Customer's View to Provide Information for Loyalty Programs in the South Bohemia

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Abstract—The aim of the article is to determine the attitudes of South Bohemian customers to providing personal data for the loyalty program needs. The article is based on the partial output of research focusing on customer loyalty to loyalty programs. The research was conducted in 2018 by a questionnaire survey with 267 respondents. Respondents interviewed were customers who live in the South Bohemian Region with an emphasis on the younger generation. The results presented in the article are based on the part of the questionnaire, where the respondents answered, which personal data are willing to provide for loyalty programs. Consequently, it is tested dependencies of overall evaluation in relation to provide of personal data in terms of identification variables: gender, age, education and the size of the respondent's place of residence. Two-choice statistical tests and the Kruskal-Wallis test are used to determine dependencies. The statistical program R. was used to perform these tests.

Keywords—loyalty program, customers, customer view, marketing

I. INTRODUCTION

Turbulent conditions of globalized trade creates demanding requirements for companies in various sectors [1]–[3]. The fight to gain loyal customers is realized also through the creation of various forms of loyalty programs. Loyalty programs have had their beginnings in the field of transport services. The American Airline is one of the first companies to develop and launch a loyalty program. In the early 1920s, American Airlines decided to reward their customers for free flights for a certain number of miles with their company. Then, there has evolved a system with several levels of membership where rewards correspond exactly to those loyalty categories. Over time, loyalty programs have quickly spread to the following airlines and beyond the aviation industry. In the first place, the loyalty program has been taken over by hotels, rental cars and other businesses in other sectors. At present, loyalty programs can be found in all modes of transport, in the hotel industry, in financial institutions, in electronics and retail chains [4].

Loyalty programs are an overwhelming trend today. By joining the company's loyalty program, customers can get various discounts on purchases, gifts, or any extra service as a reward for loyalty. Karlíček and Král [5] state that "loyalty programs can be an effective way to motivate customers to purchase and how to effectively build a customer contact database through them." Due to the existence of a customer information database, problems are reduced [6], [7] in processing business processes in different areas of the company. Detailed customer databases enable companies to build individual relationships with customers that lead to the exact satisfaction of their requirements. The transformation of anonymous mass contacts into individual relationships is made possible by various CRM tools such as call center, e-marketing or individual website [8], [9]. Customer relationship management ensures a more efficient and smoother process of business processes, allowing the company more time to add to improving customer relationships [10], [11]. An important fact here is the collection of personal data and data on buying habits, sorting, processing and storing them in a database that must be in accordance with the law. Knowledge of this information is an essential element for gaining a competitive advantage. Hrachovec [12], Vilcekova and Starchon [13] says processing data is not easy at all, and most companies do not work with these data at all. The reason is the high demands on human resources that can not only effectively evaluate these data but also use them [14-18]. In fact, marketers should use mathematical and statistical models [19]–[21] to recognize which data are useful [22], [23] and which are not. Modern technologies then organize customer data into groups [24]–[27]. Unfortunately, without this information, we do not know the customer and we cannot fully exploit the potential of loyalty programs. When building these databases, the customer is exposed to personal information requirements [28], [29]. The nature and extent of these information requirements may not always be positively perceived despite the obligation to comply with the laws governing the handling of personal data (GDPR regulation). On the other hand, these databases are creating many entities that the customer comes into contact with [30]–[32]. For this reason, the customer is often harassed by various forms in order to find out his personal details. The article focuses on the attitude of customers to provide creditors for loyalty programs.

II. MATERIAL AND METHODS

The aim of the article is to determine the attitudes of South Bohemian customers to providing personal data for loyalty programs. The article is based on the partial outputs of research conducted in 2018 and the emphasis on the attitude of young customers to loyalty programs. The results in the article are based on data obtained through a questionnaire survey on a sample of 267 respondents. The interviewees were customers who have their permanent

residence in the South Bohemian Region. The presented results in the article are based on the question of providing personal data for loyalty programs, and respondents could choose their answer from two options - yes (0) or no (1). In the processing of the results, the basic statistical characteristics were used - relative and absolute frequency, weighted arithmetic mean. In addition to the basic information on the provision of information, attention was also focused on the assessment of the overall rating dependencies "share of the information provided" (SIP), on the following identification variables: gender, age, education and the size of the respondent's municipality size. We determine the overall rating variable (SIP) as the ratio of positive numerical scores of all variants of information by individual respondents. In particular, we will be interested in whether this evaluation variable depends significantly on the identification variables. We will use the two-choice statistical tests and the Kruskal-Wallis test to be performed using the statistical program R.

III. RESULTS AND DISCUSSION

To evaluate the basic knowledge of the information that respondents are willing to provide when registering a loyalty program, we processed the data using the basic descriptive statistics (frequency and percentage). We offered respondents a "yes" (1) or "no" (0) from 12 variants of information: title, surname, e-mail, postal address, date of birth, education, size of clothing, number of household members and average monthly household income (Fig. 1.). Fig. 1. shows the structure of the distribution of absolute response rates.
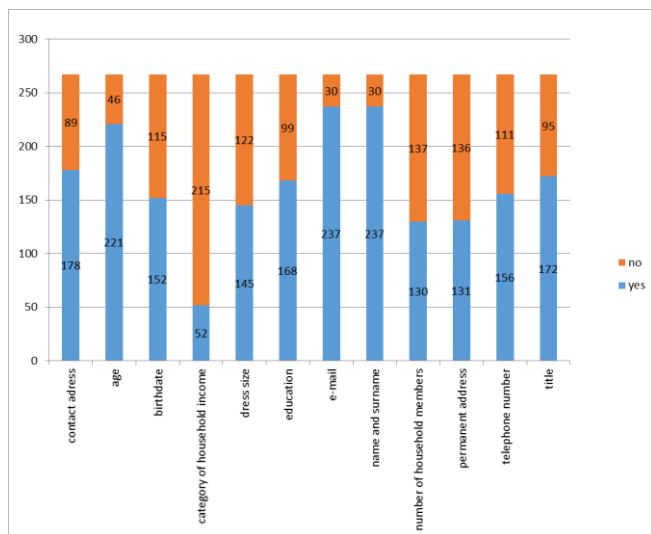

Fig. 1.   Frequency distribution for variants of individual claims. *(source: authors)*

The largest customer consent (Fig. 1.) with the provision of personal data is expressed with e-mail variants, 237 (88.8%), and surname 237 (88.8%) and age (82.8%). Responding customers are the least willing to provide information about category of household income 52 (14.2%) number of household members 130 (35.4%) and permanent address 131 (49.1%) for loyalty programs. Most of the respondents are also willing to provide personal information like: contact address (up to 66.7% of respondents), academic

title (62.3%), telephone number (58.4%), birthday (56.9% education (55.07%) and dress size (54.3%).

The dependence of willingness to provide personal information for loyalty programs is addressed through the creation of a share of the information provided (SIP). We use the ratio of positive numerical evaluations of all variants of information by individual respondents to express the overall SIP variable. This value was tested in terms of dependence on the following identification variables: gender, age, education and the size of the respondent's municipality size. We use statistical two-choice tests and the Kruskal-Wallis test. Table 1 lists the calculated basic numerical characteristics of the SIP variable, and Fig. 2. shows its flow using the box diagram and the absolute frequency histogram.

TABLE I.   NUMERICAL CHARACTERISTICS OF THE SIP

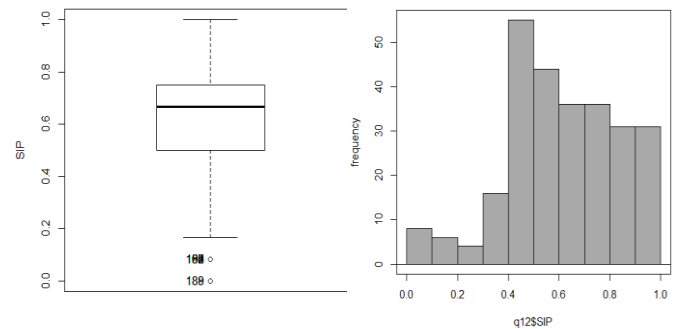| Arithmetic mean	Standard derivation	Coefficient of variance	25% quantile	Median	75% quantile	n
0.6177	0.218508	0.35377	0.5	0.667	0.75	267

Source: Authors

Fig. 2.   Distribution of evaluation parameter SIP. *(source: authors)*

We test the Shapiro-Wilk test for the normality of the SIP data variable, and the result obtained is W = 0.9677, p-value = 1.026×10^{-5}. Normality was rejected at 5% significance level. Therefore, dependency testing will be performed using nonparametric tests.

TABLE II.   CONDITIONAL NUMERICAL CHARACTERISTICS OF THE SIP BY GENDER

Gender	Arithmetic mean	Standard derivation	Coefficient of variance	Quantiles					n
				0%	25%	50%	75%	100%	
female	0.6374	0.2085	0.3271	0.083	0.500	0.667	0.75	1	151
male	0.5919	0.2293	0.3873	0.000	0.417	0.583	0.76	1	116

Source: Authors

The two-choice Wilcoxon test will be used to test the independence of the SIP variable on the gender (Table 2 and Fig. 3.). We get W = 9801, p-value = 0.09326. The test failed to demonstrate the dependence on the 5% level of materiality. At 10% significance level, dependence is proven. It follows from the above that at the significance level of 5% a zero hypothesis is confirmed, indicating that there is no statistically significant dependency between the SIP variable and gender of customers. On the contrary, such

dependence is demonstrated at a 10% level of significance and a zero hypothesis reversed in favour of an alternative hypothesis.
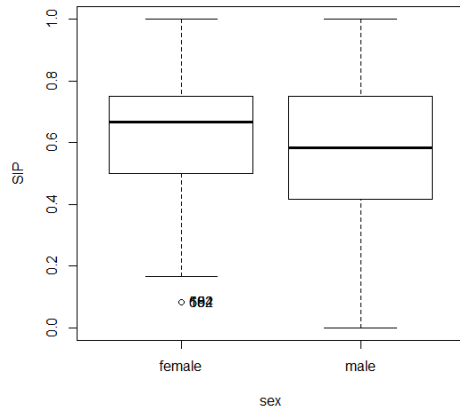

Fig. 3. Conditional distribution of the assessment variable SIP by gender. *(source: authors)*

Consequently, the dependence on respondents' age is examined here (Table 3, Fig. 4.). Independence testing of the SIP variable in age is performed using the Kruskal-Wallis test. The obtained output of this test is: chi-squared = 4.3547, df = 4, p-value = 0.3601. The test did not confirm statistically significant dependence on the 5% significance level.

TABLE III. Conditional numerical characteristics of the SIP by age

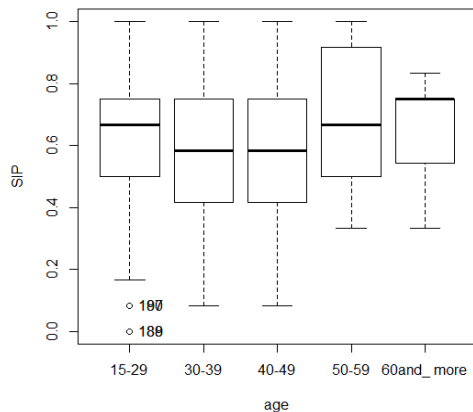| Age | Arithmetic mean | Standard derivation | Coefficient of variance | Quantiles | | | | | n |
				0%	25%	50%	75%	100%	
15-29	0.6307	0.206	0.326	0.000	0.500	0.667	0.750	1	123
30-39	0.6140	0.217	0.353	0.083	0.417	0.583	0.750	1	68
40-49	0.5637	0.245	0.435	0.083	0.417	0.583	0.750	1	51
50-59	0.6853	0.230	0.335	0.333	0.500	0.667	0.917	1	18
60and_more	0.6429	0.191	0.297	0.333	0.542	0.750	0.750	0.833	7

Source: Authors

Fig. 4. Conditional distribution of the assessment variable SIP by age. *(source: authors)*

Dependence of the evaluating variable on the customer's education is tested again using the Kruskal-Wallis test (Table 4, Fig. 5.). The resulting values are chi-squared = 0.7034, df = 3, p-value = 0.8724. This dependency was not proven by a 5% level of significance test, and therefore a zero hypothesis was confirmed that the willingness to provide personal data for loyalty programs is independent of the age of customers.

TABLE IV. Conditional numerical characteristics of the assessment variable SIP by education

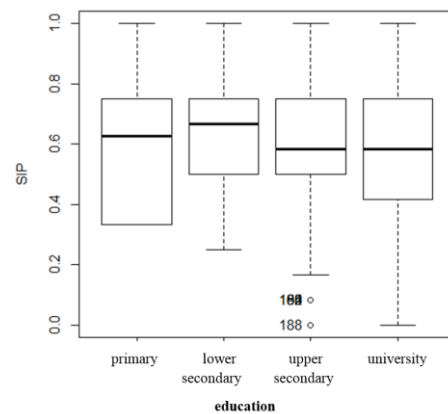| Education | Arithmetic mean | Standard derivation | Coefficient of variance | quantiles | | | | | n |
				0%	25%	50%	75%	100%	
primary	0.6000	0.245	0.408	0.33	0.35	0.63	0.73	1	10
lower secondary	0.6459	0.184	0.284	0.25	0.50	0.67	0.75	1	40
upper secondary	0.6134	0.215	0.351	0.00	0.50	0.58	0.75	1	144
university	0.6130	0.241	0.393	0.00	0.42	0.58	0.75	1	73

Source: Authors

Fig. 5. The conditional distribution of the assessment variable SIP by education. *(source: authors)*

Testing the SIP dependence on the size of the respondent's municipality size (in thousands of inhabitants) was performed by the Kruskal-Wallis test. Conditional numerical characteristics are shown in Table 5 and the conditional distribution is shown in Fig. 6.

TABLE V. Conditional numerical characteristics of the assessment variable SIP by respondents' municipality size

Municipality size (in thousands of inhabitants)	Arithmetic mean	Standard derivation	Coefficient of variance	25% quantile	Median	75% quantile	n
(0;1]	0.582	0.215	0.370	0.417	0.583	0.667	53
(1;10]	0.673	0.204	0.303	0.500	0.709	0.833	100
(10;50]	0.640	0.188	0.293	0.500	0.667	0.750	60
(50;1200]	0.526	0.248	0.471	0.417	0.583	0.667	54

Source: Authors

The output values of the Kruskal-Wallis test are: chi-squared = 16.5007, df = 3, p-value = 0.0008951. The test determined a significant statistical dependence on the 5% level of significance from the size of the respondent's municipality. It follows that there was a reversed zero hypothesis in favour of an alternative and it can be stated that the degree of willingness of customers to provide personal data for the needs of loyalty programs depends on the size of the city.
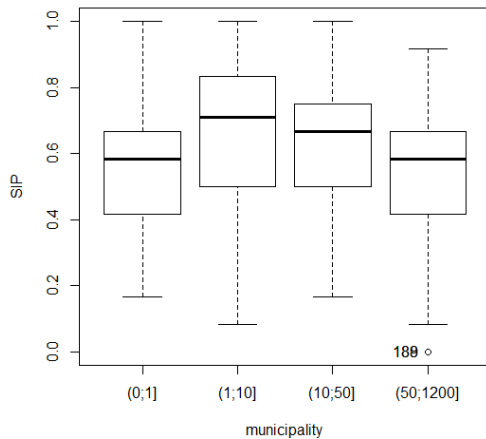

Fig. 6. Conditional distribution of the assessment variable SIP by size of the respondent's municipality. *(source: authors)*

IV. Conclusion

The article presents partial research results that focus on the South Bohemia customer attitude to providing loyalty information. The dependence of their attitude is tested in terms of age, gender, education, and municipality size. When creating loyalty programs and thus creating customer databases, it is necessary to consider how it works but also the practical setting. The extent of requested personal data from customers should be considered in advance as they are sensitive data that may not be willing to provide. This may discourage or deter them from registration to the loyalty program. Based on the outputs we have presented in the article, the data - name and surname, e-mail and age are data that customers do not have a problem to provide under loyalty programs (82.8 – 88.8%). The loyalty program creator should consider the necessity of the data and justify its provision: as a contact address, academic title, telephone number, date of birth, education and clothing size. However, customers of the overwhelming majority are willing to provide this information, but there are also some of the customers who provide this information to the unwanted. On the other hand, customers are strongly reluctant to provide data on average household incomes, the number of household members.

It is also clear from the results that there is a statistically significant difference at 10% level of significance, when women are more positively inclined to provide personal data than men. At the same time, the willingness to provide data for the needs of loyalty programs is different from the size of the municipality to the significance level of 5%. Customers from the smallest municipalities up to 1000 people are least accessible to data provision. By contrast, customers in municipalities with a population of between 1,000 and 10,000 and between 10,000 and 50,000 are most accessible to providing personal data. This may be related to a lesser knowledge of loyalty programs within small municipalities and thus more distrust of them.

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