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*Original Paper*

Consumers, cafes, baristas, and statistical analysis of their interactions

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ABSTRACT

Coffee is an important agricultural plant with a high trading ranking in the world, and it is currently the most popular drink on the planet. In the article, we analyzed customer behavior in the Slovak coffee market and the effect of barista knowledge and experience from the consumer's perspective. We chose the anonymous questionnaire approach to marketing research for the investigation of consumer behavior. For statistical data analysis, we used the Chi-square test of independence, a measure of association between two variables, the Friedman test, and the Kolmogorov-Smirnov one-sample test. Based on the questionnaire survey results, we can conclude that 66.4% of survey respondents cannot imagine a day without coffee and consume up to 3 cups per day. The women in our study statistically prefer milk and sugar to their coffee significantly more than men. Up to 92% of respondents aged 18–24 prefer visiting a coffee shop to drinking coffee prepared at home. Our respondents prefer the recommendations of acquaintances and the good name of the company when visiting a café. We confirmed the existence of a relationship between the baristas' attitude or professionalism and the gender or age of the respondents. Because of the quality of the baristas, men and women between the ages of 18 and 50 visit coffee shops in significant numbers. Based on the results of the questionnaire survey, we can conclude that a professional with a wide range of experience and education has proven to be an important factor for today's customers and consumers in the Slovakian coffee market.

KEYWORDS: consumers' behavior, coffee consumption, preferences, barista, Slovakia

JEL CLASSIFICATION: K75, M40

INTRODUCTION

Since the middle of the sixteenth century, coffee has been one of the most widely consumed beverages and has been a significant part of consumer culture [7]. Drinking coffee involves more than just ingesting a beverage because it is about enjoyment, experience, a way of life,

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and social standing. Pleasure, health, and sustainability are three approaches that currently characterize coffee as a consumer product.

Coffee shops create important locations in urban life, distinct from work and home, where people may meet, relax, and form friendships. According to Ferreira et al. [5], the increasing number of coffee shops in metropolitan areas has resulted in their being places of both leisure and employment as well as social gathering places where people can form relationships and possibly communities. Because of this, coffee shops can be utilized with a variety of uses and also "constitute the very heart of urbanism today" [8]. Bookman [1] argued that the emergence of an "urban café sociality" characterized by specific forms of togetherness and (limited) modes of belonging is a productive effect of the interactive interplay between brands and consumers in everyday urban life.

Samoggia & Riedel [7] identified and categorized motives, preferences and attributes of coffee consumption and purchasing behavior. Based on the results of their research, they grouped the key determinants of coffee consumption into the following categories: personal preferences, economic attributes, product attributes, context of consumption, and socio-demographics. Burge [2] studied of the motivational reasons behind customer choice in branded coffee shops. In order to evaluate the behavior of consumers towards branded coffee shops, they used a questionnaire survey and evaluated 300 questionnaires in the UK. According to their data, consumer motivations for visiting branded coffee shops are most influenced by three factors: past experience or familiarity; convenience of location or travel; and friends or family. Czarniecka-Skubina et al. [4] identified three main groups of coffee consumers using cluster analysis: neutral coffee drinkers, ad hoc coffee drinkers, and non-specific coffee drinkers. They concluded that the Polish coffee consumer prefers conventional methods of brewing coffee (like a "traditionalist") but is open to novelties and new sensory experiences. The research of Candra et al. [3] was focused on the factors that influence customers to visit a specific coffee shop based on their sensory experience and emotions. Their findings indicated that sensory experience influences positive and negative emotions, as well as behavioral intentions. Based on the results of their research, they recommend that coffee shop owners focus on designing every aspect of the sensory atmosphere that their business offers. As a result, visitors will want to return, and their purchasing behavior will improve, leading to increased consumer loyalty.

According to Czarniecka-Skubina et al. [4], coffee drinking habits, methods of coffee infusion, coffee amount consumed, and additive use in coffee are differentiated between countries and populations. We analyzed customer behavior in the Slovak coffee market and the effect of barista knowledge and experience from the consumer's perspective. The disconnect in drink terminology and definitions can lead to ordering mistakes and create a barrier between barista and customer. But on the other hand, baristas can promote positive customer experiences by providing them with attractive and exotic drink names and descriptions, which add adventure and spark to their day and ordering experience [12].

MATERIAL AND METHODS

For the analysis of consumer behavior, we chose the method of marketing research in the form of an anonymous questionnaire. The questionnaire was created using Google Forms and

distributed through social networks and also directly on the premises of cafes. 250 respondents took part in the survey (141 women and 109 men). The age structure of the respondents was as follows: 4,8% of respondents were between the ages of 51 and 62; 13,6% were between the ages of 36 and 50; 28,4% were between the ages of 25 and 35; and 53,2% were between the ages of 18 and 24. More than half of the respondents (56.8%) were employed, while the remainder were students or self-employed. We used Microsoft Excel and SAS software to realize the statistical analysis of the obtained data.

We created contingency tables to provide a basic view of the interrelationship between two or more variables and to help find interactions between them. When examining the dependence between the variables, we verified the following hypotheses:

Null hypothesis: Variables are independent.

Alternative hypothesis: Variables are dependent.

The test criterion is expressed by a formula:

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

where O_i – observed values. E_i – expected values, i – the i th position in the contingency table.

We measured the intensity of the dependence using:

- the Phi Coefficient as a measure of association between two binary variables:

$$\phi = \sqrt{\frac{\chi^2}{n}}$$

- the Pearson's Contingency Coefficient as a measure of association between two categorical variables when there is more than a 2×2 contingency:

$$C = \sqrt{\frac{\chi^2}{n + \chi^2}}$$

where χ^2 – the calculated test criterion, n – the total number of respondents.

The Friedman Test is the non-parametric alternative to the one-way ANOVA with repeated measures. We used it to test for differences between groups when the dependent variable being measured was ordinal. We verified the following hypotheses:

Null hypothesis: The means across the observed groups are all equal.

Alternative hypothesis: At least one mean differs from the others.

The test criterion is expressed by a formula:

$$Q = \frac{12}{nk(k+1)} \sum_{j=1}^k R_j^2 - 3n(k+1)$$

where n – the number of subject, k – the number of groups, R_j – the sum of the ranks for the j th group.

The Kolmogorov-Smirnov One Sample Test was used to compare an observed sample distribution with a theoretical distribution. The null hypothesis assumes no difference between

the observed and theoretical distributions. The value of test statistic D is calculated as the largest absolute value of the difference between empirical and theoretical abundances. The critical value of D is found from the K-S table values for one sample test. If the calculated value is less than the critical value, accept the null hypothesis. If the calculated value is greater than the critical table value, reject the null hypothesis.

We interpreted the results of the survey with regard to the sample set of respondents.

RESULTS AND DISCUSSION

Based on the questionnaire survey results, we can conclude that 66.4% of survey respondents cannot imagine a day without coffee and consume up to 3 cups per day. Statistical testing of associations showed that there are no significant differences between the number of coffees drunk and the age, gender, or economic activity of the respondents included in our research sample. Rittiboonchai et al. [6] found that the quantity of consumption was only one cup of coffee per day, with 65.7% of respondents from Bangkok. In contrast, according to Czarniecka-Skubina et al. [4], the Polish coffee consumer (76.8%) consumes coffee daily, either once, twice, or several times a day, which is similar to the Slovak coffee consumer.

With the consumption of coffee, the number of different ingredients that can be added to it also increases. Milk and sugar are supplemented with a variety of healthy alternatives. We confirmed the existence of a relationship between gender and preference for milk or sugar as a coffee additive. Based on the findings, we can conclude that the women in the study statistically prefer milk and sugar to their coffee significantly more than men. The chi-square value of 7.62 for milk and 10.26 for sugar was tested against the critical value of 3.84. Based on the results, we can conclude that the preference for milk or sugar as an additive to coffee is statistically significantly dependent on the gender of consumers. Based on the value of the coefficient π (0.2), measuring the intensity of dependence, we can confirm a weak dependence. In our sample of respondents, the use of coffee additives also increased with increasing age. For example, milk in coffee was preferred by only 27% of respondents from the 18 to 24 age group but up to 67% of respondents from the 51 to 62 age group. According to Czarniecka-Skubina et al. [4], 69.6% of Polish consumers choose milk as an addition to their coffee, and 43.7% sweeten their coffee with sugar. Only 7.7% of respondents use sugar substitutes (sweeteners), and almost 40% of respondents' drink coffee without additions. They found that people aged 31–40 years with higher education, living in large cities (>100,000 inhabitants), drink coffee without any additions significantly more often ($p < 0.05$). According to their results, coffee is more likely to be drunk with sugar by men ($p = 0.0025$), people aged 25–30 or 51–65 years, and people living in cities with fewer than 10,000 inhabitants. On the other side, coffee with milk is more likely to be drunk by women ($p = 0.00001$), similar to our survey. According to Sunarharum et al. [9], the majority of coffee consumers in Indonesia drink instant coffee (32%), ice coffee with milk (30%), and coffee mixed with milk (38%), which is the most popular choice among the panelists.

As we have already mentioned, the number of coffee shops is growing, and they are being visited more and more. Sometimes, however, the consumer prefers to enjoy his cup of coffee in the comfort of his home. We determined preferences based on a selected research sample. We used statistical methods to confirm the assumed relationship between the place of coffee preparation and age or economic activity of the respondents involved in the survey, but not

the gender of the respondents and the place of coffee consumption. The chi-square values of 18.21 for age and 11.24 for economic activity of respondents were tested against the critical value. Based on the results, we can conclude that the preference for coffee prepared by an expert in a cafe or other establishment is statistically significantly dependent on the age or economic activity of consumers (see tables 1 and 2). Up to 92% of respondents aged 18–24 prefer visiting a coffee shop to drinking coffee prepared at home. Based on the value of Pearson's coefficient (0.26), measuring the intensity of dependence, we can confirm a weak dependence.

Table 1 Observed values of the selected attributes with respect to the age of the respondents

<i>Attribute / age</i>	<i>18-24</i>	<i>25-35</i>	<i>36-50</i>	<i>51-62</i>	<i>Total</i>
Coffee prepared at home	10	20	8	4	42
Coffee prepared by an expert in a cafe or other establishment	123	51	26	8	208
<i>Total</i>	<i>133</i>	<i>71</i>	<i>24</i>	<i>12</i>	<i>250</i>

Source: author's processing

Table 2 Observed relative values of the selected attributes with respect to the economic activity of the respondents (%)

<i>Attribute / economic activity</i>	<i>student</i>	<i>employed</i>	<i>self-employed</i>	<i>Total</i>
Coffee prepared at home	5.88	21.83	26.09	16.80
Coffee prepared by an expert in a cafe or other establishment	94.12	78.17	73.91	83.20
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

Source: author's processing

According to Sunarharum et al. [9], analysis of the location or where respondents drink coffee in Indonesia revealed that onsite drinking (or drinking in coffee shops or cafes) is preferred mostly by the more experienced group, as opposed to common consumers who prefer a takeaway method and consume coffee at home. According to Czarniecka-Skubina et al. [4], the majority of Polish consumers consume coffee at home (95.5%) and at work (79.7%). They found that in the canteen, coffee was consumed significantly more often by people aged 18–30 and living in large cities with more than 100,000 inhabitants. On the other hand, women and people aged 18–30 with higher education who live in big cities significantly more often choose cafés to consume coffee. Young people up to 30 years old, women, and people with higher education significantly more often drink coffee at work and with friends. Thongrawd & Rittiboonthai [10] researched Marketing Factors Affecting the Selection of Services of Franchise Fresh Coffee Shops in Metropolitan Bangkok and argue that the most important reason to use the service of coffee consumption is to use it as a meeting point [11]. They found that most consumers' objective in coming to use the services was to enjoy a cup of coffee, a snack, and relax with friends over a 2–3day interval.

We also looked for and evaluated the reason for the first visit to the coffee shop with regard to selected factors (recommendations from acquaintances or friends, the good name of the coffee shop, and the willingness to visit any new business). Respondents ranked the options from 1 to 3, with 1 being the least important. Using the Friedman test, we found that there was a statistically significant difference in the evaluation of the reasons for the first visit to the

coffee shop by the research respondents. The Kolmogorov-Smirnov test confirmed to us that the differences between empirical and theoretical frequencies are not random; respondents prefer the recommendations of acquaintances and the good name of the company when visiting a café (figure 1). Up to 63% of respondents indicated a willingness to visit any new businesses as the reason with the least degree of importance.

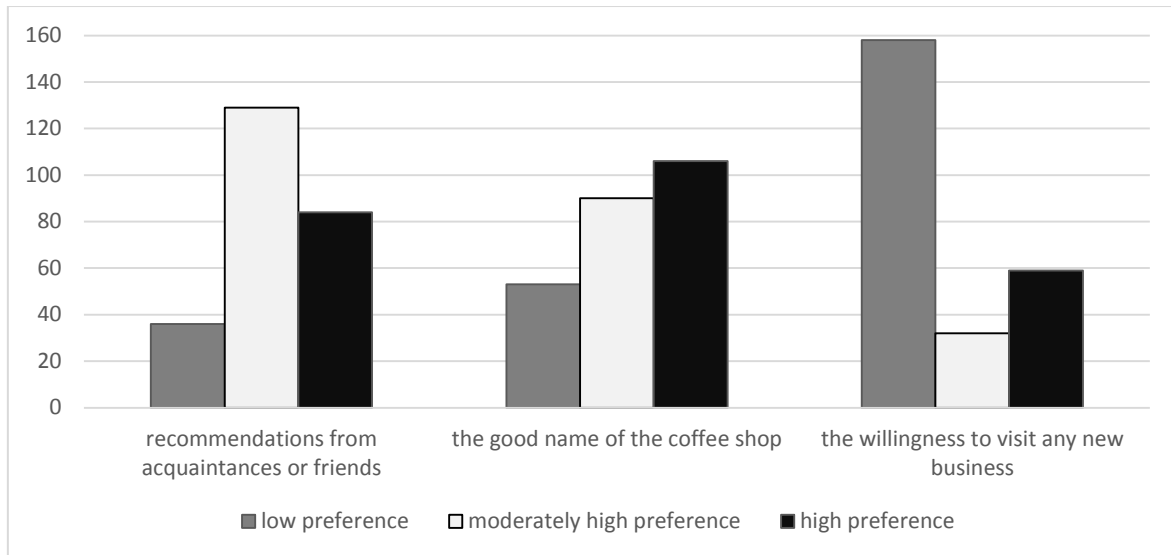


Figure 1 The reasons for the first visit to cafes
Source: author's processing

One of the respondents' tasks was to rank the selected 4 factors based on the size of their influence on visiting a particular business, where 1 means the least degree of importance and 4 the greatest degree of importance (figure 2). Using the Friedman test, we found that there was a statistically significant difference in the rating of the selected factors by the research respondents. The high-quality professional coffee preparation received the most points (813). Surprisingly, the respondents indicated the price as the least important reason for visiting the cafe. The price received only 403 points.

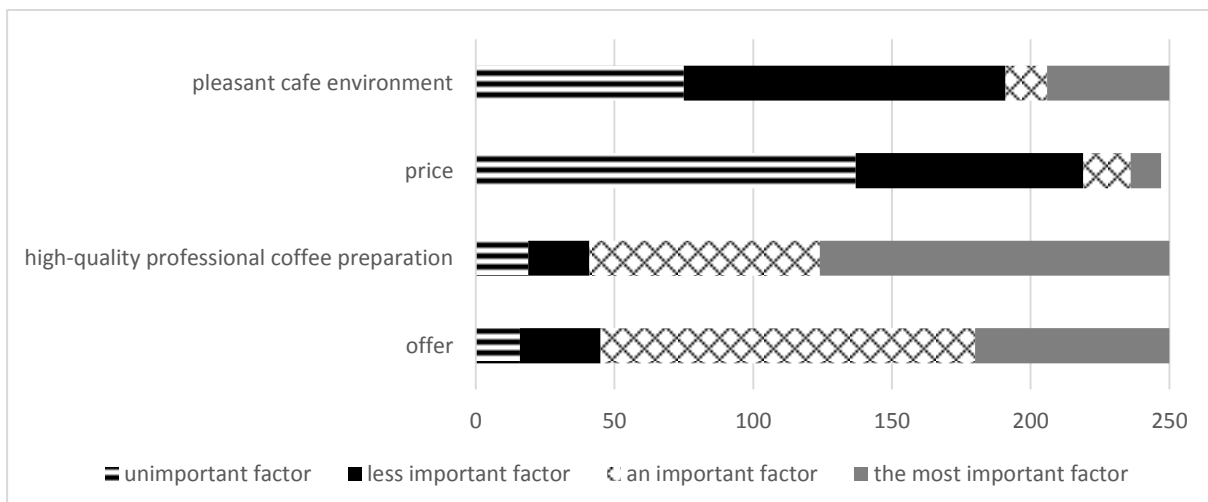


Figure 2 Selected factors influencing the visit to cafes

Source: author's processing

Czarniecka-Skubina et al. [4] found that the most important factors affecting the purchase of coffee included the quality and flavor (taste and aroma) of the coffee, as well as the habits of consumers in Poland. Less important factors for the Polish respondents were coffee price, brand, friends' opinions, and the features of coffee (origin, acidity, strength, or degree of roasting). The respondents' least important factors were packaging, presentation on the shelf in the store, promotion, advertising, convenience, and health aspects of coffee.

Based on the results of the questionnaire survey, we can conclude that respondents value professionalism and have faith in baristas. More than 80% of men and more than 70% of women ask a barista for advice when choosing from a cafe's menu. As many as 67% of respondents said that they liked a particular cafe precisely because of the attitude or professionalism of the baristas. We confirmed the existence of a relationship between the baristas' attitude or professionalism and the gender or age of the respondents. Because of the quality of the baristas, men and women between the ages of 18 and 50 visit coffee shops in significant numbers. The importance of the quality of cafe employees was also confirmed by Thongrawd and Rittboonchai [10], who argue that employees in service positions should be trained to put more emphasis on servicing customers to impress them and invite them to return again in the future until they become regular clients.

Finally, we asked for opinions on the importance of a certain range of barista experience. As a result, the respondents were divided into two imaginary groups. One group considers baristas to be people who reflect experience and education. In order to achieve professionalism, their experience is crucial, and it should be expanded. This opinion really prevailed to a large extent. On the other hand, some argue that with today's technology and cafe equipment, years of experience or additional education are unnecessary.

CONCLUSIONS

Based on the results of the questionnaire survey, we can conclude that a professional with a wide range of experience and education has proven to be an important factor for today's customers and consumers in the Slovakian coffee market. Respondents really have confidence in them, and we recommend that companies pay attention to the continuous education and improvement of the qualifications of their employees. As it turned out, the selected sample's respondents preferred the company's good name and recommendations from acquaintances. And a good name is often created by baristas, because, as our research shows, many respondents often like a cafe thanks to them. Considering the results of our survey, we can conclude that some customers are willing to pay more where quality service is supplemented by a sufficient offer and they feel comfortable there.

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