-tailed)	0.000	0.000	0.886	0.244	0.002	0.014
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Below average	0.43	0.28	2.92	2.66	3.03	2.63
Above average	0.65	0.46	2.94	2.77	3.36	2.90

Table 6. Case processing summary and test statistics according to residence

CASES (RES)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	657	95.9%	28	4.1%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Mann-Whitney U	44918.5	46210.5	54085.0	54916.5	51282.0	51352.0
Z	-4.308	-3.745	-1.193	-0.613	-2.213	-2.001
Asymp. Sig. (2-tailed)	0.000	0.000	0.233	0.540	0.027	0.045
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Small city	0.44	0.28	2.98	2.67	3.05	2.63
Bigger city	0.60	0.42	2.86	2.73	3.27	2.85

Table 7. Case processing summary and test statistics according to marital status

CASES (MARST)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	656	95.8%	29	4.2%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Kruskal-Wallis H	0.493	0.629	5.868	2.449	2.011	2.592
df	2	2	2	2	2	2
Asymp. Sig.	0.781	0.730	0.053	0.294	0.366	0.274
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Single	0.51	0.34	2.93	2.73	3.17	2.76
Married	0.54	0.38	3.02	2.65	3.15	2.71
Divorced	0.50	0.35	2.38	2.35	2.81	2.31

Table 8. Case processing summary and test statistics according to type of work

CASES (WORK)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	644	94.0%	41	6.0%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Mann-Whitney U	46982.5	44786.0	51707.5	50050.5	44853.5	43183.0
Z	-2.353	-3.521	-1.297	-1.708	-3.999	-4.520
Asymp. Sig. (2-tailed)	0.019	0.000	0.195	0.088	0.000	0.000
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Mental work	0,56	0,41	2,97	2,76	3,35	2,95
Physical work	0,47	0,28	2,85	2,60	2,92	2,48

Table 9. Case processing summary and test statistics according to free time activities

CASES (FREETIME)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	653	95.3%	32	4.7%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Mann-Whitney U	29379.0	32379.0	38575.0	39594.0	37933.5	36274.0
Z	-5.364	-3.668	-1.324	-0.628	-1.689	-2.325
Asymp. Sig. (2-tailed)	0.000	0.000	0.185	0.530	0.091	0.020
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Passive	0.35	0.24	3.07	2.88	3.06	2.66
Active	0.59	0.39	2.88	2.62	3.20	2.75

Table 10. Case processing summary and test statistics according to factors for decision to buy craft

CASES (FACT)	VALID		MISSING		TOTAL	
	N	Percent	N	Percent	N	Percent
	652	95.2%	33	4.8%	685	100.0%
Variable	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Kruskal-Wallis H	13.116	19.423	8.838	8.970	36.390	21.021
df	2	2	2	2	2	2
Asymp. Sig.	0.001	0.000	0.012	0.011	0.000	0.000
Mean	**AWCR**	**DRCB**	**DIB**	**FIB**	**DCB**	**FCB**
Price	0.34	0.16	2.48	2.26	2.30	2.10
Taste	0.55	0.39	3.00	2.74	3.33	2.85
Brand	0.42	0.22	2.88	2.80	2.81	2.53