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RELATIONSHIP BETWEEN ATTRIBUTE AND OVERALL CUSTOMER SATISFACTION: A CASE STUDY OF ONLINE BANKING SERVICES[4]

ABSTRACT

The purpose of this paper is to examine the relationship between attribute and overall customer satisfaction with online banking services. The main objective was to discuss the impact of four online banking service attributes on overall customer satisfaction. The questionnaire designed for collecting data consisted of three parts. Firstly, customer satisfaction with online banking services was measured. Secondly, questions about online banking services usage were comprised. Thirdly, demographic variables were included. Questionnaires were distributed online, of which 171 valid responses were gathered. Descriptive analysis, correlation analysis, and multiple regression analysis were performed to analyze data. The findings showed that accessibility, security and price had a significant and positive effect on overall customer satisfaction, while user-friendly approach positively influenced overall customer satisfaction, but this impact was not statistically significant when other variables were involved. These findings indicate that improving online banking services' accessibility, security, price and user-friendly approach lead to higher overall satisfaction levels of online banking customers.

Key words: customer satisfaction, online banking services, statistical analysis, Croatia.

1. INTRODUCTION

Online services have become an important part of company business scope, regardless of their nature of conducting business as online companies or traditional companies that are yet to develop online services. As much as it is important to achieve customer satisfaction with "traditional" services, companies are also eager to have satisfied customers by offering their online services.

One of the service sectors that recognized the advantages of online services was banking industry. According to the Croatian National Bank, at the end of 2013 the number of online banking users in Croatia exceeded 1.3 million (http://www.hnb.hr). The number of online banking users indicates a need for better understanding of online banking from customer perspective.

In practice, banks conduct surveys about their customers and provide customers with a possibility to express their opinions, as well as positive and negative experiences regarding bank's products and services. This information is useful for improving and meeting customer needs. However, according to the search results on the Croatian Scientific Bibliography portal and the Portal of

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Scientific Journals of Croatia, there is insufficient academic research referring to the online banking sector in Croatia. In addition to the authors' best knowledge, there is no academic research quoting findings on customer satisfaction with online banking services in Croatia. Therefore, it is justified to conduct this study.

The paper is organized as follows. Firstly, brief theoretical background is provided. Then, research methodology is explained. Next, results of empirical research are presented, followed by discussion and conclusion.

2. THEORETICAL BACKGROUND

Customer satisfaction has usually been defined as a post consumption evaluative judgment (Fornell, 1992; Oliver, 1997). According to Oliver (1997), customer satisfaction is a judgment that product or service provides a pleasurable level of consumption related fulfillment.

In addition, Churchill and Surprenant (1982) stated that satisfaction is similar to attitude as it can be assessed as the sum of satisfaction judgments regarding various attributes of relevant product or service. Similarly, Oliver (1997) pointed out that customer satisfaction can be measured with single or multiple indicators. Since services, including banking services, are complex, it is important to identify and measure customer satisfaction with each service component. This approach focuses on attribute satisfaction and provides more accurate and reliable information, since satisfaction (or dissatisfaction) with one service attribute leads to overall satisfaction (or dissatisfaction) with this service (Grigoroudis, Siskos, 2010; Kozak, Rimmington, 2000). However, there is a large body of research that used one, overall measure for assessing customer satisfaction (Yüksel, Rimmington, 1998; Choi, Chu, 2001; Akama, Kieti, 2003; Alén Gonzalez et al., 2007; Namkung, Jang, 2008). Although this approach is less complex, it is usually not the best predictor of overall service performance, because it provides general customer satisfaction measure. However, customer satisfaction operationalization as attribute or overall measure depends on research purpose and objectives.

In this study, customer satisfaction with online banking services is operationalized with attribute satisfaction measures that result in overall customer satisfaction.

A review of literature shows that researchers investigated the relationship between attribute and overall customer satisfaction with online banking services using different number and nature of attributes. In addition, the results of these studies have empirically confirmed that proposed attributes significantly affected overall customer satisfaction with online banking services. In this regard, Rod et al. (2009) found that online customer service quality, online information system quality and banking service product quality, as overall banking service quality dimensions, influenced customer satisfaction. Yoon (2010) demonstrated that design, security, speed, information content, and customer support service significantly influenced customer satisfaction. Hu and Liao (2011) proposed efficiency, system availability, responsiveness, compensation, contact, tangibility, privacy, reliability, reputation, continuing improvement, personalization, and benefit as antecedents of customer satisfaction within online banking sector. Zavareh et al. (2012) proposed efficient and reliable services, fulfillment, security/trust, site aesthetics, responsiveness/contact and user-friendly

approach. Kordnaeij et al. (2013) determined accessibility, easiness, trust, security, website design, website content, speed, and commission as factors affecting online banking customer satisfaction.

In accordance with previous researches, price, accessibility, security, and user-friendly approach are proposed in this study as attributes that influence overall customer satisfaction with online banking services in Croatia.

3. METHODOLOGY

In the following section research objectives are presented, hypotheses proposed, questionnaire design explained, sampling procedure described and data analysis methods presented.

3.1 Research objectives and hypotheses

The idea behind this study was to examine the relationship between attribute and overall customer satisfaction in the context of online banking sector in Croatia. Specifically, the study aimed at (a) assessing attribute and overall customer satisfaction, and (b) discussing the impact of online banking service attributes on overall customer satisfaction with online banking services.

In order to meet the study's objectives, the following main hypothesis and sub-hypotheses were proposed:

H_1: Online banking service attributes have positive and significant effect on the overall customer satisfaction with online banking services.

H_{1a}: Price has a positive and significant impact on overall customer satisfaction.

H_{1b}: Accessibility has a positive and significant impact on overall customer satisfaction.

H_{1c}: User-friendly approach has a positive and significant impact on overall customer satisfaction.

$H1_d$: Security has a positive and significant impact on overall customer satisfaction.

3.2 The questionnaire

In order to address research objectives, a questionnaire was developed. The foundation of questionnaire design in this study was literature review elaborated in the theoretical part of the paper, and questionnaires used by banks when conducting similar surveys. The questionnaire included 17 items and was divided in three parts.

The first part was designed for measuring customer satisfaction with online banking services. This concept was operationalized with attribute and overall customer satisfaction measures. Attribute customer satisfaction measures represented four variables, namely price, accessibility, user-friendly approach and security. The overall customer satisfaction was measured with one item. All customer satisfaction variables were rated on a 6-point scale, ranging from "very dissatisfied" (1) to "very satisfied" (6).

The second part of the questionnaire included seven items regarding the use of online banking services: bank's name, user type, device for using the service, location, years of online banking

experience, frequency of online banking, and the most frequently used services. These variables were measured using nominal scale.

Respondents' demographic information was included in the questionnaire's third part and it referred to respondent's gender, age, level of education, county of residence, and economic status. These characteristics were measured using nominal scale.

3.3 Sampling procedure

The target population in this study were online banking customers in Croatia. Thus, a sample consisted of individuals who use online banking services and were willing to participate in the research.

Data were gathered from April to June 2013, using online questionnaire. The link to the questionnaire was distributed via e-mail, with the request to forward it to other addresses, if possible. Of 203 returned questionnaires, 32 were not included in the analysis because they were incomplete. Therefore, data collection resulted in a sample of 171 valid questionnaires.

3.4 Data analysis

The collected data were analyzed using the SPSS 19 statistical software. Data analysis included descriptive statistics, correlation analysis and multiple regression analysis.

Descriptive statistics was used to examine respondents' demographic profile and their online banking habits, as well as to assess attribute and overall customer satisfaction with online banking services. This method was used to meet the first research objective.

Correlation analysis and multiple regression analysis were used to explore how the attribute customer satisfaction variables were related to the overall customer satisfaction, addressing the second research objective. Specifically, correlation analysis was performed to assess relationships between each service attribute and overall customer satisfaction. At this stage, sub-hypotheses were tested (H_{1a} – H_{1d}) using Pearson correlation coefficients. In addition, multiple regression analysis was used to examine the relationship between the combination of service attributes and overall customer satisfaction. This is a useful technique that can be used to analyze the relationship between a single dependent variable and several independent variables (Hair et al., 2006). Hence, multiple regression analysis was conducted to test the main research hypothesis. The latter analysis was performed using confirmatory (simultaneous) approach.

4. RESULTS

The results are presented as follows. Firstly, demographic profile of the respondents and their habits regarding the use of online banking services are presented. Next, the relationship between attribute and overall customer satisfaction with online banking services is examined.

4.1 Demographic characteristics and the use of online banking services

Detailed descriptive statistics relating to the respondents' profile is presented in Table 1.

Table 1. Descriptive statistics of respondents' characteristics (N=171)

Characteristics	Percentage	Characteristics	Percentage
Gender		*Age*	
Male	35.1	15 - 24	18.7
Female	64.9	25 - 34	29.2
		35 - 44	35.7
Level of education		45 - 54	14.0
Secondary school	36.3	55 - 64	2.3
Higher education	30.4		
University and higher	33.3	*County of residence*	
		Istra	9.4
Economic status		Primorje-Gorski Kotar	72.5
Student	19.9	Sisak-Moslavina	3.5
Employed	69.6	Varaždin	5.3
Unemployed	8.2	Other	9.4
Retired	2.3		
		User classification	
Bank's name		Citizen	87.7
Splitska banka	2.9	Business	1.8
Zagrebačka banka	15.8	Both	10.5
Privredna banka Zagreb	28.1		
OTP banka	4.7	*Online tool*	
Raiffaisen	7.0	Personal computer	59.1
Erste banka	33.3	Laptop	33.3
HPB	4.1	Mobile phone	7.6
Other	4.1		
		Location	
Years of online banking experience		Home	84.2
1 - 3	29.2	Office	13.4
3 - 5	19.3	Other	2.4
5 - 7	20.5		
7 - 9	4.7	*Frequency of online banking*	
More than 9	11.1	Once per day	11.7

Characteristics	Percentage	Characteristics	Percentage
Without answer	15.2	More times per day	8.2
		Once per week	25.2
Most frequently used services		Twice per week	23.9
Account balance and turnover	48.5	Once per month	10.5
Transfers between accounts	5.3	Twice per month	20.5
Account payments	42.7		
Exchange rates	0.6		
Buying, selling and transfer of shares in investment funds	2.9		

Source: authors

As presented in Table 1, female respondents (64.9 per cent) outnumbered male respondents in the sample. Nearly two-thirds were in the age group between 25 and 44, and about 70 per cent were employed. The respondents were almost evenly distributed across different levels of education (approximately one-third in each level). The majority of respondents (72.5 per cent) was from Primorje-Gorski Kotar County, and used online banking service as citizens (87.7 per cent). About one-third were clients of Erste bank. Furthermore, the majority of respondents accessed online banking services from a personal computer (59.1 per cent), and from home (84.2 per cent). Almost half of the respondents had between 1 and 5 years of online banking experience, and about one-fourth used online banking services once per week. The most frequently used online banking services were insight into account balance and turnover (48.5 per cent) and account payments (42.7 per cent).

4.2 Antecedents of overall customer satisfaction

Table 2 indicates that the respondents were mostly satisfied with the accessibility of online banking services (mean = 5.05), followed by user-friendly approach (mean = 4.87), service security (mean = 4.84), and price (mean = 4.18). What is more, the overall customer satisfaction with online banking services was 4.96. These values indicate high levels of customer satisfaction with online banking services, since all of them are highly rated.

Correlation analysis was used to examine the nature of the relationship between each service attribute and the overall customer satisfaction. In order to identify relative impact of attribute customer satisfaction variables on overall customer satisfaction, multiple regression analysis was employed.

Table 2. Customer satisfaction descriptive statistics and correlation matrix (N=171)

Customer satisfaction variables	Mean	SD	1	2	3	4	5
1. Price	4.18	1.099	1.000				
2. Accessibility	5.05	0.932	0.279	1.000			
3. User-friendly approach	4.87	0.854	0.314	0.562	1.000		
4. Security	4.84	0.877	0.378	0.563	0.631	1.000	
5. Overall customer satisfaction	4.96	0.800	0.397	0.555	0.492	0.578	1.000

Note: mean ranges from 1 to 6; SD – standard deviation; all correlation coefficients are significant at 0.01 level.
Source: authors

The correlation matrix (Table 2) indicates that attribute customer satisfaction variables were moderately correlated with the overall customer satisfaction. All the relationships were positive and statistically significant. According to the results, the variable "security" had the strongest correlation with the "overall customer satisfaction" variable ($r = 0.578$, $p < 0.01$), followed by "accessibility", "ease of use", and "price" ($r = 0.555$, $r = 0.492$, and $r = 0.397$, $p < 0.01$, respectively).

Although all attribute customer satisfaction variables were intercorrelated with each other, the correlation coefficients did not exceed cut-off value of 0.80, which means that multicollinearity problem did not occur in this research (Bryman, Cramer, 2009). Thus, it was justified to conduct a multiple regression analysis.

Table 3. Multiple regression analysis (N=171)

Model fit				
Multiple R	0.666			
R^2	0.444			
Adjusted R^2	0.431			
Standard error	0.603			
F ratio	33.132			
Significance	0.000			
Independent variable	*b*	*Beta*	*t*	*Sig.*
Constant	1.469		4.697	0.000*
Price	0.129	0.178	2.823	0.005*
Accessibility	0.251	0.293	3.947	0.000*
User-friendly approach	0.082	0.088	1.108	0.270
Security	0.265	0.291	3.596	0.000*

Note: Dependent variable: overall customer satisfaction; * - significant at 0.01 level
Source: authors

The multiple regression analysis revealed the following. The relationship between the combination of independent variables in the model and dependent variable is strong (R = 0.666). According to the coefficient of determination (R^2 = 0.444) and the adjusted coefficient of determination (adjusted R^2 = 0.431), four attribute customer satisfaction variables explained approximately 44 per cent of variance in overall customer satisfaction. Since R^2 value and adjusted R^2 value are very similar (adjusted R^2 decreased by only 0.013 points), the regression model in this research has a very good explanatory power of dependent variable. In addition, the significant *F*-ratio (F = 33.132, p < 0.01) suggested that the results of the employed regression model could not have occurred by chance and that the combination of independent variables significantly predicted dependent variable.

To assess the relative importance of each independent variable in determining the value of dependent variable, beta coefficients are provided. According to Table 3, three out of four independent variables significantly influenced overall customer satisfaction. The variable "accessibility" (β = 0.293, p < 0.01) had the highest statistically significant standardized coefficient. Therefore, this was the most important independent variable and had the highest impact on overall customer satisfaction. It was followed by the variables "security" (β = 0.291, p < 0.01), and "price" (β = 0.178, p < 0.01). The least important independent variable in this regression model was "user-friendly approach" (β = 0.088, p > 0.05), meaning that this service attribute had the smallest impact on overall customer satisfaction. In addition, this impact was not statistically significant.

However, since all variables were considered together, deletion of one independent variable (although not significant) can affect the significance levels of other independent variables (Leech et al., 2005). Therefore, the multiple regression model in this study has produced adequate and significant results, meaning that accessibility, security, price and user-friendly approach can be used as significant predictors of overall customer satisfaction with online banking services.

5. DISCUSSION AND CONCLUSION

The study reported here was designed to empirically examine the nature of the relationship between attribute and overall customer satisfaction in the online banking sector in Croatia. Using several methods of statistical analysis, objectives were achieved and hypotheses tested.

According to the findings, the respondents showed high levels of attribute and overall customer satisfaction with online banking services. The respondents were most satisfied with the accessibility of online banking services, while they were least satisfied with their price.

The findings of the correlation analysis showed positive and significant relationships between each attribute satisfaction variable and overall customer satisfaction. This evidence supported the hypotheses H_{1a} to H_{1d}. All attributes, namely "security", "accessibility", "price" and "user-friendly approach" were moderately related to overall customer satisfaction. These results suggested that increase in each attribute satisfaction variable is likely to lead to increase in the overall customer satisfaction with online banking services.

The multiple regression analysis indicated that attribute satisfaction variables are an important antecedent of overall customer satisfaction. The results revealed a strong, positive and significant

relationship between the combination of attribute satisfaction variables and overall customer satisfaction, implying that highly perceived "accessibility", "security", "price" and "user-friendly approach" lead to higher overall customer satisfaction in the Croatian online banking sector. In addition, about 44 per cent of variance in the overall customer satisfaction can be explained by these attributes. Thus, the explanatory power of the tested model in the online banking sector is rather satisfactory. These results have confirmed the hypothesis H$_1$.

The most important predictor of overall customer satisfaction in this study was the attribute "accessibility". According to the results, a one-unit increase in satisfaction with online banking service accessibility would result in 29.3 per cent increase in customer overall satisfaction with their online banking experience, other variables being constant.

"Security" turned out to be the second most important attribute affecting overall customer satisfaction. A one-unit increase in satisfaction with online banking service security would lead to 29.1 per cent increase in the customer overall satisfaction with their online banking experience, other variables being constant.

Furthermore, "price" appeared to be the third significant attribute influencing the overall customer satisfaction in this study. The results showed that a one-unit increase in satisfaction with price of the online banking service would result in 17.8 per cent increase in the customer overall satisfaction with their online banking experience, other variables being constant.

Finally, although Pearson's correlation coefficient between the attribute "user-friendly approach" and overall customer satisfaction implied a significant positive correlation, when three other attributes were considered in the model, this service attribute did not have a statistically significant impact on the overall customer satisfaction.

However, the combination of four attribute satisfaction variables tested in this study demonstrated significant impact on overall customer satisfaction. The findings confirmed that higher accessibility, security, price, and user-friendly approach increase overall customer satisfaction in the online banking sector. Therefore, bank managers should set priorities and continue to improve these important aspects of online banking services.

Similar findings were reported by Yoon (2010) and Kordnaeij et al. (2013). Yoon (2010) found out that security had a significant influence, while user-friendly approach did not have significant influence on customer satisfaction with online banking services in China. As Yoon (2010) suggested, a possible explanation why user-friendly approach did not have a significant impact on customer satisfaction may be due to increased customer online experience thanks to which customers do not have much trouble using online banking. Furthermore, Kordnaeij et al. (2013) stated that, among others, accessibility and security had a positive and significant impact on customer satisfaction in the Iranian online banking sector.

In respect to study's limitations, although the sample included respondents from different Croatian counties, the majority of them came from the Primorje-Gorski Kotar County. The sampling procedure may have influenced the sample structure, hence not representing the population as a whole, although it included respondents from different age groups, online banking experience and

habits. In addition, this study examined only four online banking service attributes that are likely to influence customer satisfaction.

Therefore, future research could focus on diversifying respondents further across different demographic variables in order to ensure more comprehensive results. Furthermore, other attributes of online banking service should be taken into consideration. Business-to-business aspect of online banking customer satisfaction could also be investigated. Additionally, future research should address the issue of relationship between customer satisfaction and loyalty in the online banking sector in Croatia.

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POVEZANOST ZADOVOLJSTVA POJEDINIM ELEMENTOM USLUGE I UKUPNOG ZADOVOLJSTVA KLIJENTA: PRIMJER USLUGA INTERNETSKOG BANKARSTVA[4]

SAŽETAK

Svrha ovog rada bila je istražiti povezanost zadovoljstva pojedinim elementom usluge i ukupnog zadovoljstva klijenta uslugama internetskog bankarstva. Osnovni cilj bio je utvrditi utjecaj zadovoljstva s četiri elementa usluge na ukupno zadovoljstvo klijenta. Upitnik za prikupljanje podataka sastoji se od triju dijelova. Prvo je mjereno zadovoljstvo klijenta uslugama internetskog bankarstva. Zatim su postavljena pitanja o korištenju usluga internetskog bankarstva. Treći dio sadrži pitanja o demografskim varijablama. Upitnici su ispitanicima poslani u obliku on-line ankete elektroničkom poštom. Prikupljen je 171 ispravno ispunjen upitnik. U analizi prikupljenih podataka korištene su metode deskriptivne statističke analize, korelacijska analiza i analiza multiple regresije. Rezultati pokazuju da dostupnost, sigurnost i cijena usluge značajno i pozitivno utječu na ukupno zadovoljstvo klijenta, dok je jednostavnost korištenja usluge pozitivno povezana s ukupnim zadovoljstvom, ali ta veza nije statistički značajna kada su uključene i druge varijable. Ovi rezultati ukazuju da poboljšanje dostupnosti, sigurnosti, cijene i jednostavnosti korištenja usluge internetskog bankarstva dovodi do više razine ukupnog zadovoljstva korisnika internetskog bankarstva.

Ključne riječi: *zadovoljstvo klijenta, usluge internetskog bankarstva, statistička analiza, Hrvatska.*

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