

Customer Perception and Emergence of Electronic Banking: A Case Study on Kolkata

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Abstract

The present research aims to show the role and importance of electronic banking in today's global world and its impact on banking sector due to the emergence of advance technologies. The paper tries to explain this transition in the banking sector and shows the new opportunities, shortcomings and various risks associated with this new form of e-banking from the customer's perspective. Technology in banking is an important tool to identify the challenges and scope of improvement associated with the various banking products and services. It helps in analysing the effect of transition from the traditional pattern. In order to achieve the aforesaid, a primary data investigation was carried out based on a questionnaire collected from a sample of 100 respondents. The market research tool of Factor Analysis was used to identify the factors that influence the idea of e-banking in the customers' mind. These identified factors will attribute in better understanding of the application of the newly evolving technologies to gain customers' confidence and enhance the process of financial integration and better intermediation in the market.

Keyword: Electronic Banking, Factor Analysis, Integration, Intermediation

Introduction

In the post-reforms period, Indian banking is passing through crucial stages. There is a paradigm shift in the different parameters of transformation. Many internal and external factors are responsible for this

transformation. Competition is compelling the banks to make radical internal and external changes in their day-to-day functioning. Information technology is a crucial parameter for transformation in structure, work-culture, functioning, and business re-engineering. E-banking services are replacing traditional services and creating a new scale in transformation. In the initial stage, e-channels were introduced in metropolitan cities and urban areas, but recently some banks have started focusing on rural and semi-urban areas. The different e-channels such as ATMs, credit and debit cards, tele-banking, mobile-banking, online banking and smart cards are changing the face of the Indian banks. New private sector banks and foreign banks are attracting customers in a big way. The potential customers and big companies are shifting their accounts from traditional banks (not fully computerised) to e-banks (fully computerised and provide different e-channels). New private sector banks are taking the lead in capturing rural and semi-urban sector. If traditional banks, mostly public sector banks, do not transform their business by introducing IT, their survival will become difficult. Therefore, e-banking services are a potent factor for transformation in this e-age.

Banks have traditionally been in the forefront of harnessing technology to improve their products, services and efficiency. They have, over a long time, been using electronic and telecommunication networks for delivering a wide range of value added products and services. The delivery channels include direct dial-up connections, private networks, public networks etc. and the devices include telephone, personal computers including the automated teller machines, etc. With the popularity of PCs, easy access to Internet and World Wide Web (WWW), Internet is increasingly used by banks as a channel for

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receiving instructions and delivering their products and services to their customers. This form of banking is generally referred to as Internet Banking, although the range of products and services offered by different banks vary widely both in their content and sophistication. Broadly, the levels of banking services offered through INTERNET can be categorised in to three types:

- The Basic Level Service is the banks' websites which disseminate information on different products and services offered to customers and members of public in general. It may receive and reply to customers' queries through e-mail,
- At the next level are Simple Transactional Websites which allow customers to submit their instructions, applications for different services, queries on their account balances, etc, but do not permit any fund-based transactions on their accounts,
- The third level of Internet banking services are offered by Fully Transactional Websites which allow the customers to operate on their accounts for transfer of funds, payment of different bills, subscribing to other products of the bank and to transact purchase and sale of securities, etc.

But, in the process it has thrown open issues which have ramifications beyond what a new delivery channel would normally envisage and, hence, has compelled regulators world over to take note of this emerging channel. Some of the distinctive features of e-banking are:

Literature Review

Studies have shown how banking has evolved today with its services accessible to its customers 24x7 from anywhere. Banks today operate in a highly globalised, liberalised, privatised and a competitive environment (Lal & Saluja, 2012). In the era of liberalisation and globalisation, the leading banks, therefore, quickly shifted their focus to provide prompt and efficient customer service, offering a variety of hi-tech banking products/services (Uppal, 2010). It was suggested that even though Indian banking sector had never witnesses any major financial crisis other issues were present that restricted its performance. When designing financial inclusion systems, including priority sector lending, greater emphasis will need to be placed on economic rationality (Shimizu, 2010). Internet revolution is a global phenomenon and going by the current growth statistics, India expects a spurt in the internet penetration

in coming years particularly in the electronic commerce. It is an obvious notion that internet banking and payments are likely to progress in tandem with the e-commerce (Sikdar & Makkad, 2013).

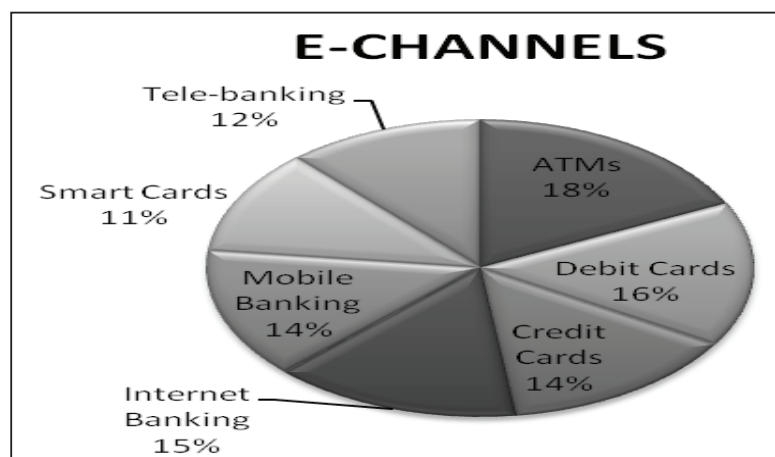
The benefits of electronic banking include reduced cost, time saving, increased comfort, quick access, better cash management, convenience and many more. The challenges are ability to adopt, public support, confidentiality, integrity, authentication and others. The use of e-banking has brought many benefits amongst which include: there are no barrier limitations; it is convenient; services are offered at minimal cost; it has transformed traditional practices in banking; the only way to stay connected to the customers at any place and any time is through internet applications; it results in high performance in the banking industry through faster delivery of information from the customer and service provider; customers prefer the use of e-banking because it saves time; it makes possible the use of innovative product or service at a low transaction fees (Chavan, 2013). Banks have adopted e-banking system to achieve higher levels of service quality to create high levels of customer satisfaction, an antecedent of sustainable competitive advantage (Daneshvar & Ramesh, 2011)

One of the most important problems of a developing economy is capital formation. In current scenario the economic development of our country also depends on organisation of internal trade and expansion of foreign trade, especially exports. Therefore policies of the banking system affect economic development of our country (Shikha & Jain, 2013). Studies have also suggested that that all the banks in India offer similar kind of services, but may vary in terms of service quality (Khurana, 2013). The level of customer satisfaction is higher for private sector banks than for public sector banks. Public sector banks must focus on their functioning to compete with the private banks (Sawant et al., 2013). There was reduction of cost through substantial improvement in efficiency by business organisations. This resulted in banks diverting their focus towards extensive computerisation and electronic operations. Internet banking started with simple functions such as real time access to information about interest rate, checking account balances and computing loan eligibility. However, these services have graduated to online bill payment, transfer of funds between accounts and cash management services for corporate organisations and individuals (Masocha et al., 2011).

Table 1: Cumulative Response Given to Different E-Channels

E-CHANNELS	ATMs	Debit Cards	Credit Cards	Internet Banking	Mobile Banking	Smart Cards	Tele-banking
TOTAL	455	401	365	376	362	292	298
PERCENTAGE	91%	80.20%	73%	75.20%	72.40%	58.40%	59.60%

Source: Author's compilation

Figure 1: Percentage Rating Provided to Different E-Channels

Source: Author's compilation

Research Methodology

This present study is based on primary data. The primary data were collected with the help of a questionnaire from a random sample of customers who transact with the different banks within the city of Kolkata. An initial study on e-channels and e-services was undertaken to analyse the scope and level of awareness among the customers. The next level of analysis followed data collection with the help of a structured questionnaire to understand the factors affecting customer perception in electronic banking. A wide range of factors including the available channels, the benefits incurred due to electronic banking and the threats for a customer due to technology was considered. The questionnaire was constructed using a 5 point Likert scale. The data collected was analysed by using the market research tool of Factor Analysis. Factor analysis is a general name denoting a class of procedures, primarily used for data reduction and summarisation.

Data Analysis

Response about the customers' perception about electronic banking was collected from a random sample of 100 people in a form of questionnaire. From their responses it

is quite evident that the most preferred electronic channels by the banking customers are ATMs (91%) followed by debit cards (80.20%), Internet banking (75.20%), credit cards (73%), mobile banking (72.40%), tele-banking (59.60%) and smart cards (58.40%) being least preferred.

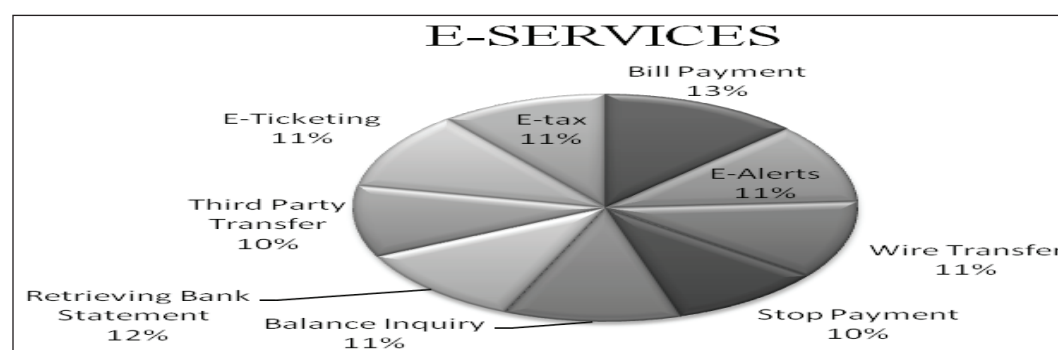
It is also evident that the most preferred e-services provided by banks are easy bill payment (87.40%) followed by retrieving bank balances (78.60%), e-alerts (77.80%), instant bank balance inquiry (77.60%), easy wire transfer (76%), e-ticketing (76%), e-tax (73.80%), third party transfer (69.60%) and stop payment (68.40%) being least preferred

Factor analysis is a general name denoting a class of procedures, primarily used for data reduction and summarisation. The component matrix of the sample response collected is not an identity matrix which means that the components in the matrix are highly correlated. Therefore, the factor analysis is possible in this case. Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.614 (approx) A sample in order to be adequate to conduct the analysis must have the KMO score of above 0.6. Since in this case the KMO measure is more than 0.6 it means that the sample is adequate for the analysis. The eigen-value represents the total variance explained

Table 2: Cumulative Response Given to Different E-Services

E-SERVICES	Bill Payment	E-Alerts	Wire Transfer	Stop Payment	Balance Inquiry	Retrieving Bank Statement	Third Party Transfer	E-Ticketing	E-tax
TOTAL	437	389	380	342	388	393	348	380	369
PERCENTAGE	87.40%	77.80%	76%	68.40%	77.60%	78.60%	69.60%	76%	73.80%

Source: Author's compilation

Figure 2: Percentage Rating Provided to Different E-Services

Source: Author's compilation

by each factor. The eigen-value of the collected sample is shown in the total variance explained. As shown in Table 3, the components are arranged in the ascending order of the eigen-value of each component. The percentage of variance and cumulative percentage of variance is calculated for each component. Then we arrived at the 9 factors which would contribute the maximum to the analysis based of their percentage of variance score. The first factor has the score of 10.68% (approx.) and the last factor has the score of 6.01% (approx.) with the cumulative score of all factors of 67.52%. Then we arrive at the rotated component matrix.

In Table 3, it is observed that which the components that together form individual factors are. It is determined that observing the maximum contribution of each component to a particular factor. Factor 1 comprises components like time saving, instant bill payment, instant bank balance enquiry and instant e-ticketing, mobile recharge, paper currency etc. Therefore the factor is named as *Time Efficiency*. Factor 2 comprises components like cost effective and use of debit/ credit card details. Therefore the factor is named as *Ease of transaction*. Factor 3 comprises components like confusion in customers' mind, having technical hurdles and having hidden costs. Hence the factor is named as *Knowledge Base*. Factor 4

comprises components like accurate fast fund transfer, providing accurate information and requiring technical knowledge. Therefore the factor is named as *Accuracy*. Factor 5 comprises components like easy online trading and having strong financial intermediation, hence named as *Financial Integration*. Factor 6 comprises components like providing effective electronic services and having adequate electronic channels. Therefore the factor is named as *Effectiveness*. Factor 7 comprises components like having unhindered monetary transaction, privacy and paying additional charges. Therefore the factor is named as *Cost of Technology*. Factor 8 comprises components like having transparency and successful diversification of e-banking in rural area. Hence the factor is named as *Decentralisation*. Factor 9 comprises components like having easy access, different formalities and suitability for a layman. Therefore the factor is named as *Accessibility*. These are the 9 factors which have a significant impact on customers' mind while dealing with e-banking.

Results and Findings

From the responses collected it is evident that customers reflects positive attitude towards the e-banking. A random sample of 100 banking customers was selected and provided with a well-structured questionnaire where the

Table 3: Rotated Component Matrix

	1	2	3	4	5	6	7	8	9
COST EFFECTIVE	0.278441	0.707531	-0.0331	0.002318	0.153898	-0.22697	0.046746	0.324514	-0.02077
TIME SAVING	0.72586	0.00026	-0.05871	0.2438	-0.03128	0.177912	0.032257	-0.14094	-0.03764
ACCESSIBLE	0.09072	0.232028	-0.08952	0.38174	0.132698	-0.04043	-0.00789	0.364706	0.465413
FUND TRANSFER	0.270182	0.158209	-0.01393	0.425936	0.231592	0.360969	0.159158	0.066151	-0.29755
BILL PAYMENT	0.768778	0.118972	-0.09116	-0.01949	0.210213	0.091132	-0.06771	0.120296	0.071784
ONLINE TRADING	0.119272	0.43477	-0.07429	0.080223	0.604392	0.181869	0.167738	-0.15142	0.266576
MONETARY TRANSACTION	0.048348	-0.19587	0.060447	0.213131	-0.07518	0.213281	0.558065	0.441535	-0.10291
PRIVACY	-0.10895	0.16996	-0.07373	0.177311	-0.0507	-0.03496	0.765864	0.04036	0.047643
TRANSPARENCY	0.131161	0.172448	-0.2684	0.053267	0.019986	0.016994	0.130407	0.673301	0.057507
E-SERVICE	-0.1593	0.383542	-0.27857	0.235755	0.14154	-0.52808	0.068459	0.352305	0.107191
ACCURATE INFORMATION	0.041053	-0.00367	-0.07404	0.818247	-0.01686	0.040878	0.204206	0.077028	0.0513
BANK BALANCE	0.438564	0.043268	-0.18317	0.153832	0.358429	0.192606	-0.30452	0.365489	-0.26609
CARD DETAILS	0.401176	0.476205	-0.12137	-0.17893	0.446199	-0.10849	0.09384	0.060643	-0.1186
MOBILE RECHARGE	0.738451	0.224136	0.031579	-0.00375	-0.16262	-0.29783	0.015846	0.169025	0.004045
ADEQUATE E-CHANNEL	-0.01215	0.04532	-0.04679	0.05395	-0.01116	0.837707	-0.00777	0.122486	0.157921
PAPER CURRENCY	0.834499	0.05572	-0.06905	0.136424	-0.04725	0.128726	-0.01161	-0.01745	0.043129
CUSTOMER CONFUSION	-0.19053	-0.10294	0.679336	0.045895	0.032359	0.103731	-0.00936	-0.14681	0.181344
FORMLITY	-0.36133	0.276253	0.221449	-0.25973	-0.21973	0.096384	-0.1686	0.100511	-0.59276
TECHNICAL HURDLE	-0.06031	0.16707	0.743582	0.018073	0.014634	-0.15677	-0.00402	-0.15791	-0.17487
HIDDEN COST	0.075508	-0.24588	0.759253	-0.14508	0.109649	0.059948	-0.17537	0.072581	-0.01531
RURAL AREA	-0.33068	-0.09154	0.285007	-0.34578	-0.10132	0.265496	0.241915	0.422737	0.128265
ADDITIONAL CHARGES	-0.29897	0.023396	0.319867	0.193798	-0.2526	0.163551	-0.51316	-0.07876	-0.00622
TECHNICAL KNOWLEDGE	0.153238	0.288716	0.260958	0.457601	-0.04084	-0.13857	-0.3508	-0.02013	0.07533
LAYMEN	-0.14134	0.100771	0.113331	-0.10522	-0.23314	0.225859	-0.05312	0.058272	0.723301
FINANCIAL INTERMEDIATION	-0.03375	-0.05463	0.20837	0.019813	0.763177	-0.08553	-0.08253	0.062814	-0.13375

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation

Source: Author's compilation

respondents were asked to rate the different e-channels, e-services and other important variables according to their perception on e-banking. The rating was done from 1 to 5, with rate 5 allotted to the most preferred option and rate 1 allotted to least preferred option by respondent. According to the data collected, the electronic channels mostly preferred for banking purpose by the respondents are ATMS, debit cards, Internet banking, credit cards, mobile banking, tele-banking, and smart cards in ascending order of the total marks allotted to them. Similarly, the most preferred electronic services provided by bank, according to the respondents are bill payment, retrieving bank statements, e-alerts, balance inquiry, wire transfer, e-ticketing, e-tax, third party transfer and stop payment in ascending order of the total marks allotted to them by respondents.

Factor Analysis has been done on the variables that impact the customers' perception on e-banking. The 25 variables

were crunched into most important 9 factors and arranged in order of their contribution to the customers' perception on e-banking. Factor 1 being the most important factor comprises of components like time saving, instant bill payment, instant bank balance enquiry and instant e-ticketing, mobile recharge, etc. Therefore the factor is focusing more on the time factor and hence named as *Time Efficiency*. It means that according to respondents the time is a major factor because of which they prefer e-banking. Factor 2 is the next most important factor and comprises components like cost effectiveness and usage of debit/ credit card details. Therefore the factor focuses more on the simplified and effortless aspect of carrying out banking transaction and is named as *Ease of Transaction*. Factor 3 is next important factor and comprises components like confusion in customers' mind, having technical hurdles and having hidden costs.

Therefore the factor focuses more on the knowledge about using electronic medium for banking. As per customers, they must be aware about the hidden costs of using the e-channels and must use it properly so there are less technical problems and confusion in customers' mind. It is named as *Knowledge Base*. The next important factor is Factor 4 which comprises components like fast fund transfer, providing accurate information and requiring technical knowledge. Therefore the factor is bothered more about the accuracy in the completion of financial transaction. Accurate information and proper technical knowledge is required with fast fund transfer and hence named as *Accuracy*. Factor 5 comprises components like easy online trading and having strong financial intermediation. Therefore the factor reflects e-banking as a platform where different players across borders can easily exchange their finances and hence is named as *Financial Integration*. Factor 6 comprises components like providing effective electronic services and having adequate electronic channels. Therefore the factor stresses on the effectiveness of e-banking in providing effective and adequate e-channels and e-services so that the banking activities can be carried out unhindered. Hence it is named as *Effectiveness*. Factor 7 comprises components like having unhindered monetary transaction, privacy and paying additional charges. Therefore the factor is stating the different costs of technology that a customer has to pay. The level of privacy, the additional charges, and level of hindrance for monetary transaction are the cost that a customer must decide to pay and hence is named as *Cost of Technology*. Factor 8 is the less important factor that comprises components like having transparency and successful diversification of e-banking in rural area. Therefore the factor stresses on how much transparent e-banking is and how successfully they have decentralised their activities to rural areas as well, hence is named as *Decentralisation*. The least important factor according to the customers is Factor 9 which comprises components like having easy access, different formalities and suitability for a layman. Therefore the factor shows how accessibility factor of e-banking for common people and is named as *Accessibility*. These are the 9 factors which have a significant impact on customers' mind while dealing with e-banking.

Conclusion

The research paper attempts to show the role and importance of banking sector and the change that took place after the newly emerged and advanced Information Technologies were introduced to the sector. The paper tries to observe the customers' perception on the new form of banking and tries to identify the factors that affect them the most. The factors are time efficiency, money value, knowledge base, accuracy, financial integration, effectiveness, cost of technology, decentralisation and accessibility. By improving this factors and overcoming such challenges e-banking can prove itself a major factor contribution to the development of nation's financial market.

However, the research was limited in certain aspects due to time and other constraints. Firstly, the research work was done by looking at the customer's perspective only and not by banks' or other stakeholders' perspective. Secondly, the research was conducted on primary data only in form of questionnaire and only factor analysis was done on the data collected. Thirdly, the research was restricted to the sample of 100 people residing in Kolkata only. Therefore, with the growth and popularity of e-banking in the nation, there lies a huge future scope for further research and study in this field.

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