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THE INFLUENCE OF eWOM ON THE USE OF MOBILE BANKING

Uticaj eWOM komunikacije na korišćenje mobilnog bankarstva

Abstract

This paper builds on research by [20] and examines the influence of eWOM on factors such as social norms, initial trust, perceived usefulness, ease of use, attitude and intention of using mobile banking in the territory of Serbia. The survey was conducted by online and offline questionnaires completed by 501 respondents. The analysis was performed using SPSS22 and AMOS22 tools, where structural equation model (SEM) was used to test the direct influence of eWOM on social networks on the attitudes and intentions of clients to use mobile banking services. In response to the problem, we found a set of factors that influence the attitude and intention of clients to use mobile banking, which managers can emphasize when creating a marketing strategy.

Keywords: *eWOM*, *mobile banking*, *mobile financial services*, *survey*, *structural equation model*

Sažetak

Ovaj rad se nadovezuje na istraživanje [20] i ispituje uticaj eWOM komunikacije na faktore kao što su socijalne norme, početno poverenje, uočena korisnost, jednostavnost upotrebe, stav i namera korišćenja mobilnog bankarstva na teritoriji Srbije. Anketa je sprovedena pomoću onlajn i oflajn upitnika koji je popunio 501 ispitanik. Analiza je izvršena pomoću alata SPSS22 i AMOS22, gde je model strukturne jednačine (SEM) korišćen za testiranje direktnog uticaja eWOM komunikacije na društvenim mrežama na stavove i namere klijenata da koriste usluge mobilnog bankarstva. Kao odgovor na problem pronašli smo skup faktora koji utiču na stav i nameru klijenata da koriste mobilno bankarstvo, što menadžeri mogu naglasiti prilikom kreiranja marketinške strategije.

Ključne reči: *eWOM, mobilno bankarstvo, mobilne finansijske usluge, anketa, model strukturne jednačine*

Introduction

A mobile phone with an internet connection has become an integral part of users' lives, which gives banks enormous potential [22]. Therefore, the latest solution of banking channels that should make it easier for users to make micropayments is mobile banking [3], which, compared to the conventional banking, provides mobility, flexibility and ubiquity [18]. It is defined as the interaction with a banking institution and services through portable devices with instant internet connection [24], in order to electronically complete financial and non-financial transactions without the need for direct contact with a bank officer [23]. However, one of the main causes of failure in the innovation market is resistance among users in the form of functional (use, value and risk) and physical (tradition and image) barriers to the adoption of innovation [7]. Since mobile telecommunications and the wireless transaction environment involve immateriality and uncertainty, evaluating the quality of mobile banking is a difficult task for users [18]. Despite all the benefits, users are reluctant to accept mobile services, which may be partly because they are already accustomed to cheap online services with fixed internet [4], because not all users are predisposed to break their routine [23] and radically change behavior by adopting new banking channels [32], or because some of them have a need for the human factor, ie. face-to-face contact with a bank officer [23].

With the development of Internet technology that has enabled each individual online to connect with others, wordof-mouth communication has modified the transmission and exchange of information and adopted an online form commonly referred to as electronic word-of-mouth communication (eWOM) [36]. Hennig-Thurau (2004) defined eWOM as "Any positive or negative statement by potential, actual or former customers regarding a product or company, which is available to a multitude of people and institutions via the Internet." [34]. Before adopting any technology or before purchasing a product/service, consumers critically analyze the online reviews of other consumers, in order to make the best possible purchase decision [28]. This online search for information, where in a few clicks and seconds you can get extensive information related to the desired topic using eWOM, means that it will no longer be easy to have loyal users [12]. Banks must first have a good business strategy, they must decide which customer segments to target, which product / service values to offer [30] and which information technology and software solutions to use [31].

With regard to the fact that the information received from the internet sources and virtual communities have a significant influence on consumers' decision on whether to use mobile banking or not, this work examines the influence eWOM has on factors such as initial trust, social norms, perceived usefulness and simplicity of use, users' opinion and intention to use mobile banking in the context of the Republic of Serbia. The research problem is related to the weak diffusion of the use of mobile banking in the Serbian market, bearing in mind the number of users of banking services, the number of users of mobile devices and the banking development potential [11]. A review of the literature reveals claims by various authors that the information obtained from Internet sources and virtual communities significantly influences consumer decisions about the use of mobile banking [35], [20], [34]. The aim of the research is to obtain information on the extent to which eWOM influences factors such as social norms, trust, perceived usefulness and the simplicity of use of mobile banking, attitude and intention of customers to use it. The results of the research will suggest the factors that managers should bring closer to users and stimulate them to "talk" about it on the Internet, in order to encourage eWOM.

Literature review and hypothesis development

Perceived utility is the belief or subjective feeling of an individual that using mobile banking will improve their performance [4], [13] and lead to the achievement of their specific goals. Based on the results of papers such as: [1], [8], [17], [29] and many other previous studies in different environmental contexts that have concluded that perceived usefulness is the strongest predictor of customer behavior [19], the authors formed the following hypotheses:

H1. Perceived usefulness positively influences user attitudes.

H2. Perceived usefulness positively influences the user's intention to continue using mobile banking.

Simplicity of use represents the degree to which the user is willing to use the m-banking system without making effort [13], ie. to be sure that he will not experience physical and mental stress in certain aspects when using it [21]. Authors like [13], [15] and [23] mentioned that simplicity depends on the expertise of users. However, based on the results of papers such as: [8], [13], [17], [32], the authors hypothesize that banks should focus on achieving simplicity of use, because it has proven to be the factor with the greatest overall effect on the acceptance of mobile financial services [15].

H3. Perceived ease of use has a positive effect on perceived usefulness.

H4. Perceived ease of use has a positive effect on user attitudes towards mobile banking.

Social norms refer to the users' perception of other people's opinions (most often the opinions of people who are important to them [20] about whether the users should behave in a certain way. Other people's opinions usually influence the users' behavior because the users need to maintain their identification with the group and improve their social status [15]. These norms refer to the possibility that a recommendation from a family member / friend may increase the likelihood of using the mobile application [6]. Their influence on the users' intention of behavior is also confirmed by [9] and therefore the authors formed the following hypotheses:

H5. Social norms positively influence the perceived ease of use.

H6. Social norms positively influence the perceived usefulness of the mobile banking service.

Trust is related to security, privacy and practicality [10] and it is crucial for building long-term relationships between users and companies, especially in a risk-prone m-banking environment [24]. The level of trust comes under the influence of the lack of problems experienced in the past, and some users, even if they did not fully trust m-banking, still used it [27]. This is a necessary factor for using mobile banking, and some authors define it as an individual's willingness to take risks to meet a need without prior experience or significant information [20]. Therefore, the authors formed the following hypotheses:

H7. Trust has a positive effect on perceived ease of use.

H8. Trust has a positive effect on perceived usefulness.

Attitude is an indicator of behavior, which is formed before behavior (ie. before users evaluate the benefits of new channels and services that are influenced by social interaction and media messages [26]) and has positive effects on the intention to use mobile payment systems [9]. Attitudes explain user intentions [6] and can even predict them together with subjective norms and beliefs [23], so the authors formed the following hypothesis:

H9. The attitude has a positive effect on the intention to continue using mobile banking.

In today's technological age, customers have more interactions and pass on information that influences their decisions [35], and now it only takes a few seconds and clicks to spread useful information around the world [28]. Social networks have become a channel for consumers who can exchange their perceptions, attitudes or feedback about a company, goods and services and find useful information about them. Accordingly, the authors modified the part of the [20] survey concerning WOM, according to the [34] study examining the influence of eWOM on the use of mobile banking, and formed the following hypotheses:

H10. eWOM has an effect on perceived ease of use. H11. eWOM has an effect on perceived usefulness.

H12. eWOM has an effect on user attitudes.

H13. eWOM has an effect on the intention of users to continue using mobile banking

Research conducted by [2] and other authors listed in their work proved that eWOM has a positive effect on subjective norms. Positive eWOM can increase consumer intentions to choose and buy a particular brand, because online brand recommendations and offers create a positive image and increase customer trust and loyalty, and in turn such behavior can improve customer attitude and intention to use the brand [35]. Accordingly, the authors formed the following hypotheses:

H14. eWOM has an effect on social norms.

H15. eWOM has an effect on initial trust.

Proposed model

The model taken from the research of the authors [20], was modified in accordance with [34], so that it reflects

the influence of eWOM on the use of mobile banking. The adapted model is shown in Figure 1 below.

Results

The target population included all the respondents, no matter if they are using, not using, or used to use the service of mobile banking, as well as the respondents who are using or used to use social media. The questionnaire was designed including 34 questions 5 of which were about demographic characteristics, and 27 were translated and adapted to the survey [20], with 1-7 Likert scale. Two questions were added about whether the respondents are using or used to use mobile banking services, as well as if they are social media users. In accordance with [28], both online and offline methods were used in order to increase the number of respondents and improve the possibility of generalization of the results, and in order for the weaknesses of one method to be overcome by the strengths of the other.

The size of the population of bank clients whose attitudes are being studied here was not known at the moment this work was being written, so the validity of the sample size is checked by Cochran formula:

$$n = \frac{Z^2 p(1-p)}{e^2}$$

In this formula is the desired level of accuracy, *p* is the rated share of the population that meets the criteria of the research, and *z* represents the corresponding *z*-value from the table. Since there is no specific reason to assume

that the majority of the respondents would or would not use mobile banking before the analysis itself, we take the *p* to be 0,5. With the 95% level of trust and the 5% error allowance, the valid sample size should be at least 385.

The total number of respondents that took part in the study is 501. All the respondents answered all the questions, so there are no missing values in the database. From the entire sample, 23 respondents said they did not use social media. With regard to the goal of the research, and that is establishing the social media eWOM effect on mobile banking, these respondents' answers were not taken into account. So the sample for the research includes the total of 478 respondents. This number of respondents is somewhat higher than the number reached through Cochran formula, which will slightly increase the accuracy in the conclusion making process.

Looking at the demographic characteristics of the sample users of social media who expressed their opinion on mobile banking through the study, we can notice that the majority of the sample is the population aged 21-35 (65,7%) that vastly uses mobile application services for their activities. When it comes to education, most people are college-educated (50,8%), then come the people with secondary-school education (29,7%) and those with a twoyear degree (11,9%). Also, as many as 323 respondents, 67,6% of the total number, are the employed respondents, whereas the retired population is the scarcest (0,8%). The employed respondents are the more representative sample because, searching for ways to improve the management of their finances, they regularly use mobile banking and other sorts of digital technologies, unlike other respondent



Picture 1. Used model adapted from [20]

structures. Asked if they use or have ever used mobile banking on their smart phone, 338 respondents replied affirmatively, which means 70,7% of the total sample.

In order to check the validity of the study as a measuring instrument, as well as the suitability of the measured indices for measuring latent variables in the model, the CFA – confirmatory factor analysis will be carried through. We confirm the validity of the questionnaire and the gathered data by testing several factors such as internal reliability of the test, suitability of the data for factor analysis, convergent validity, and discriminant

validity. Latent variables in this work include eWOM, perceived simplicity of mobile banking use, perceived usefulness of mobile banking, attitudes, social norms, intention of use, trust, and they were all measured by using the questions asked in this questionnaire. Table 1 features the questions used to describe latent variables with the belonging mean values of the responses, standardized estimates of factor loadings, t-values and the values of the coefficient of determination R^2 .

Internal reliability of the test is checked based on the value of Cronbach's alpha coefficient whose values

Latent variable	Questionnaire item	Mean value	Factor loading	t-value	<i>R</i> ²
Perceived usefulness	Mobile banking would speed up my banking activities	6,00	0,945	-	0,893
	Mobile banking would come in handy for completing my banking activities	6,02	0,936	40,918	0,875
	I think using mobile banking would improve the way I complete my banking activities	5,99	0,918	37,798	0,843
	Mobile banking would make completing my banking activities easier	6,05	0,933	40,314	0,871
	Interaction with mobile financing services is straightforward and clear	5,48	0,845	-	0,715
Perceived	It would be easy to learn how to use mobile banking	5,91	0,88	24,995	0,775
simplicity of use	It's easy for me to manage the services of mobile banking	5,84	0,888	25,36	0,788
	I think I can easily become skilled at using mobile banking	6,10	0,85	20,235	0,722
	People I care about would suggest using mobile phone payment services	5,66	0,926	-	0,857
	People I care about would consider mobile phone payment services useful	5,76	0,919	30,942	0,845
Social norms	People I care about would think using mobile phone payment services is a good decision	5,68	0,869	27,114	0,756
	There are many people around me who use mobile phone payment services	5,44	0,591	14,682	0,35
	I think mobile banking service is reliable	5,62	0,845	-	0,714
	Mobile banking service is created to help the clients	5,90	0,843	22,858	0,71
Irust	I think banks fulfill their obligations in the field of mobile banking	5,44	0,849	23,712	0,721
	I believe my bank offers a secure mobile banking service	5,75	0,857	23,534	0,734
	I will discuss the advantages of mobile banking with the people I know on social media	4,06	0,522	-	0,273
EWOM	I will advocate the positive aspect of mobile banking on social media	4,25	0,614	20,635	0,377
	If anybody asks me about mobile banking on social media, I will definitely recommend it	5,26	0,973	9,66	0,946
Users' opinions	Using mobile banking is in line with my lifestyle	5,69	0,797	_	0,635
	Using mobile banking corresponds with the majority of services banks offer in their branch offices	5,60	0,806	19,688	0,65
	Using mobile payment is a good idea	6,22	0,902	23,088	0,814
	Using mobile payment is useful	6,21	0,931	20,675	0,867
Use intention	I am going to use mobile banking services	6,01	0,944	-	0,891
	I want to get more information on mobile banking	5,70	0,594	15,284	0,353
	I am going to use mobile banking services to make payments	5,90	0,926	37,195	0,857
	I want to manage my bank accounts through mobile banking	5,99	0,933	32,605	0,871

Table 1. Values of the main statistics for the measurement model: mean value, factor loading, t-value and R²

for each group of questions should not be less than 0,7. Whether the data is suitable for factor analysis is checked by Kaiser-Mayer-Olkin (KMO) test of the sample adequacy and by the Bartlett test of sphericity. KMO index should be higher than 0,6 while the significance of Bartlett test should be less than 0,05. Composite reliability (CR) and the average variance extracted (AVE) are the indices of convergent validity. The referent values for these two factors are CR > 0,7 and AVE > 0,5. The discriminatory validity is established by the correlation between the latent variables. It is confirmed if the value of AVE is higher than the squared correlation between the corresponding variables. Based on the values of validity indices given in the Table 2 we get to the conclusion that the questionnaire is reliable and valid.

Table 3 contains some of the most common indices that denote the quality of the model. Although the value $\chi^2 = 1066,28$ is statistically significant at the level p < 0,01 (df = 292), judging by the rest of the indices, it can be concluded that the quality of the measurement model is good.

After having assessed both the questionnaire validity as a measuring instrument and the suitability of the model by the confirmatory factor analysis, in order to test the direct influence eWOM has on social media on clients' opinions and intentions of using mobile banking services, we shall use the SEM – structural equation model. Table 4 presents the standardized path coefficients, whereas the coefficients of model fit are given in Table 5.

From the results it is deductible that the hypotheses H6, H8 and H11 are not acceptable even at the significant level of 10%. This result implies that based on the respondents' answers in the questionnaire we cannot conclude that social norms, initial trust and eWOM have any confirmed influence on the perceived usefulness of mobile banking.

The results showed that the perceived usefulness has a positive effect both on the users' opinions ($\beta = 0,313, p$ < 0,01, and on their intentions of using mobile banking in the future ($\beta = 0,200, p < 0,01$). Likewise, perceived simplicity of use has a positive effect on perceived usefulness $(\beta = 0.716, p < 0.01)$ and the users' opinions $(\beta = 0.247, p < 0.01)$ p < 0.01). When it comes to social norms, it turned out they have a positive effect on the perceived simplicity of use ($\beta = 0.510$, p < 0.01), but the positive effect of social norms on the perceived usefulness could not be confirmed herein. The same conclusion is reached about the effect on the perceived simplicity of use where the existence of the positive influence is confirmed ($\beta = 0.942, p < 0.01$), whereas the hypothesis about the positive influence on the perceived usefulness is rejected. The expected result that the users' positive opinion has a positive effect on the intention of using mobile banking has been confirmed with the high value of the factor $\beta = 0,905$ (p < 0,01). The vital group of hypotheses for our research includes the

	PU	PSU	SN	Trust	EWOM	UO	UI	CR	AVE	КМО	Bartlett significance
PU	0,967							0,964	0,871	0,855	0,000
PSU	0,816	0,914						0,923	0,750	0,829	0,000
SN	0,645	0,778	0,891					0,901	0,702	0,812	0,000
Trust	0,691	0,815	0,729	0,909				0,911	0,720	0,847	0,000
EWOM	0,450	0,507	0,563	0,629	0,854			0,760	0,532	0,650	0,000
UO	0,780	0,815	0,697	0,847	0,563	0,894		0,981	0,741	0,782	0,000
UI	0,813	0,785	0,650	0,769	0,554	0,858	0,901	0,918	0,743	0,821	0,000

Table 2. Correlation matrix, Cronbach's alpha, CR, AVE, KMO, Bartlett significance

Note: Diagonal entries are Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted; KMO = Kaiser-Mayer-Olkin statistics; PU = perceived usefulness; PSU = perceived simplicity of use; SN = social norms; UA = users' opinions; UI = use intention.

Table 3. Measures of goodness of fit for the measurement model

Statistics	χ^2/df	AGFI	CFI	NFI	TLI	RMSEA
Obtained values	3,652	0,805	0,945	0,926	0,933	0,075
Suitable values	$1 \le \chi^2/df \le 5$	$AGFI \ge 0,8$	$CFI \ge 0,9$	$NFI \ge 0,9$	$TLI \ge 0,9$	$RMSEA \leq 0,08$

Note: df = number of degrees of freedom; AGFI = adjusted goodness of fit index; CFI = comparative fit index; NFI = normed fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error approximation.

Path Standardized coefficie		t – value	Hypothesis
PU ->UO	0,313***	5,583	H1 - accepted
PU->IU	0,200**	2,519	H2 - accepted
PSU->PU	0,716***	7,459	H3 - accepted
PSU->UO	0,247***	3,789	H4 - accepted
SN->PSU	0,510***	7,505	H5 - accepted
SN->PU	0,067	0,672	H6 - rejected
Trust->PSU	0,942***	5,754	H7 - accepted
Trust->PU	0,148	0,678	H8 - rejected
UO->IU	0,905***	5,521	H9 - accepted
EWOM->PSU	-0,555***	-2,687	H10 - accepted
EWOM->PU	-0,109	-0,460	H11 - rejected
EWOM->UO	0,517***	7,347	H12 - accepted
EWOM->IU	-0,208*	-1,830	H13 - accepted
EWOM->SN	0,764***	9,079	H14 - accepted
EWOM->Trust	0,903***	9,260	H15 - accepted

Table 4. Results of the structural model

Note****** denote the levels of significance from 10%, 5%, 1%, respectively for rejecting a hypothesis; PU = perceived usefulness; PSU = perceived simplicity of use; SN = social norms; UO = users' opinions; IU = intention of use.

Statistics	χ^2/df	AGFI	CFI	NFI	TLI	RMSEA
Model values	4,124	0,801	0,935	0,917	0,924	0,079
Reference values	$1 \le \chi^2/df \le 5$	$AGFI \ge 0,8$	$CFI \ge 0,9$	$NFI \ge 0,9$	$TLI \ge 0,9$	$RMSEA \leq 0,08$

Note: df = number of degrees of freedom; AGFI = adjusted goodness of fit index; CFI = comparative fit index; NFI = normed fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error approximation.

hypotheses H10 – H15. These hypotheses establish the positive influence eWOM has on the other factors of the research. Except for the perceived usefulness, as we have already mentioned, the results confirm the positive effect of eWOM on all the other factors.

Comparing the results reached herein with the [2] results, these authors rejected the hypothesis that trust has a positive effect on the perceived simplicity of use, while this research has accepted that hypothesis, but rejected the one about the positive effect the trust has on the perceived usefulness. Besides the mentioned hypothesis, this research has also rejected the hypotheses about the influence of social norms, initial trust and eWOM on the perceived usefulness of mobile banking.

Discussion

Accepted hypotheses 1 and 2 show that perceived usefulness is a strong predictor of user behavior [19], and also one of the most important implementation tasks [9], which influences a positive attitude and desire to use a mobile banking service. Accepted hypotheses 3 and 4 implicate that managers in Serbia should concentrate on emphasizing points of interest and benefits offered by the mobile banking application [32], demonstrating that the applications are not complicated to use and that they are possibly available for testing before using [15] if they want to attract new users [27], which can be done by uploading video demonstrations on social media [33] and by providing live-chat and video calls of support to the users [24]. Hypothesis 5 concerning the positive impact of social norms on perceived ease of use was confirmed, while the same impact on perceived utility in Hypothesis 6 was rejected. That shows, in the mentioned sample that the users' perception of other people's opinion could have influence on whether a user considers usage of the application easy, which once again stresses the necessity of applications being simple to use. Hypothesis 7 on the positive influence the initial trust has on the simplicity of usage is accepted, but the same influence on the perceived usefulness in Hypothesis 8 is rejected, which means that promotional efforts of the management should be directed, among other things, towards pointing out that the mobile banking application is safe, worth the user's

trust [3] and that there is a policy of protection from financial losses [18]. Accepted hypothesis 9 confirms that users form opinions and take certain attitudes before they evaluate the benefits of new channels and services under the influence of social interaction and media-propagated messages, and that is why it is important that the bank directs its efforts, among other things, at eWOM [26]. The analysis of the hypotheses 10-15 has shown that the mutual interactions among the users of mobile banking can influence the perception of simplicity of its use, the socially acceptable behavior, initial trust that users can have towards mobile banking, as well as the opinions and intentions of clients to use it. However, in the mentioned sample, eWOM does not have any notable influence on the perceived usefulness, which the authors to a certain degree relate to the subjective feeling of the present and potential users about how purposeful mobile banking is and how useful it can be in their lives. The fact that we can get online information on how useful mobile banking is to a certain number of users, it does not necessarily mean it will be useful to us as well. Promotional efforts should be directed, among other things, at pointing to the fact that the interface is easy to master and use and that the application is safe and trustworthy, so that promotional messages would help banking industry to attract new clients, keep the present ones, and expand the usage of mobile banking. In this way the emphasis is put on the factors which have proved to be important in this research, the ones that eWOM has influence on. The research indicates the need for managers to capture the opinion leaders who have a normative power to exert their influence on the others in order to attract mobile banking users and stimulate them to "discuss" the mentioned factors on the Internet.

Limitations and future research

Due to the fact that the sample of respondents is from the territory of Serbia, the interpretation of the results may not be relevant for the other developing countries, which is one of the limitations of this study. Also, almost 74% of the respondents are under 35 years old, so the sample does not include all age categories equally. Another limitation

is that the model is cross sectional, meaning that the users' perceptions and intentions which are variable, are measured at one point in time, so the longitudinal survey would be a better option for future research. Likewise, demographic factors were not taken into account, so future research could consider demographic constructions like gender, age, income, education, etc. Finally, the research can be expanded so that it includes some other factors influenced by eWOM, whereas significant information can be received by doing research from the angle of factors influencing the user's wish to spread eWOM.

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EKONOMIKA PREDUZEĆA



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