

# Status of Internet Banking Adoption among Customers: A Case from India

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**Abstract** - The present attempt has made an effort to analyze the adoption pattern of internet banking among banking customers in India. To serve the purpose, primary research has been conducted and the responses have been collected from the banking customers residing at 12 different cities in India. The results have depicted that although the customers in India are using internet services widely yet the said services are not being used optimally for all the intended purposes. Further, it has also been found that internet banking services are not being rated very much effective on the dimensions, namely, safety & security and customization. Based on the instances found in the present composition, various suggestions have been made which will enable banks to deeply penetrate internet banking services among the customers in India.

**Keywords:** Internet Banking, Customers, India

## I. INTRODUCTION

In no other time in history one has witnessed such an effective and advance use of technology into the banking operations. Indeed, the present era has been characterized as technology era where each and every banking activity involves use of technology (IDRBT, 2013). The applied latest technologies introduced by the banks are aimed at enhancing efficiency as well as effectiveness of the banking operations with the aim to provide maximum value to the customers. Among such technologies, one of the promising banking technologies is internet banking (IB). It is aimed at providing customers with ease and convenience in carrying out different banking activities like money transfer which calls for ample efforts of the customers earlier with the use of traditional technologies, wherein, customers have to visit banks personally for each and every banking activity (Robinson, 2000). Considering the convenience offered by IB, customers have started adopting it and the same has been reflected from the enhanced growth levels of IB in India (IDRBT 2013; 2014).

Although the secondary data pertaining to the adoption of internet banking has shown that the said technology is being progressively adopted by the banking customers, yet researchers have pointed out the need to review the usage pattern of IB continuously so that detect any forthcoming challenge or opportunity and take requisite actions (Sreelatha and Sekhar, 2012). With this representation, the present composition has been framed to explore the adoption pattern of IB among the banking customers in India.

## II. STATUS OF IB IN INDIA

IB has transformed the structure and nature of banking. It has transformed banks from brick-mortar set up to a click-mortar set up, wherein, bank accounts can be accessed with one click via internet (Chau and Lai, 2003). It presents customers with the facility to carry out their banking transactions online owing to which it has been adding on to its popularity among the banking customers (Rahim and Li, 2009). Specifically in the present era, where use of technology has been viewed as a medium that saves time and efforts, the introduction of IB has opened new avenues for the banking customers to operate their bank account and carry out their banking transactions from their laptops, desktops, palmtops, etc. (Elavarasi and Surulivel, 2014).

Introduced in India in 1998 by ICICI bank, IB has emerged as the most effective form of banking technology which offers many benefits to banks and their customers including cost savings, reaching new segments of population, enhancing efficiency of banking operations, enhancement in the banks' reputation and better customer service & satisfaction (Jayawardhena and Foley, 2000). It also enable banks to operate across the boundaries. Customers all over the world have relatively easy access to their accounts 24 hours a day, seven days a week. With reference to IB, Mols (1998) has stated that IB has initiated the concept of three A's, i.e., 'anywhere', 'anytime' and 'anyhow banking', wherein, customers can manage their banking affairs when they want, and at the same time, they can enjoy more privacy while interacting with their banks.

Further, IB is catering to the banking needs of all kinds of banking customers, such as, financial institutions, customers, users, corporate, etc. The catalogue of services offered by IB includes fund transfer, bill payments, loan applications, trade stocks, mutual funds, etc. Not only transactional tasks, IB also offers non-transactional services, such as, checking account balances, downloading bank statements, ordering check books, etc. (Sikdar and Makkad, 2013). To add more, customers can even view actual images of their cheques or deposit slips submitted by them while visiting banks (Karjaluo et al., 2002).

A study conducted by Internet and Mobile Association of India (IAMAI) during 2006 has revealed that 23 per cent of the online users prefer IB for carrying out their banking

transactions, which makes it second most preferred banking technology after ATM (as ATM is preferred by 53 per cent of the customers). Further, the statistics published by RBI (2014) has depicted that 44 per cent out of the 800 million online transactions are being made through IB, thereby, indicating enhanced acceptability of IB services among banking customers in India. Although the secondary statistics have depicted enhanced growth of IB, yet actual growth figures are found to be behind the projected figures (Kanal, 2014). Consequently, to evaluate the findings of secondary statistics and to review the usage pattern of IB, the present study has been undertaken. Further, an attempt has been made to explore the reasons for the reported usage of IB.

### III. RESEARCH METHODOLOGY

#### *Sample Design*

For achieving objectives of the present study, a representative sample of banking customers in India has been taken applying random sampling approach. For that purpose, all the twenty-nine states of the Indian union have been categorized into four groups on the basis of per capita net State Domestic Product (PCNSDP) at factor cost (current prices) for the year 2012-13 in such a way that first three categories includes seven states and the leftover fourth group includes eighth states. Further from each of the four categories, three states have been chosen randomly and from the selected 12 states, cities with highest gross domestic product (GDP) have been selected. The selected cities include Mumbai, Hyderabad, Lucknow, Delhi, Bhopal, Gurgaon, Jammu, Shimla, Bhubaneshwar, Agartala, Imphal and Itanagar and the data was collected during the period from November, 2013 to May, 2014. Furthermore, the decision to take 110 responses from all the 12 selected cities has been finalized out of which 119 responses have been deleted owing to the reasons like non-response and incomplete responses, thereby, reducing the size of usable sample of 1201 banking customers. Further out of total 1201 respondents, 1172 (i.e., 97.6 %) were found utilizing IB services owing to which 1171 responses have been utilized for serving the purpose of the present composition.

Besides, an insight into the socio-economic characteristics of the sampled respondents has indicated that majority of the respondents (78%) were males; and employed in different private/Government/public sector organizations (77%). Further, maximum of the respondents (44%) are found belonging to the age group of 34-58 years; with family monthly income of Rs. 1,20,000 or below (51%) and possess educational qualification equals to graduation or below (54%).

#### *Measures*

In order to analyze effectiveness of IB services, five dimensions of effectiveness, namely, accessibility, economical, time flexibility, safety & security and customization have been chosen on the basis of research work done by Gikandi and Bloor (2010); Dhingra (2011); Taleghani (2013); Mashhour and Zaatreh (2008); Ramya and Bhat (2013) and Khrais (2013) and the responses were collected on 10 point scale ranging from 1 to 10, wherein, 1 represents 'Least Effective' and 10 represents 'Highly Effective'.

Further in order to explore the antecedents of usage pattern of IB, various technology adoption facets, namely, technology adoption propensity of the customers (PD), perceived usefulness (PU), perceived ease of use (PEOU), facilitating conditions (FC) have been taken after reviewing relevant literature in this context. The purpose of taking these facets is to analyze the impact of such facets on the usage pattern of IB. Further, in order to assess the aforesaid measures, inventories of all the measures has been developed including 15 measures assessing PD and PU, PEOU and FC has been assessed by 5, 5, and 6 measures, respectively on the basis of research work done by researchers, such as, Parasuraman (2000); Ratchford and Barnhart (2011); Agarwal and Prasad (1998); Compeau and Higgins (1995); Davis et al. (1989); Venkatesh et al. (2003); Venkatesh and Davis (2000); Limayem and Hirt (2003); Bagozzi and Dholakia (1999); Kim et al. (2005); Smith et al. (2008); Bartone et al. (1989); Windle et al. (2008); Fishbein and Ajzen (1975); Ajzen (1991); Wu and Chen (2005); Malhotra and Galletta (1999). Further, the responses for PD, and FC were taken on five point scale ranging from 1 (represents "Never") to 5 (represents "Always"). While, PU and PEOU have been assessed through seven point likert-type scale ranging from 1 to 7 as recommended by Davis et al. (1989). Furthermore, all the measures have been shown statistically acceptable results while exposing them to the test of normality, reliability, dimensionality and structural validity owing to which aggregate of these measures have been taken to analyze impact of these measures on the usage pattern of IB.

### IV. ANALYZING USAGE PATTERN OF IB

The present part analyzes usage pattern of IB. Accordingly, the results of Figure 1 depict that majority (80.80 per cent) of the IB users hold multiple bank accounts. Whereas, 19 per cent of them are found to operate accounts in two banks. Moreover, very negligible number of IB users (0.20 per cent) has been found to hold account in a single bank.

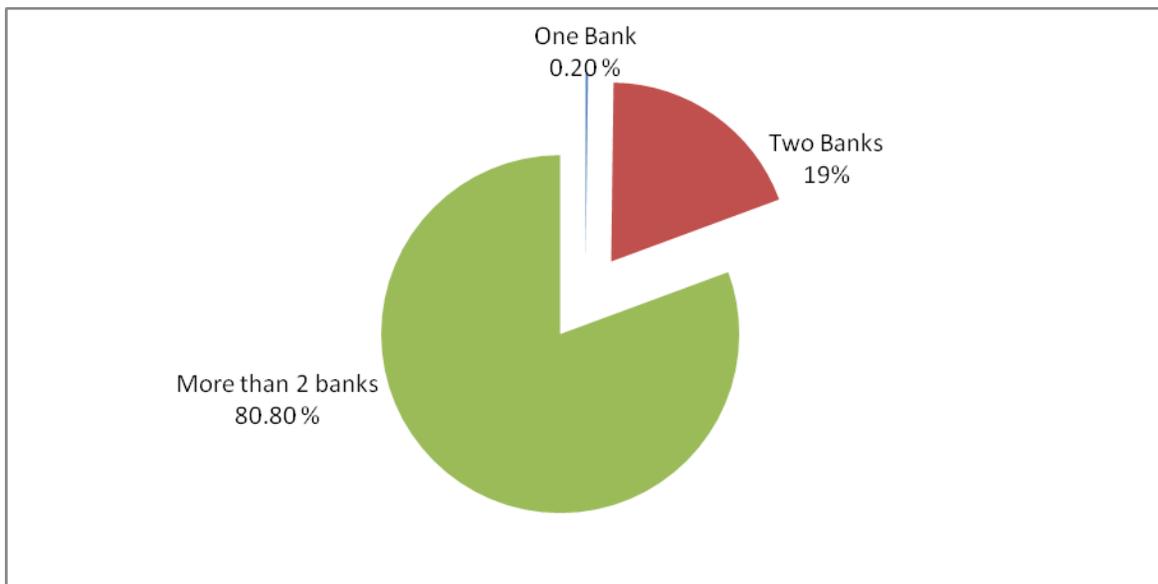


Fig.1 Number Of Bank Accounts Operated By Ib Users

Further, an attempt has also been made to explore the reasons for holding more than one bank account by the IB users and the same is summarized in Table 1.

TABLE 1 REASONS FOR HOLDING MORE THAN ONE BANK ACCOUNT BY IB USERS

Reasons	Frequency*
The single bank account does not provide latest technology for carrying out all my banking transactions.	924 78.83
The banking transactions and updates provided by the single bank account cannot be easily accessed globally.	984 83.95
The cost involved in carrying out the banking transactions with the use of latest banking technologies is high in case of single bank.	289 24.65

Note: \* As the question is of "Tick as many as applicable type" total of percentage may exceed 100; Bold figures represent the percentages

The prime reason for holding multiple bank accounts by IB users (based on the responses of 83.95 per cent of the IB users as depicted in the Table 1) has been identified as the lack of global presence of the banks and its services. Further, 78.83 per cent of the IB users have responded that the single bank account fails to provide all the latest banking technologies required to carry out all the banking transactions which force them to hold multiple bank accounts. Lastly, 24.65 per cent of the IB users have stated that comparatively high cost involved in carrying out

banking transactions with the technologies offered by single bank forces them to opt for multiple bank accounts.

Further, the results pertaining to usage frequency of IB services (refer Figure 2) reveal that maximum of the IB users (46.84 per cent) are utilizing IB services weekly. Further, 28.76 per cent of the IB users have responded that they utilize IB mode fortnightly for serving their banking needs. With small difference, 24.40 per cent of the IB users have been found to use IB services monthly.

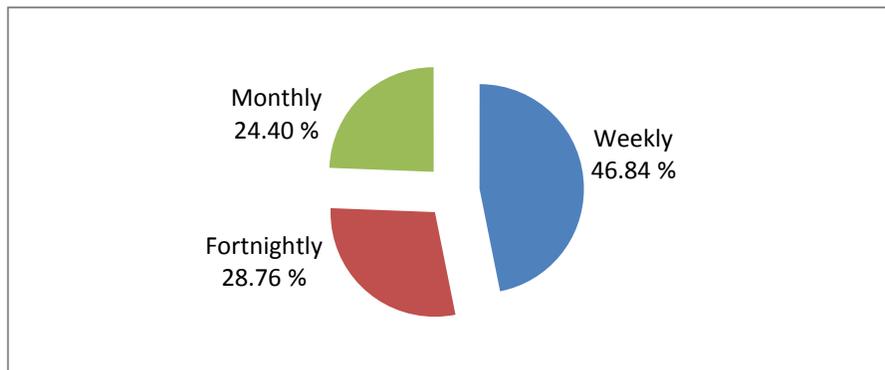


Fig.2 Usage Frequency Of Ib

Furthermore, it has been found (refer Table 2) that majority of the IB users (98.54 per cent) are utilizing IB services for checking their account balances. Also, 93.68 per cent of the IB users are found to utilize IB services for money transfer.

Whereas, 87.54 per cent of them use IB services for the purpose of shopping. Adding more, 81.74 per cent of the IB users have been found to pay bills utilizing IB mode of banking.

TABLE 2 PURPOSE OF USING IB SERVICES

Purpose	Frequency*
Bill Payment	958 81.74
Shopping	1026 87.54
Balance Enquiry	1155 98.54
Money Transfer	1098 93.68

Note: \*As the question is of "Tick as many as applicable type" total of percentage may exceed 100; Bold figures represent the percentages

While accessing effectiveness of IB services, it has been found (refer Table 3) that maximum of the IB users rate IB comparatively more effective on the attributes, namely, accessibility (63.8 per cent); economical (60 per cent) and time flexibility (50.9 per cent) than the other attributes,

namely, safety & security (29.3 per cent) and customization (29.7). On the whole, these rating reveal that the IB services have been rated either reasonably effective services by the IB users. This might be one of the plausible explanations for the regular use of IB services by majority of the IB users.

TABLE 3 EFFECTIVENESS OF IB

Attributes	Effectiveness Rating										Overall Mean Value
	1	2	3	4	5	6	7	8	9	10	
Accessibility	0 0	0 0	30 0	0 0	0 0	20 1.7	22 1.9	280 23.9	748 63.8	102 8.7	8.62
Economical	0 0	0 0	0 0	0 0	2 0.1	35 3	30 2.7	311 26.5	703 60	91 7.7	8.46
Time Flexibility	0 0	0 0	0 0	0 0	11 0.9	104 8.9	65 5.5	322 27.6	597 50.9	73 6.2	8.18
Safety and Security	0 0	0 0	0 0	0 0	35 3	203 17.3	228 19.5	343 29.3	340 29	23 1.9	7.52
Customization	0 0	0 0	0 0	6 0.5	56 4.8	309 26.4	348 29.7	275 23.5	176 15	2 0.1	6.99

Besides, an attempt has also been made to explore difference in the usage pattern of IB services on account of the services which can be performed with the use of IB. For analyzing this, IB users have been classified into two categories, namely, regular users and irregular users on the basis of their IB usage frequency. The category of regular users embraced of IB users who are found to use IB services weekly (N=549). While, the users availing IB services fortnightly or monthly have been categorized as irregular users (N=623).

Besides, relationship between IB usage pattern and the purpose of using the IB services has been analyzed employing chi-square ( $\chi^2$ ) statistics. For analyzing this, the null hypothesis set includes:

$H_{0.1}$ : There is no significant difference in the IB usage pattern on account of purpose of using IB services.

TABLE 4 IB USAGE PATTERN AND PURPOSE OF USAGE

Purpose	Regular Users of IB	Irregular Users of IB	Chi-square	Total Users
Bill Payment	506 52.81	452 47.19	75.232*	958
Shopping	516 50.29	510 49.71	39.355*	1026
Balance Enquiry	537 46.49	618 53.51	3.906**	1155
Money Transfer	504 45.91	594 54.09	6.189*	1098

Note: \* Statistically significant at 1 per cent level; \*\* Statistically significant at 5 per cent level; Bold figures represent the percentages

The results of  $\chi^2$  statistics (refer Table 4) unveils statistically significant difference in the IB usage pattern on account of different purposes for which the IB services are being utilized, thereby, leading towards the rejection of  $H_{0.1}$ . The results divulge that 52.81 per cent of the IB users utilizing IB services for the purpose of bill payment are the regular users of IB, whereas, the remaining 47.19 per cent out of the total of 958 IB users are the irregular users of the IB services. Likewise out of 1026 IB users utilizing IB services for the purpose of shopping, 50.29 per cent are found to be the regular users and with meager but statistically significant difference, 49.71 per cent are found to be the irregular users of IB.

Conversely from a total of 1155 IB users (found to utilize IB service for the purpose of balance enquiry), maximum of the users (53.51 per cent) are found to be the irregular users of IB, whereas, 46.49 per cent of the IB users have been identified as the regular users of the IB services. Similarly, 54.09 per cent of the IB users found to use IB for the purpose of money transfer are explored as the irregular users of IB, whereas, the left over from the total of 1098, i.e., 45.91 per cent are identified to use IB services irregularly.

Further, an attempt has also been made to explore difference in the usage pattern of IB services on account of various technology adoption facets, namely, PD, PU, PEOU and FC. Accordingly, independent sample t-test has been employed to test the following hypothesis.

$H_{0.2}$ : There is no significant difference in the IB usage pattern on account of various technology adoption facets, namely, PD, PU, PEOU and FC.

Accordingly, the results (refer Table 5) depicts statistically significant difference in the usage frequency of IB services on account of PD, PU, PEOU and FC, thereby, rejecting null hypothesis  $H_{0.2}$  completely. The results highlight statistically significant ( $p \leq 0.01$ ) difference in the usage frequency of IB on account of the responses pertaining to PD. The mean value of the responses pertaining to PD implies that the regular users have relatively more favourable personal disposition towards technology adoption than the irregular users. Further, difference in the IB usage pattern is also found to be statistically significant ( $p \leq 0.01$ ) on account of technology adoption facets, namely, PU and PEOU as reflected through the relatively higher mean value of the responses of regular IB users on PU (7.68) and PEOU (7.65).

TABLE 5 IB USAGE PATTERN AND TECHNOLOGY ADOPTION FACETS

Facets	Usage Pattern	N	Mean	t-Value	Df
PD	R	549	3.29	6.74*	1170.00
	I	623	3.12	6.96*	1022.04
PU	R	549	7.68	9.14*	1170.00
	I	623	7.02	9.55*	866.99
PEOU	R	549	7.65	8.59*	1170.00
	I	623	7.03	8.96*	880.35
FC	R	549	2.91	2.35**	1170.00
	I	623	2.77	2.35**	1155.75
	I	623	3.59	-0.11	1092.39

Note: \*Statistically significant at 1per cent level of significance;

\*\*Statistically significant at 5 per cent level of significance; R = regular users; I = irregular users

Besides, results of independent sample t-test unveils statistically significant difference ( $p \leq 0.05$ ) in the usage pattern of IB on account of FC. The relatively higher mean value of responses on the construct of FC in case of regular IB users (2.91) indicate that if the customers are provided with the facilitating conditions, such as, technical support, manual support, etc. while operating the latest banking technological developments, they tend to use IB services more regularly.

### DISCUSSION AND IMPLICATIONS

Synthesizing usage pattern of IB services, the results of present composition have stated that users of IB are holding multiple bank accounts primarily for the reason that the technologies and the services provided by the banks cannot be accessed anywhere easily. Further, the usage of IB

services is found to be more regular among users. This might be attributed to the time factor involved in the introduction of IB into the banking operations in India as IB services have been introduced way back in 1998 by the banking sector in India. Owing to this, it might be possible that the customers become well cognizant with the pros and cons of IB services, which, in turn, has shaped their perception regarding IB services.

Further, IB services are found to be utilized for the purposes, namely, balance enquiry, shopping, money transfer and bill payment. While analyzing effectiveness of IB services, it has been found that IB services are being rated comparatively more effective on the dimensions, namely, accessibility, economical and time saving. While the said services are found to be rated comparatively lower on the dimensions, namely, safety and security; and

customization. Therefore, banks are suggested to focus on adopting means and methods that enhance safety and security involved in operating IB services. Although measures like making customers aware regarding phishing, etc. are being adopted by the banks, yet banks should also devise through which sources of hacking or phishing can be detected with the view to explore the defaulter, thereby, ensuring more safety and security to the customers. Banks can also offer risk insurance to customers against the losses which are beyond the control of the customers, thereby, providing risk cushion to the customers. Further, banks should adopt multi-layer security codes or procedures for enhancing safety & security involved in operating the technology. But this should be done keeping in mind the time involved in carrying out banking activities through multi-layered secured technologies. Moreover, banks are also suggested to offer customers more customized results, such as, allowing customers to add third party instantly; to modify their account on their own based on their requirements, etc.

Further, the usage pattern of IB services is found to be regular for the activities, namely, bill payment and shopping. In the present contemporary world (characterized by intense competition and career oriented approach of the people), customers opt for means and methods that save their time and efforts in carrying out their routine activities. This might be the reason owing to which use of IB services is regular for activities of recurring nature, such as, bill payment (such as, electricity bills, mobile bills, etc.) and shopping.

Furthermore, it has also been found that the users of IB services having favourable personal disposition towards technology adoption are utilizing the said technology regularly for serving their banking needs. The customers with favorable personal disposition towards technology adoption are found to be highly optimistic, innovative, risk taking, self-confident; psychologically resilient individuals having the habit of using the technology. Owing to these traits, such customers develop high tendency towards technology adoption which induce them to use the technology regularly (Parasuraman, 2000). The same rationale may also be attributed for the significant association between PD and usage pattern of IB and therefore, banks should focus on enhancing technology adoption propensity of the customers. This can be done by focusing on personal traits of the customers as proposed by various researchers, such as, Parasuraman (2000); Ratchford and Barnhart (2011), etc. These researchers have stated that technology adoption propensity of the customers is manifested by personal traits, such as, social influence, optimism, self-efficacy, etc. Thus, banks should focus on these factors. Like while focusing on social influence, banks can explore renowned persons at local as well as national level who may advocate the use of IB by narrating the benefits of IB through different means, such as, newspaper blogs, internet blogs, etc.

Also, the usage pattern of IB services is found to be regular in case the users perceive that the latest banking technological developments are useful and easy to use. When customers consider the latest banking technological developments useful and easy to use, they tend to use the technology regularly (Taleghani, 2013; Nasri, 2011). With same notion, it can be said that when the users of IB services perceive the latest banking technologies are useful in carrying out their banking activities, such as, money transfer, bill payment, etc., they tend to utilize IB more regularly. Similarly, when customers believe that it is easy for them to learn and become skilful at using latest banking technologies, they tend to utilize IB services more regularly (Md. Shoki et al., 2013; Abdel-Wahab, 2008; Aboelmaged and Gebba, 2013). Thus, banks should focus on adopting measures which enhance usefulness and ease of use involved in operating IB services. One of the implications to enhance usefulness of IB is to organize camps, events, etc. which will narrate the benefits over and above the traditional technologies. In order to enhance ease of use of IB services, banks can opt for practical sessions, wherein, customers are instructed regarding the operation of IB services and afterwards, they will be allowed to operate the IB services on their own in order to explore their cognizance with the operation of IB services.

Further, the availability of supporting conditions, such as, manuals, technical support, etc. facilitate customers in carrying out their activities smoothly with the use of the technology and this, in turn, induce customers to adopt the technology and use it regularly (Venkatesh et al., 2003; Micheni et al., 2013). The same can also be true for the significant relationship between IB usage pattern and FC. Therefore, banks are also suggested to focus on providing requisite facilitating conditions to customers for carrying out their banking transactions using IB services. In this regards, one of the implications can be that customers will be provided with detailed manual explaining different aspects and steps which needs to be followed while operating IB services. Though a manual-type document is provided to the customers but the said document provide general guidelines and not detailed one. Indeed, banks should opt for manuals wherein, common errors which can occur while using IB services and the methods to avoid/deal with such errors should also be mentioned in the manual. Moreover, publishing of manual in local/regional language may also facilitate customers while carrying out their banking transactions using IB services, thereby, leading towards enhanced adoption of IB services by the banking customers.

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