



## Empirical Study and Analyze of Internet Banking in Pakistan

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### ABSTRACT

**Purpose:** To reflect research within area of online banking and its acceptance in Pakistan.

**Methodology & Design:** In order to conduct this study both primary and secondary research methods are used. Primary method includes survey analysis and a secondary research method is conducted through secondary data through various scholars and authors literature.

**Findings:** It reflects that all technological acceptance factors including attitude towards using, perceived usefulness, perceived trust, behavioral intention and perceived ease for use are crucial role players into acceptance of on line banking. Further every one of the aforesaid factors plays a crucial role in building long term trust as well over internet banking.

**Limitations:** Some of the limitations for conducting this study include; different branches / banks varying level of services, illiteracy of consumer regarding internet banking and personal assumptions over analysis of results.

**Recommendations:** In order to make internet banking more acceptable to consumers it requires banks to educate and train their employees so as they deliver to consumers, build strong technological infrastructure, protect security and privacy issues of consumers and conduct consumer awareness programs to make them literate over internet banking services.

**Keywords:** Attitude towards using, Perceived usefulness, Perceived trust, Behavioral intention, Perceived ease for use, Technological acceptance model (TAM), Banking business of Pakistan.

### I. INTRODUCTION:

The utilization of the on line banking as a means of doing and transacting financial services has been a growing phenomenon in the field of financial services. However, such usage of the Internet may be difficult for some consumers because the use of Internet banking requires that technology be accepted on the part of consumers. Such acceptance can be considered complex because it involves changes in behavioral patterns (Meuter et al. 2000). On the other side, technology can either help simplify or convolute the understanding of consumers about exchange. Mick and Fournier (1998) identified 8 paradoxes about information technology. Consumers perceive the technology of the Internet as something that,

1. Leads to control and destruction.
2. Gives liberty and subjection.
3. It is a novice and out-of-date practice.
4. It can lessen or raise the feeling of competence.
5. It can lessen or raise its productivity.
6. It can promote satisfaction and creation of needs.
7. It can promote or hamper social interaction, involvement and non-involvement.
8. Engagement and disengagement of Information Technology.

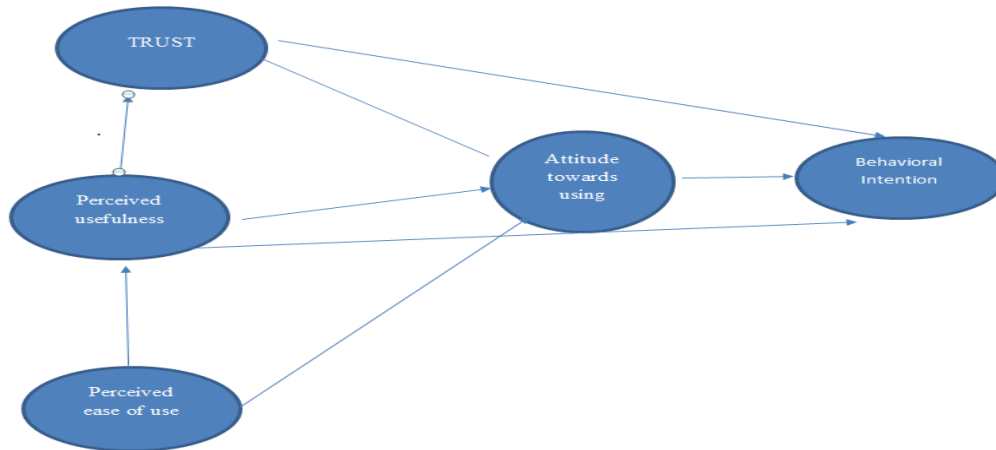
Given such gray areas, some customers experience difficulty in understanding the internet technology. Apart from understanding the internet technology, customers need to understand also the internet financial facilities. However, the financial facilities are complex in nature; often give the assignment of facts pursuit simpler than information of appraisal (black et al. 2002).

The understanding of the use of the internet channel and financial services by the consumers is difficult to forecast, thus, there is a need to do further research and studies about the utilization of such complex services in the on line banking by the consumers.

The objective of marketing is to maintain supports and enhance the utilize possessions and facilities by the consumers. The use of clients is more important because it constructs behavior of clients and reduces the hesitations of clients (Sheth and Parvatiyar, 1995); furthermore it develops an understanding of the

social exchange methods (Kelly and Thibaut, 1978). Recognition of on line banking can be best understood by analyzing the causes behind the regularity of use of on line banking. For such purpose the researcher made use of a adapted form of the technology acceptance model (TAM ) that identifies the perceived usefulness and ease of use of such a technology as a determinant of the behavior of the user (Davis, 1989). This is because many other studies have reported that trust manipulates the behavior of clients. (Polatoglu and Ekin, 2001; Kardaras and Papathanassiou, 2001; Minjoon and Shaohan, 2001).

**Model:**



**Hypotheses:**

1. Trust has the positive significant effect on Usefulness and for the usages of internet at internet banking in Pakistan.
2. Perceived usefulness has the positive significant effect on Attitude toward using for acceptance at internet banking in Pakistan.
3. Perceived ease of use has the positive effect on Attitude toward using for acceptance at internet banking in Pakistan.
4. Attitude toward using has the positive effect on Behavioral intention for acceptance at internet banking in Pakistan.

**II. METHODOLOGY:**

The researchers had selected the users of on line banking from well-known banks and some financial institutes in Pakistan. A request has been delivered to the banks staff /clients that they participate in the research survey for on line banking for getting their opinion of the survey participants. A five points Likert scale questionnaire has utilized for the information collection of the making of the research model. Some items like the amount of real use, the purpose of use, thoughts associated to perceived usefulness and perceived ease of use will be modified from the other research papers in relation to technology acceptance model (TAM) (Agawal et al., 2000; Davis et al., 1989).

Data for this study was collected using self-administrated quantitative survey by means of the mixture of methods such person to person meeting with participants, postal mail and online (web based).

In this study, the preliminary analysis of the quantitative data which includes, data filtration, data coding, normality testing, outline identification, missing values identification, we employed the current versions of Statistics package for social sciences (SPSS) and Analysis of moments structures (AMOS). After preliminary analysis, the AMOS has been used for Explanatory Factor Analysis (EFA), Structural equation modeling (SEM), path analysis to test the hypotheses, Confirmatory Factor Analysis (CFA), constructs validity and reliability testing.

### III. RESULTS AND DISCUSSION

In this study seven dispersed geographic localities (major cities) of Pakistan including Karachi, Hyderabad, Quetta, Lahore, Rawalpindi, Islamabad and Peshawar have been used as a cluster to distribute the questionnaire and collect the response from responsible respondents.

#### Descriptive Statistics

This section shows descriptive statistics of behavioral intention (BI), Attitude towards using (ATU), Perceived usefulness (PU), Perceived ease of use (PEOU) and Trust (TR).

#### Behavioral Intention (BI)

In this study, the BI construct will measure the respondents behavioral Intention in using the information systems. Table 1, presents descriptive statistics results of respondents rating for the measured items with the data normality (skewness and kurtosis). The results show that the mean value of BI is rated between 2.04 (1.165) to 2.28 (1.167) with data normality values are acceptable (less than + 1 and -1).

**Table 1: Descriptive Statistics of Behavioral Intension**

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
BI-(i)	300	2.043	1.165	1.024	.141	.240	.281
BI-(ii)	295	2.142	1.172	2.195	.142	10.669	.283
BI-(iii)	292	2.161	1.000	.729	.143	.192	.284
BI-(iv)	297	2.148	1.070	.997	.141	.596	.282
BI-(v)	296	2.283	1.167	.757	.142	-.110	.282
Valid N	284						

#### Attitude towards using (ATU)

The second construct was Attitude towards using (ATU) the information systems. The results in Table 2, indicates that mean scores are between 2.20 (1.000) to 2.45 (2.613) and normality values are also within range.

**Table 2: Descriptive Statistics of Attitude towards using**

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ATU-(i)	297	2.208	1.900	7.758	.141	78.309	.282
ATU-(ii)	297	2.057	1.000	1.252	.141	1.529	.282
ATU-(iii)	299	2.214	1.055	.837	.141	.418	.281
ATU-(iv)	299	2.454	2.613	13.579	.141	215.524	.281
Valid N	294						

#### Perceived usefulness (Pu)

The mean value of the PU is between 2.06 (1.07) to 2.003 (1.06). The outcomes shows in table 3 all the items are highly rated and mean score is greater than 2 which is neutral value, and it was high rated by internet banking customers.

**Table 3: Descriptive Statistics of Perceived usefulness**

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PU-(i)	299	2.066	1.078	1.078	.141	.622	.281
PU-(ii)	297	2.212	.961	.827	.141	.524	.282
PU-(iii)	299	2.344	1.019	.762	.141	.420	.281
PU-(iv)	291	2.350	.917	.596	.143	.331	.285
PU-(v)	299	2.163	1.075	.841	.141	.030	.281
PU-(vi)	297	2.121	1.093	.930	.141	.268	.282
PU-(vii)	297	2.003	1.063	1.078	.141	.635	.282

Valid N	287						
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**Perceived ease of use (PEOU)**

The results in Table 4, shows that maximum mean value is 2.11 (1.175) and the minimum is 1.98 (1.058) which are larger than the natural point.

**Table 4: Descriptive Statistics Ease to use (PEOU)**

	n	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PEOU-(i)	295	2.115	1.175	1.078	.142	.437	.283
PEOU-(ii)	299	2.418	1.207	.671	.141	-.461	.281
PEOU-(iii)	295	2.376	1.083	.612	.142	-.258	.283
PEOU-(iv)	297	2.569	2.756	9.172	.141	99.486	.282
PEOU-(v)	299	2.076	1.082	1.140	.141	.866	.281
PEOU-(vi)	297	2.165	1.113	1.001	.141	.413	.282
PEOU-(vii)	299	1.986	1.058	1.342	.141	1.514	.281
Valid N	289						

**Trust (TR)**

The highest mean was TR4 (3.20) and the lowest was TR2 (2.28)

**Table 5: Descriptive Statistics of Trust (TR)**

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
TR-(i)	300	2.406	1.041	.483	.141	-.188	.281
TR-(ii)	295	2.288	.919	.719	.142	.386	.283
TR-(iii)	297	2.619	1.026	.269	.141	-.487	.282
TR-(iv)	298	3.208	3.533	10.409	.141	118.983	.281
TR-(v)	297	2.528	.937	.697	.141	.325	.282
TR-(vi)	298	2.486	.988	.689	.141	.393	.281
Valid N	291						

Cronbach's alpha was used to check the reliability and inter-consistency of scales constructed. Overall Cronbach's alpha was 0.987, which is excellent. This can be interpreted as 98% of teachers in this study hold a consistent opinion.

**Table 6: Cronbach's alpha (a measure of inter-consistency)**

Cronbach's Alpha	N of Items
.987	29

**Table 7: KAISER-MEYER-OLKIN (KMO) AND BARTLETT'S TEST OF SPHERICITY**

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.878
Approx. Chi-Square	4631.417
Bartlett's Test of Sphericity Df	406
Sig.	.000

Kaiser-Meyer-Olkin (KMO) for a set of variables included in principle component analysis was 0.878, which exceeds the minimum requirement of 0.05 for overall measure of sample adequacy. The Bartlett's test of Sphericity was also found to be highly significant  $p < 0.000$ , it represents that computed factors are appropriate and data is acceptable for factor analysis.

**Table 8: Communalities for Principal Component Analysis**

Components	Initial	Extraction
BI-( i)	1.000	.768
BI-(ii)	1.000	.743
BI-(iii)	1.000	.775
BI-(iv)	1.000	.766
BI-(v)	1.000	.704
ATU-(i)	1.000	.660
ATU-(ii)	1.000	.675
ATU-(iii)	1.000	.711
ATU-(iv)	1.000	.417
PU-(i)	1.000	.679
PU-(ii)	1.000	.694
PU-(iii)	1.000	.700
PU-(iv)	1.000	.598
PU-(v)	1.000	.517
PU-(vi)	1.000	.639
PU-(vii)	1.000	.660
PEOU-(i)	1.000	.505
PEOU-(ii)	1.000	.685
PEOU-(iii)	1.000	.814
PEOU-(iv)	1.000	.764
PEOU-(v)	1.000	.650
PEOU-(vi)	1.000	.729
PEOU-(vii)	1.000	.649
TR-(i)	1.000	.630
TR-(ii)	1.000	.582
TR-(iii)	1.000	.710
TR-(iv)	1.000	.884
TR-(v)	1.000	.727
TR-(vi)	1.000	.694

Principal Component Analysis(Extraction Method©)

**Table 9: Total Variance Explained by Components**

Component	Eigen values (Initial)			Sums of Squared (Extraction Loadings)			Sums of Squared (Rotation Loadings)		
	Sum	Variance (%)	Cumulative(%)	Sum	Variance (%)	Cumulative (%)	Sum	Variance (%)	Cumulative (%)
1	10.263	35.389	35.389	10.263	35.389	35.389	4.932	17.007	17.007
2	2.391	8.245	43.634	2.391	8.245	43.634	3.540	12.206	29.214
3	2.197	7.575	51.209	2.197	7.575	51.209	3.250	11.208	40.422
4	1.336	4.608	55.818	1.336	4.608	55.818	2.634	9.083	49.505
5	1.297	4.473	60.291	1.297	4.473	60.291	2.402	8.282	57.788
6	1.186	4.091	64.382	1.186	4.091	64.382	1.869	6.445	64.233
7	1.058	3.648	68.029	1.058	3.648	68.029	1.101	3.797	68.029
8	.907	3.126	71.155						
9	.855	2.947	74.102						
10	.775	2.672	76.775						
11	.721	2.488	79.262						
12	.633	2.182	81.444						
13	.612	2.109	83.553						

14	.501	1.729	85.282					
15	.477	1.646	86.927					
16	.454	1.564	88.491					
17	.414	1.429	89.920					
18	.364	1.256	91.176					
19	.322	1.111	92.287					
20	.306	1.057	93.344					
21	.293	1.010	94.354					
22	.280	.964	95.318					
23	.256	.882	96.200					
24	.245	.845	97.045					
25	.219	.755	97.800					
26	.205	.707	98.508					
27	.162	.557	99.065					
28	.140	.482	99.548					
29	.131	.452	100.000					

Principal Component Analysis of "Extraction Method"

Table 8 presents the after effects of the components' extraction on the ground of the Eigen values for 7 measures. From the out total 29 things only 7 factors has meet the desired criteria.

**PEARSON'S CORRELATION BETWEEN LATENT FACTORS/ CONSTRUCTS**

For the testing of linearity of data, Pearson's correlation is used. It is considered as the top-level test to identify the relationships of data variables and may not affect linearity of the correlation. The correlation is understood as significant if the value is less than 0.05 levels. When a researcher finds the value of less than 0.05 then it can be understood that the value is significant, and the researcher has identified the relationship of two variables and can be said that this relationship is not by chance. Table 9 illustrates that the values are less than 0.05 and values are significant.

**Table 10: Correlations**

		BI	ATU	PU	PEOU	TR
BI	Correlation (Pearson)	1	.520**	.494**	.685**	.319**
	(2-tailed) Sig.		.000	.000	.000	.000
	N	194	194	188	190	190
ATU	Correlation (Pearson)	.520**	1	.469**	.544**	.246**
	(2-tailed) Sig.	.000		.000	.000	.000
	N	194	204	194	196	198
PU	Correlation (Pearson)	.494**	.469**	1	.559**	.286**
	(2-tailed) Sig.	.000	.000		.000	.000
	N	188	194	197	195	195
PEOU	Correlation (Pearson)	.685**	.544**	.559**	1	.380**
	(2-tailed) Sig.	.000	.000	.000		.000
	N	190	196	195	199	195
TR	Correlation (Pearson)	.319**	.246**	.286**	.380**	1
	(2-tailed) Sig.	.000	.000	.000	.000	
	N	190	198	195	195	201

\*\* It is significant at the 0.01 level (2-tailed). Pearson Correlation test.

**HYPOTHESES TESTING**

Concerning the hypotheses is presented based on the results presented. The testing is performed to identify two construct or latent relationship. All of the hypotheses were significant.

Trust (TR) has the positive significant effect on Usefulness (PU) and for the usages of internet at internet banking (IB) in Pakistan.

Perceived usefulness (PU) has the positive significant effect on Attitude toward using (ATU) for acceptance at internet banking (IB) in Pakistan.

Perceived ease of use (PEOU) has the positive significant effect on Attitude toward using (ATU) for acceptance at internet banking (IB) in Pakistan.

Attitude toward using (ATU) has the positive significant effect on Behavioral intention (BI) for acceptance at internet banking (IB) in Pakistan.

#### IV. CONCLUSION

The present evaluation extends the TAM model and it explores the Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). The users of internet's Behavioral Intension (BI) at internet centers has been perceived towards the internet banking at Pakistan. A very little work is available on the topic such as at internet banking in a country like Pakistan. The current study is the first approach for such type of problems in a developing economy like Pakistan. The current study provides important information for the perceived intention of users using internet banking.

The study is the extension in the body of the knowledge of information system (IS) research in context of internet banking at Pakistan. The current research has experimented integrated model containing various constructs of different models. The study can be extended to additional financial institutes by collecting data from a greater quantity of repliers in sequence to illustrate the outcomes accurately.

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