



Exploring the Hindrances to E-Banking Usage in Himachal Pradesh: An Analytical Approach

Shakti Chand*, *Dr. Vijay Kumar Sharma*

* (shaktic94@gmail.com) Research Scholar, Dept. of Commerce Himachal Pradesh University, Summer Hill Shimla-05

** Professor Dept. of Commerce Himachal Pradesh University, Summer Hill Shimla-05

ABSTRACT :

The adoption of e-banking services has witnessed rapid growth globally, with a significant increase in e-banking contracts in leading e-banking countries exceeding 50 percent. This study delves into the factors hindering the acceptance of e-banking services through the lens of Factor Analysis, utilizing primary data collected via questionnaires. Present research is limited to three districts of Himachal Pradesh namely Shimla, Solan and Kangra. Which were selected on the basis of number of ATMs and branches in Himachal Pradesh. The findings underscore that key obstacles in the adoption of e-banking revolve around Service Reliability and Security Concerns, Transactionality, Digitwoes, Technical Glitches. The study's outcomes emphasize that addressing these barriers can significantly enhance the efficiency and acceptability of e-banking services, thereby fostering a more conducive environment for customer adoption.

Keywords: E-Banking, Transactionality, customer adoption, Security Concerns

Introduction:

The adoption of e-banking services has witnessed rapid growth globally, with a significant increase in e-banking contracts in leading e-banking countries exceeding 50 percent (Pikkarainen et al. (2004)). Despite this surge in e-banking usage, several factors continue to hinder the widespread acceptance of e-banking services among consumers. Understanding these barriers is crucial for financial institutions to address key challenges and enhance customer adoption rates. Various studies have highlighted factors that impede the acceptance of e-banking services, including security concerns, transactional reliability issues, digital challenges, and technological malfunctions (Mer & Virdi, 2021; , Moss & Thomas, 2022; , Ghallab & Zhu, 2022). The lack of trust, particularly concerning security features within e-banking frameworks, has been identified as a major obstacle to customer adoption (Mer & Virdi, 2021). Additionally, factors such as technology proficiency, privacy risks, and operational complexities have been found to negatively impact the uptake of e-banking services (Moss & Thomas, 2022). Moreover, the underdevelopment of technological infrastructure, insufficient investments, and entrenched traditional service delivery habits have been identified as barriers to the diffusion of internet banking services (Le et al., 2018). Low levels of customer demand, lack of return on investment, and concerns regarding internet security have also been recognized as key obstacles for banks in the adoption of mobile banking services (Mullan et al., 2017). To overcome these barriers and promote universal acceptance of e-banking services, financial institutions must prioritize robust security measures, enhance transactional efficiency, address digital challenges, and proactively manage technological issues ("The Effect of E-Banking Adoption on Customer Satisfaction and Loyalty in Commercial Banks in Rwanda: A Case of Bank of Kigali", 2024). By focusing on these critical areas, banks can build trust among users, mitigate security risks, and create a conducive environment that fosters broad acceptance of e-banking services in the evolving digital financial landscape.

Review of Literature :

Maditinos et al. (2013) utilized extended technology acceptance model (TAM) model to investigate the factors that have a significant impact on customers' online banking acceptance. The findings of this study highlight the significant impact of perceived usefulness, security risk and performance risk on the intention to use internet banking. On the other hand, they found indirect effect of perceived ease of use and quality of internet connection on e-banking adoption.

Festus and Amaechi (2014) identified the factors influencing e banking implementation and acceptance in Calabar using ordinary least square method. The results of study denote the impact of cost/price, infrastructure and competition-banking on implementation, by banking service providers. They also found the effect of security concern, service charges, and perceived ease of use, resistance to change, accessibility and awareness on acceptance of e-banking services.

Yaseen and Qirem (2017) employed OTAUT (unified theory of acceptance and use of the technology model) to study the essential factors influencing the adoption of e-banking services as perceived by the customers of Jordanian banks. The study identified three factors including: effort expectancy, social influence and hedonic. In addition to this they found performance expectancy and hedonic motivation insignificant predictor.

Kumar and Abirami (2017) made an investigation on the usage pattern and satisfaction level of bank customers regarding e-banking products and services. For the purpose of the study primary data was mainly used which was collected through questionnaire. The findings of the study revealed that there are various reasons which are hindering the acceptance of e-banking products and services such as: poor internet connectivity, safety and security, lack of awareness about e-banking products and services. Also found that most of the customers uses e-banking only for funds transfer.

Ahmad et al. (2019) explored the effect of e-service quality on actual use of e-banking services. The study outcomes indicate the positive effects of perceived usefulness, perceived ease of use and intention to use e-banking further they added that perceived usefulness positively affects attitude towards the usage of e-banking and behavioral intentions to use e-banking.

Teka (2020) made an attempt to identify the factors affecting bank customer's usage of e-banking in Ethiopia. Researcher developed a model based on Technology Acceptance Model (TAM) and theory of Planned Behavior (TPB). Data for the purpose of the study was collected from 420 respondents which was later analyzed by using Structural Equation Modeling. Findings of the study revealed that perceived usefulness, perceived ease of use, attitude towards e-banking, perceived behavioral control, subjective norms, behavioral intention, awareness and the availability of internet/network connection have a significant positive impact on users e-banking usage practice. However, perceived risk has a significant negative impact.

Kitsios and Giatsidis (2021) examined the acceptance rate of digital transformation in the banking sector in Greece. Data for the purpose of study was collected from 161 employees and Multivariate Regression Analysis was used for the analysis of collected data. The results of the study revealed that majority of the bank employees agreed upon that digitization allow them to carry out large volume of work in a shorter time and easily. Further regarding ease of using new technologies a significant portion of employees thinks that using new technologies in banking sector does not require special knowledge and skills, as most of the younger employees with an higher level of education agreed on the ease of using new technologies while older employees with lower educational qualification stated that there is a great difficulty in using modern technologies in banking sector. Researchers finally concluded that employees in Greek banks are not threatened by E-banking, but they need proper training in order to apply these modern technologies in their banks

Research Methodology:

Research methodology is of significant importance as it equips us with sample selection criteria, method of data collection and statistical tools used for the purpose of data collection.

Scope of the Study

Scope of the study tells us about the area within which the research work is confined. Present research is limited to three districts of Himachal Pradesh namely Shimla, Solan and Kangra. Which were selected on the basis of number of ATMs and branches in Himachal Pradesh.

Objectives:

To identify the factors hindering the acceptance of e-banking.

Data Collection and Analysis:

Data for the purpose of the study has been collected from 450 respondents using a well-structured questionnaire which was later analyzed using exploratory factor analysis.

1. Demographic Profile of the respondents:

The "Demographic Profile of the respondents" refers to a complete description of the important demographic features of the persons or participants who took part in a survey, study, or research project. Demographic variables used in the study are; gender, age, category, marital status, education qualification, personal income, occupation and location.

Table 1.1
Demographic Profile of users

Gender		
Male	243	54.0
Female	207	46.0
Total	450	100.0
Age Group		

Below 25	88	19.5
25-40	110	24.6
40-55	227	50.4
Above 55	25	5.5
Total	450	100.0
Marital Status		
Married	266	59.2
Unmarried	184	40.8
Total	450	100.0
Qualification		
Upto Secondary	80	17.8
Graduate	141	31.3
Post graduate	208	46.2
Post graduate and above	21	4.7
Total	450	100.0
Personal income		
Upto 3 Lakh	115	25.6
3-5 Lakh	146	32.4
5-7 Lakh	84	18.7
Above 7 Lakh	105	23.3
Total	450	100.0
Occupation		
Student	24	5.3
Govt. employee	145	32.2
Businessmen	115	25.6
Professional	59	13.1
Private job	107	23.8
Total	450	100.0

Source: Primary probe

Table highlights that majority of the respondent's 54.0 percent are male and 46.0 percent are female. This suggests that maximum numbers of e-banking users are male as they are well versed with technology. It is very clear from the Table that almost half 50.4 percent of the respondents belongs to the age group of 40-55, while only 5.5 percent of the respondents belong to the age group of above 55. Table further reveals that 24.6 percent are from the age group of 25-40 and 19.5 percent are from the age group of below 25. It depicts that majority 59.2 percent of the users are married while 40.8 percent are unmarried. Hence it can be said that e-banking services are more popular among married customers as compared to unmarried ones. It infers that majority 46.2 percent of the respondents are post graduates 31.3 percent are graduates. Further 17.8 percent possesses a qualification upto secondary and only 4.7 percent are post graduate and above. Table further reflects that out of total 450 respondent's 32.4 percent of the respondents have an annual income of 3 to 5 Lakh, 25.6 percent have income upto 3 Lakh while 18.7 percent and 23.7 percent respondents have an annual income of 5 to 7 Lakh and above 7 Lakh respectively. Occupation wise composition of the respondents illustrates that majority of the respondent's 32.2 percent are govt. employee, 25.6 percent are businessmen, 23.8 percent are in private job while 13.1 percent and 5.3 percent are professional and students respectively.

2. Factors Hindering the Acceptance of E-banking

Factor analysis is a method which is used to reduce a large no of variables to few variables which reflects all the factors in a more precise manner. In this technique maximum common variance is extracted from all variables and then these variables are put together into a common score. In this section an attempt has been made to identify the factor that are hindering the acceptance of e-banking.

2.1(a) Reliability Test

In order to assess the reliability and internal consistency of the items the Cronbach's alpha is calculated. The value of Cronbach's alpha is acceptable if it is more than 0.7.

Table 2.1(a)
Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.834	.846	18

Source: Primary probe

Reliability statistics of the statements related to the factors hindering the acceptance of e-banking have been shown in Table 2.1(a). Table highlights that the calculated value of Cronbach's alpha is .834 for all the 18 statements taken in questionnaire, indicating that questionnaire is reliable and qualifies the reliability test.

2.1(b) KMO and Bartlett's Test

To assess the suitability of data for factor analysis, two key tests are commonly employed: the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of Sphericity. The KMO test evaluates the sampling adequacy of the data, with values closer to 1 indicating better suitability for factor analysis, while a minimum threshold of 0.6 is often considered acceptable. On the other hand, Bartlett's test of Sphericity examines whether the correlations between variables are strong enough to warrant the use of dimension reduction techniques like factor analysis.

Table 2.1(b)
KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.868
Bartlett's Test of Sphericity	Approx. Chi-Square	4231.824
	df	153
	Sig.	0.000

Source: Primary probe

The Kaiser-Meyer-Olkin (KMO) measure, with a value of 0.868, indicates that the sample is deemed suitable for proceeding with factor analysis. Additionally, the significant Chi-square value of 4231.824 for Bartlett's test of Sphericity, with 153 degrees of freedom at a 5 percent level of significance, leads to the rejection of the null hypothesis. This rejection supports the acceptance of the alternative hypothesis, suggesting that the variances among the items are unequal. Consequently, this outcome allows for the endorsement of factor analysis as an appropriate technique for further data analysis.

2.1(c) Communalities

In Principal Component Analysis (PCA), communalities represent the extent to which each variable's variance can be elucidated by the derived components. These communalities are calculated at each stage of the analysis to provide insights into the effectiveness of the identified components in explaining the variability observed in the variables.

Table 2.1(c)
Communalities

S.No.	Communalities		
		Initial	Extraction
1.	ATM machine out of cash	1.000	.502
2.	Cards get blocked	1.000	.696
3.	Statement not printing	1.000	.523
4.	Request time out	1.000	.702
5.	ATM out of service	1.000	.776

6.	Long waiting queues	1.000	.725
7.	Reduction of bank balance without payment	1.000	.789
8.	Currency notes not as per requirement	1.000	.839
9.	Internet banking is insecure	1.000	.856
10.	So many steps for transaction	1.000	.799
11.	128. Not giving fast response	1.000	.523
12.	Can lead to fraud	1.000	.479
13.	Server problem	1.000	.521
14.	Privacy risk	1.000	.632
15.	Operation is not easy	1.000	.605
16.	Lack of security	1.000	.689
17.	Bank takes long time to respond	1.000	.675
18.	Lack of appropriate software	1.000	.609

Source: Primary Probe, Extraction Method: Principal Component Analysis

2.1(d) Total Variance Explained

Results of the analysis presented in table 2.1(d) showcases Eigen Values, Percentage of Variance explained, and cumulative variance explained. This table serves to provide a comprehensive overview of the Eigen Values and the corresponding variance explained by each component, offering insights into the significance of each component in capturing the variability present in the data.

Table 2.1(d)
Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.	5.453	30.293	30.293	5.453	30.293	30.293	4.698	26.100	26.100
2.	3.382	18.790	49.082	3.382	18.790	49.082	3.338	18.543	44.643
3.	1.977	10.981	60.064	1.977	10.981	60.064	2.677	14.870	59.513
4.	1.130	6.276	66.340	1.130	6.276	66.340	1.229	6.826	66.340
5.	.910	5.057	71.397						
6.	.768	4.268	75.664						
7.	.629	3.493	79.157						
8.	.580	3.219	82.377						
9.	.475	2.636	85.013						
10.	.423	2.350	87.362						
11.	.408	2.266	89.629						
12.	.358	1.990	91.619						
13.	.319	1.775	93.394						
14.	.294	1.635	95.029						

15.	.263	1.459	96.488						
16.	.231	1.285	97.773						
17.	.223	1.236	99.009						
18.	.178	.991	100.000						

Source: Primary Probe, Extraction Method: Principal Component Analysis

In the context of factor analysis, Eigen values play a crucial role in determining the variance explained by the factors derived from the analysis. Typically, only variables associated with Eigen values equal to or greater than 1 are considered, as they signify a substantial amount of variance captured by the respective factors. The Eigen values provide insights into the relative importance of each factor in explaining the variability observed in the data.

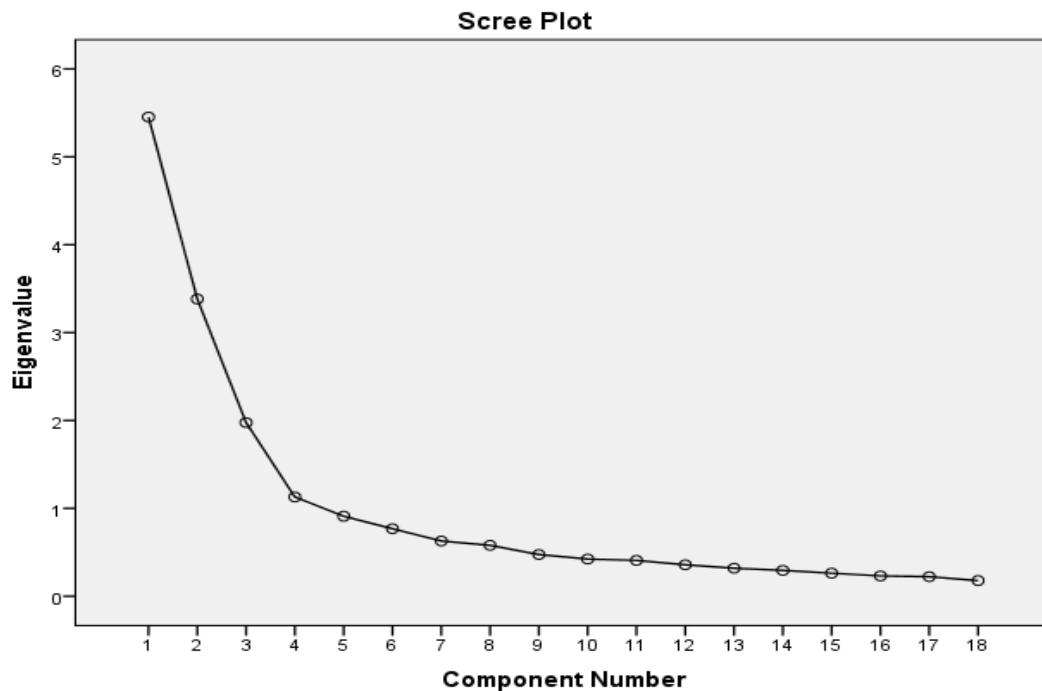
The total variance explained table in factor analysis highlights that the first factor, characterized by the highest Eigen value, accounts for the most significant proportion of variance in the data. Subsequently, the second factor elucidates a considerable portion of the remaining variance not explained by the first factor, and this pattern continues with subsequent factors. The percentage of variance column in factor analysis tables indicates the proportion of variance attributed to each factor, with a good factor analysis typically revealing that a few key factors explain the majority of the variance, while the remaining factors contribute to a lesser extent.

In the current study, the analysis has identified four factors out of the initial 18 variables based on the total variance explained. Specifically, the results from Table 2.1(d) demonstrate that the first factor explains 30.293% of the variance, the second factor accounts for 18.790%, the third factor elucidates 10.981%, and the fourth factor captures 6.276% of the variance. It is noteworthy that the variance explained by the subsequent factors beyond the fourth factor is deemed insignificant, underscoring the importance of focusing on the key factors that contribute substantially to the variance in the data.

2.1(e) Scree Plot

Scree Plot is the graphical representation of the all the variables taken for the analysis along with their Eigen values. This graph helps us to determine that how many variables are to be retained.

Fig. 2.1(e)



The scree plot graph provides valuable insights into the variance explained by each factor derived from the factor analysis. In this study, the scree plot clearly indicates a distinct pattern where a noticeable change occurs after the fourth factor. Following the fourth factor, the curve in the scree plot begins to flatten, signifying a diminishing rate of variance explained by each subsequent factor. This observation underscores that the maximum amount of variance in the data is captured by the first four factors, each having Eigen values exceeding 1.

2.1(f) Rotated Component Matrix

The rotated component matrix, also known as loadings obtained from Principal Component Analysis (PCA) or Factor Analysis (FA), undergoes a process of rotation to streamline the variables to those statements with high loadings. The primary objective of rotation in this context is to reduce the number of variables to focus on statements that exhibit substantial loadings, thereby enhancing the interpretability and clarity of the factor structure derived from the analysis.

Table 2.1(f) Rotated Component Matrix

S.No.	Rotated Component Matrix	Component			
		1	2	3	4
		1.	Lack of security	.824	.030
2.	Bank takes long time to respond	.809	.121	.079	.017
3.	Lack of appropriate software	.775	.065	.054	.021
4.	Operation is not easy	.773	.004	.043	-.079
5.	Privacy risk	.770	.133	.076	.122
6.	Not giving fast response	.715	.065	.054	.070
7.	Can lead to fraud	.681	.090	.016	.081
8.	Reduction of bank balance without payment	.105	.869	.083	-.129
9.	ATM out of service	.167	.855	.010	-.127
10.	Long waiting queues	.082	.824	.199	.003
11.	Cards get blocked	.083	.821	.122	.026
12.	ATM machine out of cash	.071	.555	.435	.020
13.	Internet Banking is insecure	.062	.121	.915	.022
14.	Currency notes not as per requirement	.044	.094	.910	.014
15.	So many steps in a transaction	.110	.234	.856	-.019
16.	Request time out	.003	.045	.056	.835
17.	Server problem	.148	.098	-.020	.699
18.	Statement not printing	.181	-.227	-.042	.661

Source: Primary Probe, Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization

Results of the Rotated Component Matrix have been depicted in Table 2.1(f). It reveals that four factors have been extracted through Factor Analysis:

Factor 1: Service Reliability and Security Concerns

This factor comprises the variables that play a significant role in the adoption of e-banking. It covers the variables related to service reliability and security concerns. The factors loaded to this factor include lack of security (factor loading .824), long response time from the bank (factor loading .809), lack of appropriate software (factor loading .775), difficult operations (factor loading .773), privacy risk (factor loading .770), slow response (factor loading .715), and potential for fraud (factor loading .681). Despite technological advancements, customers still feel that security is the biggest concern hindering their acceptance of e-banking. This suggests that banks should implement rigorous security measures to protect customers' hard-earned money and data.

Factor 2: Transactionality

Transactionality can be defined as the term that emphasizes the nature, characteristics, and challenges associated with a transaction and its operations. It encompasses the factors that affect it, such as reduction of bank balance without payment (factor loading .869), ATM out of service (factor loading .855), long waiting queues (factor loading .824), card blockage (factor loading .821), and ATM machine running out of cash (factor loading .555). This indicates that banks should put sincere efforts into improving their operational efficiency and ensuring that their ATM services are available to customers without unnecessary interruptions and are reliable.

Factor 3: Digitwoes

Digitwoes refer to the challenges, troubles, and difficulties associated with transactions performed through e-banking products and services. These may include insecure internet banking transactions (factor loading .915), receiving currency notes that do not meet requirements (factor loading .910), and encountering numerous steps in a transaction (.856).

Factor 4: Technical Glitches

Technical glitches occur when unexpected problems or errors disrupt the processing of a transaction. These issues can interrupt the smooth functioning of a transaction due to technical errors or faulty technological infrastructure. They can negatively impact customers and their acceptance of e-banking channels. Factors contributing to this include request timeouts (factor loading .835), server problems (factor loading .699), and statement printing issues (factor loading .661). To ensure uninterrupted services, banks should continuously monitor their software, hardware, and communication channels.

Table 2.1(g) Extracted Factors

Service Reliability and Security Concerns	Transactionality	Digitwoes	Technical Glitches
Lack of security	Reduction of bank balance without payment	Internet Banking is insecure	Request time out
Bank takes long time to respond	ATM out of service	Currency notes not as per requirement	Server problem
Lack of appropriate software	Long waiting queues	So many steps in a transaction	Statement not printing
Operation is not easy	Cards get blocked		
Privacy risk	ATM machine out of cash		
Not giving fast response			
Can lead to fraud			

The factors identified in Table 2.1(g) shed light on the primary barriers to e-banking services, encompassing Service Reliability and Security Concerns, Transactionality, Digitwoes, Technical Glitches. To attain universal adoption, financial institutions should prioritize the enhancement of security protocols, streamline transactional efficiency, address digital complexities, and proactively manage technological issues.

Conclusion :

This study aims identifying the factors that impede the acceptance of e-banking services using Factor Analysis. The study is grounded in primary data collected through questionnaires. The findings highlight key obstacles in e-banking adoption, including concerns related to Service Reliability and Security Concerns, Transactionality, Digitwoes and Technical Glitches. The study's outcomes suggest that addressing these barriers can significantly improve the efficacy and acceptability of e-banking services. By mitigating these challenges, banks can not only overcome hurdles but also cultivate trust among users, leading to a more favorable environment for the widespread acceptance of e-banking in the digital banking landscape.

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