Indian Journal of Science and Technology, *Vol 8(17), DOI: 10.17485/ijst/2015/v8i17/69926, August 2015*
ISSN (Print) : 0974-6846
ISSN (Online) : 0974-5645

Users' Value Perceptions of New Communication Technologies and Their Willingness to Pay: A Case Study of Mobile Banking

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Abstract

Background/Objectives: The purpose of the current research is evaluating the various dimensions of users' perceptions of mobile banking by applying the theory of consumer values and determining those dimensions which can convince users to be loyal to this kind of communication channel and the supplier bank although the price increases. **Methods/Statistical Analysis:** The positive and direct effects of monetary, social, conditional, convenience, cognitive and emotional value perceptions on willingness to pay more were investigated in this research. The research applied convenience sampling method. The sample size was 400 according to the Kreceji and Morgan's sample table. 105 questionnaires returned by respondents and 93 ones were analyzed showing 26% response rate. The structural equation modeling applied using Smart–PLS Software to analyze data. **Findings**: The findings showed that it is only the emotional value of technology use which can convince users to be loyal to the communication channel even though the price increases. Therefore, it can be concluded that entertainment and joyfulness of doing banking affairs through cell phone can influence the overall evaluation of customer from the obtained benefits in exchange for expenses, i.e perceived value, and contributes to the loyalty of customers to this communication channel and the bank offering this services. It also shows that low price is not the only way of being successful in the market forever but it is possible to make more profit by creation and innovation through emphasizing on entertainment and joyfulness of mobile banking services along with the price increase. **Application/Improvements**: The finding of this study is useful for all banks offering mobile banking in order to determine their strategies in business level.

Keywords: Cell Phone, Communication Technologies, Loyalty, Mobile Banking, Perceived Value, Price

1. Introduction

The concept of value has been noticed in the managerial researches in recent years. Among the several issues related to this concept, the role of customer value as a source of sustainable competitive advantage has been received may attentions. In fact, the customer value is the main concern of manufacturing and service organizations in the current growing competitive environment. The words of value creation and value transfer were common and increasing in the marketing researches in 90s. The 4p marketing concept transferred to the communication networks and mutual relations in that time. At the same time, the concept of relationship marketing emerged. This concept emphasizes on the development of trust between seller and buyer along with mutual satisfaction of expectations with the overall purpose of value creation for both parties in the transaction process[1].

The researches available in the marketing context focus on the importance of customer value. Those com-

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panies which can supply valuable products for customers will gain a significant competitive advantage. So, both managers and researchers must regard the customers' evaluations of a product as an important issue[2,3]. Additionally, customer perceived value help to explore the different characteristics of consumer behavior such as word of mouth and repurchase intentions[4] showing the importance of this concept as one of the ways of customer commitment especially in the service sector, since services are intangible and it is not possible to assess them before purchase. According to Zeithaml[5], customer perceived value implies the customer's overall evaluation of customer of a product utility based on what he has received. Woodruff[6] believes that the concept of value is changing according to the location of the customer.

The concept of value is turning to a critical strategic factor in gaining competitive advantage and it is being conceived as the main building block in the development of relationships. In fact, Ulaga and Eggert[2] mentioned the relational value as the perquisite of relationship quality and behavioral outcomes in relationship marketing model.

Regarding the importance of customer perceived value in the success of firms, it is required to evaluate the possible outcomes of this value. For this reason, the experimental studies showed that the concept of customer perceived value can be effective for clarifying the consumers' behavioral decisions since it is part of the consumer's behavior[5,7–16]. Loyalty, commitment, trust, satisfaction, customer complaint, word of mouth and decision of not purchasing the goods and services can be pointed out as the consumer's behavioral decisions.

1.1 Mobile Banking

The rapid growth of information technology has influenced the banking industry throughout the world in a way that these innovations have allowed to create new methods for supply of banking services; one of these methods is mobile banking[18]. Mobile banking is a form of bank transactions which is done through cell phones. This form of banking enables the users to check their account balance, perform bank operations through their credit cards and get informed from their previous account transactions[19]. The other advantage of mobile banking is removal of time and place restrictions in banking services. It means that the user can carry out all bank affairs easily wherever and whenever the access to cell phone is possible in all day. Thus, it can be claimed that if internet banking services bring economical benefits for banks, mobile banking services will not be beneficial just for banks but it can be considered as a way for bringing value added to users[20].

Offering banking services through cell phone contributes to competitive advantage by reinforcing the relationship with users[21]. Supplying profitable services needs long term relationships with user and perception of the factor which can influence the commitment of consumers to service suppliers and their repurchase intentions[21]. Since the number of mobile banking users is restricted, the service contents must be valuable for users in order to convince them to pay for the cost of services and continue their use for long time after the first use[22]. Lack of awareness about the needs and wants of the final clients and inability to maintain the test users of new technologies may easily contributes to failure in the market. In this case, it is proved that value perceptions can be fruitful since they are linked with purchase behavior. Therefore, these companies have to supply services which users regard them valuable[23].

1.2 Customer Perceived Value

Customer Perceived Value (CPV) is the value which customers perceive they receive or experience in exchange for use of a service; the value which directs the purchase behavior[24]. CPV is regularly defined in service marketing literature as "Overall evaluation of a product utility based on the perceptions obtained from what is received and paid"[5]. Traditionally, CPV is based on customers' experiences and perceived as an exchange between benefits and costs[25,26] or between quality and costs[27,28] which can be divided to monetary and psychological costs[29]. These costs were initially consisted of monetary ones such as price and acquisition expenses but they involved the non–monetary price and risk of poor performance in next[27,30]. In recent studies, benefits and costs factors related to place and time which are important in electronic banking were identified as the components of benefit and cost of value[31]. Traditionally, overall customer perceived value was measuring by one or multi-dimensional scales emphasizing the price perceptions[29,32–36].

According to Pura[23] monetary value is not suitable for customer perceived value in cell phone context. Pura and Gummerus[37] supported this opinion that monetary costs have trivial role in customer's perceptions of cell phone services. Moreover, another study showed that

the monetary value is not as important as convenience and conditional values[38]. Additionally, convenience and emotional values are more significant for users of informational and entertainment services of cell phone in comparison with monetary value[23].

The perceived value in this study is defined as a multi–dimensional construct involving monetary, convenience, emotional, social, conditional and cognitive values. This multi–dimensional view to value is highly recommended especially in cell phone context because the recent research results indicate that perceived value must include the time and place in which service is supplied[23]. The perceived value dimensions in this research are based on the theory of consumer values proposed by Sheth et al.[17]. The main five consumer values, performance, emotional, social, cognitive and conditional, suggested by him and his colleagues were designed for analysis of goods purchase decisions and traditional brands. So, although value dimensions, except performance value, are constant in this research but it is required to make some changes to adapt these value measures with the context of cell phone services. Sweeney and Soutar[15] stated that performance value have two dimensions of monetary and performance values which have to be evaluated separately. Thus, the performance value is divided into two constructs of monetary and convenience values in this research.

1.3 Willingness to Pay More

The overall perceived value has a positive effect on willingness to pay more for buying goods and services[39]. The results of a research on a control group in Europe showed that users of cell phone entertainment services are generally willing to pay more in exchange for these services providing that they afford it[40]. There are few researches about the direct effects of value perception dimensions on willingness to pay more but there some signs that social interactions may improve the willingness to pay more[41]. This willingness can be considered as price sensitivity. It means that the more sense of belonging and arousal created by services the less sensitivity of customers to the price. Customers may be willing to pay more for the value which is not attainable easily which is especially true in the context of cell phones. Customers may pay more for cell phone services in comparison with other communication channels[42]. According to the Pura[23]'s findings, monetary, emotional and social values have a positive effect on willingness to pay more for services supplied by cell phones.

Based on the literature review, it is assumed in this research that six dimensions of perceived value in mobile banking context have direct and positive effects on customers' willingness to pay more in exchange for mobile banking services. Therefore, these six dimensions are considered as the independent variables and the willing-

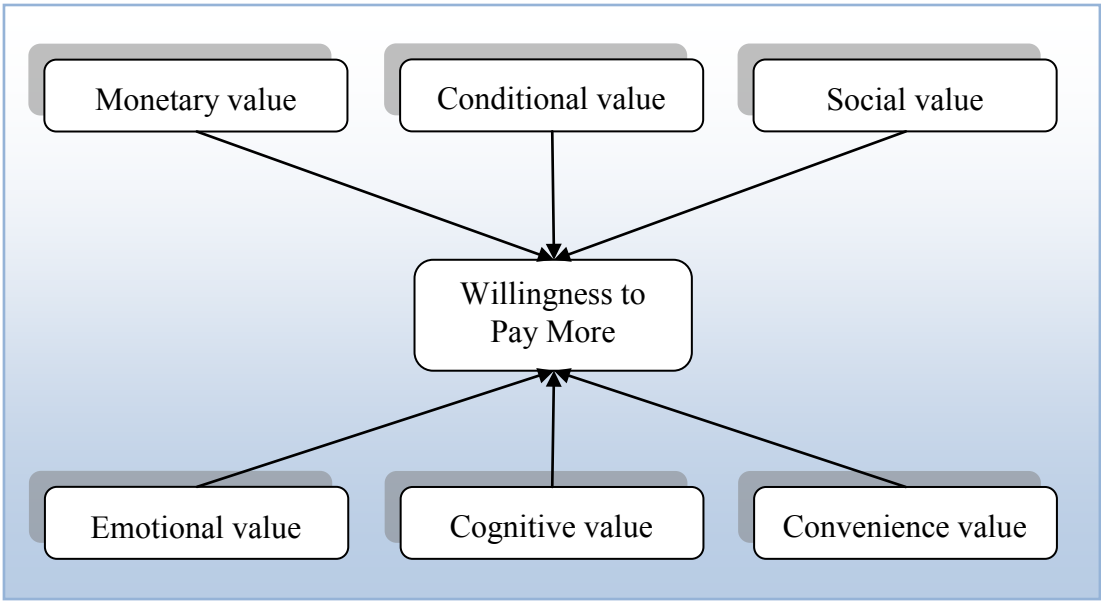

Figure 1. Research conceptual model.

Table 1. Operational definition of variables

Variable	Definition
Social value	The social confirmation or self-esteem among friends and relatives due to the use of cell phone for banking services.
Conditional value	Using banking services in any desired time and place.
Monetary value	Cost-effectiveness of mobile banking compared to other methods.
Convenience value	Easiness, speed and thrift in time and efforts.
Cognitive value	Value derived from innovation and learning new methods of banking.
Emotional value	Entertainment and pleasure of banking through cell phone.
Willingness to pay more	Continued use of mobile banking and loyalty to the supplier bank when the price increases.

ness to pay more is regarded as dependent variable. The relationships among these variables have been depicted in Figure 1. The operational definitions of variables are also summarized in Table 1.

2. Research Hypotheses

H1: Social value has a direct and positive effect on consumer's willingness to pay more.
H2: Emotional value has a direct and positive effect on consumer's willingness to pay more.
H3: Conditional value has a direct and positive effect on consumer's willingness to pay more.
H4: Monetary value has a direct and positive effect on consumer's willingness to pay more.
H5: Convenience value has a direct and positive effect on consumer's willingness to pay more.
H6: Cognitive value has a direct and positive effect on consumer's willingness to pay more.

3. Research Methodology

The current study is an applied research in terms of purpose and descriptive in terms of data collection. The statistical population of the research is all users of mobile banking in Mashhad, Iran. Since there was no specific information database and non–random sampling is often used in mobile banking studies[43,44], the current research applied convenience sampling method. The research tool was 7–points like scale questionnaire based on which it is possible to measure the respondents attitudes toward a factor. The sample size was 400 according to the Krecji and Morgan's sample table. 105 questionnaires returned by respondents and 93 ones were analyzed showing 26% response rate which can be due to the newness of the research subject and low level of mobile banking use in Iran. The structural equation modeling used to measure the research model. Preventing any weakness in the model estimation, Smart–PLS Software applied which enables generalization of the results to statistical population with small sample sizes.

4. Data Analysis

4.1 Demographics

The participants included 28% female and 72% male, 20% single and 80% married, 39.8% with the ages of 20–30, 36.5% with the ages of 31–40 and 23.7% with the ages of 41–50. 63% of respondents had academic education.

4.2 Findings

Structural Equation Modeling (SEM) was applied to analyze the research model. SEM is a statistical model investigating the linear relationships between the latent variables and the explicit ones. In other words, SEM is

a strong statistical technique combining the measurement model (confirmatory factor analysis) and structural model, (regression and path analysis) with one statistical test simultaneously. Researchers can reject the assumed structures, models, or confirm their consistency with the data. Smart–PLS Software analyzes the structural equation models which contain several variables with direct, indirect and interactive effects[45].

KMO and Bartlet's goodness of fit test applied for factor analysis. The KMO value changes between 0 and 1. This value must be larger than 0.5 for good sample. Since the value is 0.81 for this research, according to table 3, it can be concluded that factor analysis is suitable for this collection of data. The Bartlet's size also tests this assumption that primary correlation matrix is an identity matrix. The requirement for conducting factor analysis is that the correlation among variables must not be zero. The significance of Bartlet test means that the correlation matrix is not an identity matrix and there is correlation among variables which enables the conduct of factor analysis.

Table 2. Tests of goodness of fit for factor analysis

KMO		0.81
Bartlet test	Approximate k^2	1146.47
	df	190
	Sig.	0.000

According to Table 3, the P–value is less than 0.001 implying the appropriateness of the factor analysis.

4.2.1 Content and Face Validity

This research used Pura[23]'s standard questionnaire. Even though, the research tool was validated by obtaining the recommendations of experts in banking and marketing industry. So, the face and content validity were satisfied.

4.2.2 Reliability

Model estimation involves the evaluation of internal consistency and convergent and discriminant validity to obtain construct validity[46,47]. The internal consistency is calculated by Cronbach alpha and Fornell Composite Reliability (CR)[48]. The Cronbach alpha for all variables in this research were larger than the minimum value of 0.60[49], 0.6550, or 0.70[49,51]. According to Table 3, the composite reliability of all constructs is larger than 0.70 indicating the internal consistency of research tool. All values related to the Average Variance Explained (AVE) of constructs were larger than 0.50 which shows that more than 50% of measurement indices variances can be obtained by the constructs.

4.2.3 Construct Validity

The construct validity is tested by convergent and discriminant validity[52]. The convergent validity is supported providing that all factor loadings are larger than 0.50[53,54]. As results showed, all factor loadings in this research are larger than 0.50 confirming the convergent validity of the research tool.

Average Variance Explained (AVE) can be applied to evaluate the discriminant validity. The AVE for each construct must be larger than the divided variance between that construct and other variables available in the model[48]. Discriminant validity can be obtained by observation whether the correlations among variables are less than the square root of AVE. Table 4 indicates that square root of AVE for each construct is larger than its paired column correlations showing the discriminant validity among variables. Thus, the construct validity is confirmed since both convergent and discriminant validity was supported.

4.2.4 Structural Model Analysis

Structural model estimation involves the estimation of β coefficients and R^2. Both values imply the model goodness of fit[26,29]. Table 5 presents the results of model estimation and hypothesis testing. As it can be observed, only the significance of emotional value was accepted (β=0.38, t=2.51). Additionally, R^2=0.57 for the dependent variable of willingness to pay more which can be inferred that 57% of changes in this dependent variable is explained by an entering variable, emotional value. The summary of the obtained results has been shown in Table 5.

5. Conclusion and Discussion

As mentioned earlier, the perceived value is the result of comparison between what the consumers receive and what they sacrifice. This study applied Sheth et al.[17] conceptual framework for evaluating the perceived value in which it consists of five components. The only difference

Table 3. The results of model measurement

Factors	Loading	T	Average	SD	α	CR	AVE	R^2
Social value	-	-	-	-	0.77	0.86	0.67	-
X1	0.824	5.16	5.32	1.24	-	-	-	-
X2	0.774	4.85	5.65	1.01	-	-	-	-
X3	0.859	6.33	5.61	1.07	-	-	-	-
Conditional value	-	-	-	-	0.84	0.92	0.85	-
X1	0.964	11.81	5.83	1.02	-	-	-	-
X2	0.883	8.88	5.78	0.97	-	-	-	-
Monetary value	-	-	-	-	0.74	0.84	0.65	-
X1	0.874	6.29	5.91	1.11	-	-	-	-
X2	0.756	3.57	5.81	0.95	-	-	-	-
X3	0.777	4.56	5.59	1.26	-	-	-	-
Convenience value	-	-	-	-	0.80	0.86	0.63	-
X1	0.846	5.00	5.98	0.92	-	-	-	-
X2	0.623	3.05	6.11	0.83	-	-	-	-
X3	0.846	7.21	6.09	0.80	-	-	-	-
X4	0.827	5.54	6.08	0.74	-	-	-	-
Cognitive Value	-	-	-	-	0.65	0.81	0.60	-
X1	0.870	3.95	5.78	0.84	-	-	-	-
X2	0.782	2.95	5.65	1.06	-	-	-	-
X3	0.652	2.85	5.33	1.40	-	-	-	-
Emotional value	-	-	-	-	0.89	0.94	0.90	-
X1	0.971	10.95	5.82	0.99	-	-	-	-
X2	0.929	10.89	5.68	1.14	-	-	-	-
Willingness to pay more	-	-	-	-	0.91	0.94	0.85	0.57
X1	0.888	12.46	5.18	1.31	-	-	-	-
X2	0.945	12.17	4.98	1.50	-	-	-	-
X3	0.931	10.40	4.78	1.48	-	-	-	-

Table 4. Correlation matrix for latent variables

Construct	Emotional	Social	Conditional	Monetary	Convenience	Cognitive	WTP
Emotional	0.949						
Social	0.613	0.819					
Conditional	0.571	0.511	0.924				
Monetary	0.473	0.551	0.373	0.804			
Convenience	0.433	0.450	0.427	0.637	0.791		
Cognitive	0.677	0.537	0.507	0.296	0.228	0.773	
WTP	0.380	0.267	0.294	0.219	0.206	0.193	0.921

Table 5. Results of the structural equation modeling

Paths	B	Error	T	Sig.	Result
Social value →WTP	0.05	0.13	0.38	-	Rejected
Conditional value →WTP	0.13	0.12	1.06	-	Rejected
Monetary value →WTP	0.02	0.12	0.15	-	Rejected
Convenience value →WTP	-0.01	0.11	0.10	-	Rejected
Cognitive value →WTP	0.16	0.14	1.13	-	Rejected
Emotional value →WTP	0.38	0.15	2.51	0.05	Accepted

of this study and the Sheth et al.[17] is division of performance value to two elements of monetary and cognitive values. But the findings indicated that none of these two variables were significantly influencing the users' willingness to pay more for mobile banking services. According to the research findings, only the influence of emotional value was significant. Therefore, it can be concluded that entertainment and joyfulness of doing banking affairs through cell phone can influence the overall evaluation of customer from the obtained benefits in exchange for expenses, i.e perceived value, and contributes to the loyalty of customers to this communication channel and the bank offering this services. The finding of this study is useful for all banks offering mobile banking in order to determine their strategies in business level. It shows that low price is not the only way of being successful in the market forever but it is possible to make more profit by creation and innovation through emphasizing on enter-

tainment and joyfulness of mobile banking services along with the price increase.

6. Limitations and Recommendations for Future Researches

This research is limited to the mobile banking industry but the next researches can be conducted to generalize the findings by testing this model in other statistical populations and service markets such as internet banking or other electronic and non–electronic services. Since this study was cross-sectional, only the correlations between construct were estimated. So, it is better to use longitudinal studies to make the testing of relations more efficient. Since perceived value has been investigated in different models and frameworks, it would be possible to use these models to evaluate the customer perceived value. Although the emergence of new generation of structural equation modeling software's such as Smart–PLS do not make problem in data analysis with small sample size, it is better to use larger sample size in future researches to obtain more accurate results.

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