



## INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION AND MANAGEMENT

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- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio," Ohio State University.

**CONTRIBUTIONS TO BOOKS**

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

**JOURNAL AND OTHER ARTICLES**

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

**CONFERENCE PAPERS**

- Garg Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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**CONSUMER AWARENESS TOWARDS MOBILE - BANKING AMONG WORKING PROFESSIONALS**

**RAJAN GIRDHAR**  
LECTURER  
LOVELY SCHOOL OF BUSINESS  
LOVELY PROFESSIONAL UNIVERSITY  
PHAGWARA

**NIDHI BHARDWAJ**  
LECTURER  
LOVELY SCHOOL OF BUSINESS  
LOVELY PROFESSIONAL UNIVERSITY  
PHAGWARA

**ABSTRACT**

With more than 650 million mobile users and wireless tele-density reached at approximately 59 percent, India is all set to accept mobile technology for payments and remittances. Mobile commerce or M-Commerce is at early stage in India. Mobile remittances have done wonders in other emerging market economies like Kenya and the Philippines. In India, many banks have recently joined hands with mobile operators to offer a bouquet of financial products such as saving accounts, pre-paid instruments and credit products through a mobile phone based platform which reflects their growing interest of addressing the large number of mobile users in the country that do not have access to the banking. The partnership between mobile operator, banks and merchants enables a consumer to pay their utility bills, recharge their accounts, shop, book tickets, view bank accounts and accept remittances; therefore converting a mobile into a 'Mobile Wallet'. The banks are nowadays promoting mobile banking services to their customers. This study examines the level of awareness towards mobile banking services among working professionals.

**KEYWORDS**

Consumer Awareness, Mobile Commerce, Mobile Banking & Mobile Wallet.

**INTRODUCTION**

The wireless technology and increasing mobile penetration have created tremendous business opportunities in terms of communication, purchasing, trading etc. Moreover, higher data speed and mobile technology enables mobile devices to access, receive and send huge range of information as well as services in real time. The market for mobile phones and other handheld devices is growing due to low costs, ease of use and increasing computational power. Very few industries have witnessed the kind of growth telecom has seen in India. Currently, we have more mobile phones in our country than land lines. The mobile subscriber base has largely grown from around 10 million subscribers in 2002 to more than 700 million subscribers in 2010 leading wireless tele-density reaches to 63.22<sup>1</sup> [See Exhibit – I below].

**OVERVIEW OF INDIA'S MOBILE MARKET – 2010****TABLE - I**

Category	Units
<b>Mobile Subscribers :</b>	
• Total number of wireless subscribers - GSM, CDMA & FWP <sup>2</sup> (as on Dec, 2010)	752.19 Million
• Overall Wireless Tele-density <sup>3</sup>	63.22
<b>Service Providers :</b>	
• Five Major Wireless Telecom Service Providers	1. Bharti – 20.27% 2. Reliance – 16.70% 3. Vodafone – 16.52% 4. BSNL – 11.53% 5. Tata – 11.20% (Market share as on 31.12.2010 – data released by TRAI)
<b>Net Addition :</b>	
• Yearly rate of growth (Wireless Subscribers) From Dec 2009 to Dec 2010	43.23%

Source: TRAI [http://traai.gov.in]

The mobile phone revolution is sweeping across India and has huge potential to transform the lives of the nation's millions of rural people who have mobile phones but they do not have access to banks. This gap is only widening. The mobile banking technology can bridge this 'digital divide' and foster financial inclusion (Gandhi R., 2010). The Internet has carved an incredible market space. In parallel with Internet, another technology streams have also emerged strongly to play increasingly important role in business and society: mobile communications (Feng *et al*, 2006).

**MOBILE COMMERCE**

Many experts classified 1980s as the decade of the PCs, the 1990s as the decade of the Internet, and claimed the first decade of the 21<sup>st</sup> century as the decade of mobile computing and mobile commerce (m-commerce). M-commerce is in very early stage of development in India. Several definitions of mobile commerce are found in academic literatures. Before defining m-commerce, this paper should first define Mobile – business (M-business). It is defined as the exchange of goods, services, knowledge and information through mobile technology. M-business includes not only consumer-facing applications but also enterprise solutions that enable the companies to operate more efficiently by serving their customers in a better way and generate additional revenues. Mobile commerce (m-

<sup>1</sup> According to the Telecom Subscription Data as on 31st December 2010 released by TRAI- Telephone Regulatory Authority of India

<sup>2</sup> GSM- Global System for Mobile Communications, CDMA - Code division multiple access, FWP – Fixed wireless phone.

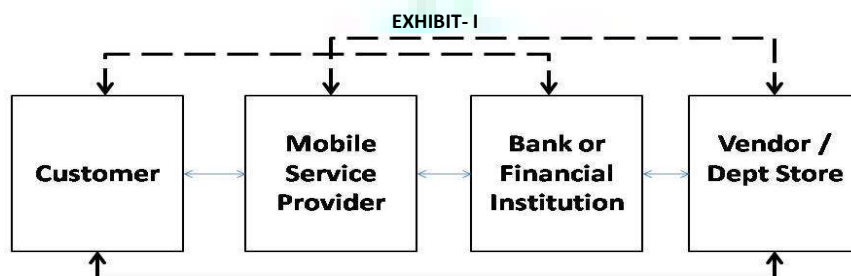
<sup>3</sup> The number of landline/mobile telephones in use for every 100 individuals living within an area. [Source: <http://encyclopedia2.thefreedictionary.com/teledensity>]

commerce), on the other hand, is simply defined as executing any transaction using mobile technology. A mobile commerce is the one that involves exchanging internet contents with a network of mobile people via wireless device. Paying a utility bill and buying a movie ticket on a WAP<sup>4</sup> phone is an example of m-commerce. In very simple terms, one can say: M-commerce = E-commerce<sup>5</sup> + Wireless Web.



A mobile commerce is the one that involves exchanging internet contents with a network of mobile people via wireless device. M-Commerce still in its infancy is not currently a major economic force but in all likelihood it will become the future of global business (Kumar *et al*, 2008).

A typical flow of relationship between customer, bank, mobile service provider and vendor (shown in exhibit –II) can be defined where the customer may have relationship with mobile service provider who provides telecom service and the bank or financial institution which enable the transaction to take place. In order to purchase products, the customer requires establishing a virtual bank account to handle the transactions that the customer makes, and payment for the products etc.



Two forms of mobile payments are available: the mobile credit card and mobile wallet. A mobile wallet is in essence a smart card application stored in a mobile device that functions in a similar manner to debit cards and has bank accounts and security authentication tools (Flatraaker, 2008). On the other hand, a mobile credit card (using the mobile handset) functions as a credit card and permits online purchasing (Dahlberg *et al*, 2006). The mobile wallet idea is similar to m-commerce using a cell phone as a mobile payment device and considered to replace cash especially 'micro payments'.

## MOBILE BANKING

Mobile banking is an integral part of m-commerce. 'Mobile Banking' can be defined as "a channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant (PDA)<sup>6</sup>. While physical or traditional payment system with cash and cheques are still prevalent in some parts of the world, electronic payment systems, especially mobile payment are gaining consumer acceptance in many economies due to high mobile technology penetration. It provides exciting possibilities to increase remittance flows through banks, and include the poor and un-banked to the banking net<sup>7</sup>. Mobile technology is changing the design and delivery of personal financial services (Luarn & Lin, 2005). Wireless technology and mobile phones have transformed the banking services by channelizing it through mobile devices which creates enormous growth potential of banking as well as other financial services (Singh S., *et al*, 2010).

M-banking has the potential to bring basic banking and electronic transactions services to unbanked consumers in developing markets. Mobile banking (m-banking) involves the use of a mobile phone or another mobile device to undertake financial transactions linked to a client's account (J. Anderson, 2010). Mobile banking is an extension to application such as online banking and phone banking. Typical functions of m-banking include viewing account balances, transferring funds from one account to another, receiving alerts and paying bills. However, m-banking cannot support all banking functions. For instance, cash can only be withdrawn at physical branches or at automated teller machines (Barnes & Corbitt, 2003).

M-banking is generally viewed as a channel that is more flexible and ubiquitous than the existing banking channels. The mobile banking services can be categorized into – 'Transaction based' and 'Enquiry based' which can also be viewed as Pull/Push nature. 'Pull' is when the customer explicitly requests for a service or information from the bank, say, for last five transactions statement etc. 'Push' is when the bank sends out an alert when your account balance goes below a threshold level. Based upon this classification, we can present some of the mobile banking services - Fund transfer, Bill Payment, other financial transactions, Balance enquiries, Bills payment, Account statement, Transaction history, Cheque status etc.

## TECHNOLOGIES IN USE FOR M-BANKING

At present, mobile banking is being used by deploying one or more than one of the following channels:

- **IVR (Interactive Voice Response):** Banks advertise a pre-specified number to their customers where they can make a call which is usually greeted by a stored electronic message followed by a menu of different options. IVR-based systems are generally deployed by the merchant establishments and banks allowing to the account holders to use their debit/credit card to carry out transactions. It is more expensive as compared to other channels e.g. SMS and WAP<sup>8</sup>.
- **SMS (Short Message Service):** The customer requests for information by sending SMS containing a service command at a pre-specified number. Almost all mobile phones are SMS enabled which the most encouraging point for banks to deploy SMS enabled mobile banking technology. By registering for the services with banks, the customer can carry out merchant payment transactions by following the prescribed syntax.
- **WAP (Wireless Access Protocol):** Using the same concept of internet banking, the banks maintain WAP sites which can be accessed by customers using a WAP compatible browser on their mobile phone. Much like internet banking.
- **Standalone Mobile Application Client:** These are the customized mobile applications which can be downloaded on customer's mobile device before they can be used. 'Stock trading' and 'Enterprise mobility' are the examples of such application.

<sup>4</sup> The Wireless Application Protocol (WAP) is an open, global specification that empowers mobile users with wireless devices to easily access and interact with information and services instantly. [Accessed from <http://www.wapforum.org>]

<sup>5</sup> Electronic commerce means buying and selling of goods and services across the internet. [Accessed from <http://www.cyberwebglobal.com/ecommerce.htm>]

<sup>6</sup> PDA is a handheld device that combines computing, telephone/fax, internet and networking features. [Accessed from <http://www.webopedia.com/TERM/P/PDA.html>]

<sup>7</sup> GSMA, *Mobile Money for the Unbanked*, 2010 [Accessed from: <http://www.gsmworld.com>]

<sup>8</sup> The Wireless Application Protocol (WAP) is an open, global specification that empowers mobile users with wireless devices to easily access and interact with information and services instantly. [Accessed from <http://www.wapforum.org>]

## M-BANKING SERVICE BY SOME OF THE BANKS IN INDIA

TABLE: II

Name of Bank	M-banking Service	Name of M -banking Service	Name of Bank	M-banking Service	Name of M -banking Service
1. Allahabad Bank	Scheduled to launch in Apr 2011 <sup>9</sup>	N.A	26. IndusInd Bank	Yes	INDUS MOBILE BANKING
2. Andhra Bank	Yes	ABK mPay	27. ING Vysya Bank	Yes	ING Mobile Banking
3. Axis Bank	Yes	Axis Mobile	28. Jammu & Kashmir Bank	Yes	SMS Alert Services
4. Bank of Baroda	No	N.A	29. Karnatka Bank	Yes	Karnataka Bank Mobile Banking
5. Bank of India	Yes	Star <sup>Connect</sup> Mobile Banking Services	30. Karur Vysya Bank	Yes	KVB 'SMS alerts'
6. Bank of Maharashtra	Yes	Maha Mobile	31. Kotak Mahindra Bank	Yes	Kotak Mobile banking
7. Bank of Rajasthan	Yes Amalgamation of Bank of Rajasthan Ltd. with ICICI Bank Ltd. with effect from August 13, 2010	iMobile (by ICICI Bank)	32. Oriental Bank of Commerce	Yes	OBCmPAY
8. Canara Bank	No	N.A	33. Punjab & Sind Bank	No	N.A
9. Catholic Syrian Bank	No	N.A	34. Punjab National Bank	Yes	Pnb Mobile
10. Central Bank of India	No	N.A	35. South Indian Bank	Yes	SIB Mobile Service
11. Citibank	Yes	Citi Mobile Apps, Citi Mobile for Smartphones and Citi Text Banking	36. Standard Chartered Bank	Yes	Standard Chartered Mobile Bank
12. City Union Bank	Yes	CUB's SMS Banking	37. Syndicate Bank	Yes	SyndSMSBanking
13. Corporation Bank	Yes	Corporation Bank SMS Banking facility	38. State Bank of India and Associate Banks :	Yes (SBI and Associate Banks)	State Bank Freedom Banking (used by SBI and Associate Banks)
14. DBS Bank	Yes	DBS mBanking	38.1 State Bank of Bikaner & Jaipur		
15. Dena Bank	Yes	Dena m-banking	38.2 State Bank of Hyderabad		
16. Deutsche Bank	No	N.A	38.3 State Bank of Indore		
17. Development Credit Bank	Yes	DCB Mobile Banking	38.4 State Bank of Mysore		
18. Dhanalakshmi Bank	Yes	Dhanalakshmi Mobile Banking	38.5 State Bank of Patiala		
19. Federal Bank	Yes	FedMobile	38.6 State Bank of Travancore		
20. HDFC Bank	Yes	HDFC Bank Mobile Banking	39. UCO Bank	Yes	UCO Mobile Banking
21. HSBC	Yes	HSBC Mobile Banking	40. Union Bank of India	Yes	Umobile
22. ICICI Bank	Yes	iMobile	41. United Bank of India	Yes	UBI SMS Banking services
23. IDBI (for payment)	Yes	paymate	42. Vijaya Bank	Yes	V-Mobile banking
24. Indian Bank	Yes	INDmobileBANKing	43. Yes Bank	Yes	Yes touch
25. Indian Overseas Bank	Yes	IOBMobile			

Source: Web-site of banks. [Last viewed on 10 March 2011]

Almost all of the above mentioned banks (except few indicated as N.A) provide mobile banking services to their customers.

## WHY M-BANKING?

- **More ways to access account:** Anywhere anytime banking is growing fast in India. As India is becoming technology driven this is the edge where mobile banking has edge over two modes of banking. Banks help to access account via texting
- **Mobile: An exploding platform:** Mobile helps people to stay connected even when they are miles away from their branch. Presently banks are rolling out with new services in mobile banking that will help people to access more easily.
- **Mobile banking is raging up quickly:** mobile banking is bringing a new focus in the phase of banking. The potential for this area is significant. Today only about 45 million people without traditional bank account use mobile money.
- **Rapid evolution of global protocols such as WAP (wireless application protocol):**

This enables the communication channel between computers and mobile devices. The WAP component essentially provides the facility for reformatting data for display on wireless handsets.

<sup>9</sup> Allahabad Bank to launch mobile banking in April, 2011 [Accessed from: <http://www.business-standard.com/india/news/allahabad-bank-to-launch-mobile-banking-in-april/427082>]



## MOBILE BANKING: NO WIRES, NO WORRIES, NEW CUSTOMERS

With the proliferation & cost effectiveness of mobile delivery channel, banks have a built-in delivery mechanism that can offer services & 24x7 access regardless of where the customer happens to be. Unlike PC-Based e-banking, m-banking provides banks with the unprecedented opportunity to reach their customers in an unrestricted environment. The big benefits for banks higher customer satisfaction & loyalty, no transaction-based fee revenue, lower cost of ownership and integrated customer relationship management channel.

## KEY CHALLENGES INVOLVED IN M-BANKING

- **Ambiguity among customers:** India is the world's second largest mobile market, with over 400 million subscribers. Despite of this aspect there exist a loophole of financial illiteracy, people are not fully aware of the applications provided in mobile banking. People are unable to understand the applications.
- **Security:** security of financial transaction is another challenge which is being faced by many people. However, some of the aspects need to be addressed jointly by application developers:-
  - a) Authentication of the device with service provider before initiating a transaction.
  - b) User ID/Password authentication of bank's customer.
  - c) Encryption the data being transmitted over the air.
- **Variety of devices:** There is large number of mobile phones and it is a big challenge for banks to offer a banking solution related to a particular handset. The desire for interoperability depends on banks because banks go for only those transactions that generate volume. In present banking interface are well defined and money movements between banks follow the ISO-8583 standard.
- **Cloning** – Copying the identity of one mobile phone to another, thereby allowing the perpetrator to masquerade as the victim, normally with the intent to have calls and other services billed to the victim's cellular account. In the case of mobile banking, cloning could give the hacker access to the victim's financial accounts
- **Hijacking** – The attacker takes control of a communication between two entities, masquerading as one of them. As with cloning, hijacking could give the hacker access to the victim's financial accounts.

## OBJECTIVES OF STUDY

The primary objective of this study is: (a) to examine the awareness level of mobile banking services among working professionals. The secondary objectives are: (b) to investigate whether or not they are using mobile banking and why. (c) to highlight major opportunities and challenges of mobile banking in India.

## RESEARCH METHODOLOGY

This paper is based on primary as well as secondary data. The primary data collected through a structured questionnaire (using 'Google docs - form'<sup>10</sup>) from 82 respondents based in (i) Punjab (Jalandhar, Phagwara and Fatehgarh sahib district) & Chandigarh; (ii) New Delhi & National Capital Region (Gurgaon and Noida). A total of 250 respondents<sup>11</sup> from two different states were sent questionnaire using convenience (non-random) sampling out of which total 104 respondents actually responded as following:-

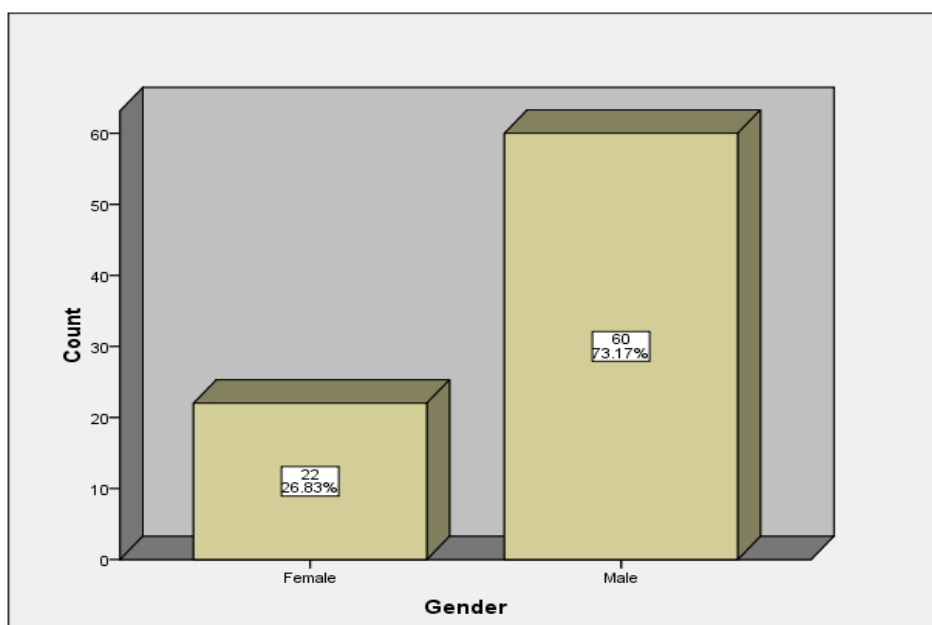
TABLE- III

Place(s)	Sample Size	%age	Actual Respondents	%age
Punjab	150	60%	58	70.7%
Delhi & NCR	100	40%	24	29.3%
Total	250	100%	82	100%

The survey was concerned with user and non-user of mobile banking especially working professionals. The items in the questionnaire were constructed based on a typical variety of professions existing in the country and their timing of work. The secondary data is taken from journals, magazines and newspapers.

## RESEARCH FINDINGS

1. The total of 82 responses was obtained from 60 Males and 22 Female respondents.



<sup>10</sup> Google form can be accessed from the link -[<https://spreadsheets.google.com/viewform?formkey=dHJSbUFTaE9qdTVSU3p1Mml1VEJyQ1E6MQ>]

<sup>11</sup> The respondents included working professionals – Teachers as well as administrative staff of universities/educational institutes, Account professions, Lawyers, Doctors and IT Professionals.

2. Out of total 82 respondents, majority of them (total 30) belonged to less than 25 years age group and very few of them (total 5) belonged to 35-40 years age group as shown in Table- IV below:

TABLE- IV

		Age of Respondents (in Yrs.)					Total
		<25	25-30	30-35	35-40	>40	
Gender	Male	23	16	8	4	9	60
	Female	7	12	0	1	2	22
Total		30	28	8	5	11	82

3. Out of exhaustive list of occupations (Table- V) given in the questionnaire, most of the respondents (45) belonged to 'Teaching' occupation and very few of them belonged to administrative as well as other categories of occupation as shown below:

TABLE- V

Age of Respondent	Occupation							Total
	Teacher	Administrative	Doctor	Lawyer	Accounts or Finance	IT Professional	Others	
<25	14	3	0	0	5	8	0	30
25-30	21	0	1	1	2	0	3	28
30-35	0	0	0	3	1	4	0	8
35-40	5	0	0	0	0	0	0	5
>40	5	0	3	1	2	0	0	11
Total	45	3	4	5	10	12	3	82

4. The awareness level of sample was counted to be 53 (around 65%) of total 82 respondents and very few- total 20 (around 38%) use mobile banking whereas others do not use M-banking service.

TABLE- VI

	Do you use Mobile Banking service provided by your bank?		Total
	Yes	No	
Does your bank offer Mobile Banking facility? Yes	20	33	53
No	0	27	27
Don't Know	0	2	2
Total	20	62	82

5. By applying Factor analysis, it is intended to study the patterns of relationship among given dependent variables, with the goal of discovering something about the nature of the independent variables that affect them, even though those independent variables were not measured directly. Similarly, in this paper, it is attempted to discover such independent variables which affect the pattern of relationship among variables.

5.1 The data adequacy was checked by applying KMO and Bartlett's test (Table VII) and it was found that sampling adequacy value stood at 0.536 which was above the standard value of 0.5. Hence, it is concluded that the data is valid for factor analysis.

TABLE- VII: KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.536
Bartlett's Test of Sphericity	Approx. Chi-Square
	Df
	Sig.
	10.422
	10
	.404

5.2 The value of communalities is 49.353% (Table- VIII) and two factors were found coming out of available data as their Initial Eigenvalues were above 1. Rest of the 50.647% data was being lost while considering these two factors.

TABLE- VIII: 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	1.408	28.156	28.156	1.408	28.156	28.156	1.405	28.093	28.093
2	1.060	21.197	49.353	1.060	21.197	49.353	1.063	21.261	49.353
3	.970	19.393	68.747						
4	.854	17.074	85.821						
5	.709	14.179	100.000						

5.3 Four variables were worth considering whose values were above 0.5 (Table- IX). In the first factor, the following four variables become eligible into formation of single major factor:-

5.3.1 M-banking transactions are easy to learn and use;

5.3.2 M-banking transactions cheaper than other channels of banking;

5.3.3 M-banking transactions are confidential, authenticated and secured; and

5.4.4 M-banking is more efficient, convenient and safer than internet banking.

These four variables coupled together generate two major factors that are (a) 'Secured & easy accessibility' and (b) 'Uninterrupted Mobility' which strongly influence usage or adoption of M-banking services by sample.

TABLE- IX: ROTATED COMPONENT MATRIX<sup>a</sup>

	Component	
	1	2
I feel that mobile banking services are easy to learn and use	.545	-.105
I feel that mobile banking offers option to bank anytime and anywhere	.167	.856
I feel that the cost incurred during mobile banking transactions is cheaper than other channels of banking	.607	.098
I feel that mobile banking transactions are confidential, authenticated and secured	.581	-.518
I feel that mobile banking is more efficient, convenient and safer than internet banking	.611	.201

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

## CONCLUSION

Since, it was found that awareness level of mobile banking services among working professionals is too low. The reasons for its usage by the current users and of those who are currently non-users strongly weigh on two major factors – 'Secured & easy Accessibility' and 'Uninterrupted Mobility' to exist in m-banking services. The banks must educate their customers by communicating advantages of m-banking services by weighing upon the above stated two major factors. The working professional are found to be occupied in their respective offices whereby access to the banking services happens through e-banking or m-banking. There are enormous opportunities available for the banks to provide a bouquet of many financial services to the Indian masses especially those who have no access to the banks. For it, the banks need to increase awareness campaigns inside as well as outside bank branches. Increasing mobile penetration in the country may become one of the strongest opportunities for not only mobile service providers but for banks as well. At the same time, the banks must ensure the m-banking services are equipped with an authentic and secured mode of enabling the transaction which raises the level of confidence among users and encourages them to increase the frequency of transaction using m-banking gateway.

## REFERENCES

1. Anderson J., *M-banking in developing markets: competitive and regulatory implications*, Emerald Group Publishing Limited, Vol. 12 No. 1 2010, pp. 18-25.
2. B. Ravi Kumar et al., *M-Commerce: A Study*, Mobile and Pervasive Computing (CoMPC-2008).
3. Singh S., Srivastava V., Srivastava R.K., Customer Acceptance of Mobile Banking: A Conceptual Framework, *SIES Journal of Management*, April – August 2010, Vol. 7 (1) pp. 55-64.
4. Luarn, P. & Lin, H. Towards an Understanding of the Behavioral Intention to Use Mobile Banking, *Computers in human behavior*, Volume 21, Issue 6, November 2005, pp. 873-891.
5. Flatraaker, D, Mobile, Internet and electronic payments: the key to unlocking the full potential of the internal payments market, *Journal of Payments Strategy & Systems*, 3(1), 2008, pp. 60-70.
6. H. Feng, T. Hoeglar, W. Stucky, Exploring the Critical Success Factors for MobileCommerce, *Proceedings of the International Conference on Mobile Business (ICMB'06)*, 2006.
7. Gandhi R., Calling on Mobile Banking: Financial Inclusion in Rural India, *South Asia Monitor – Center for Strategic & International Studies*, Number 143, July 2010. [web: [www.csis.org](http://www.csis.org)]
8. Dahlberg, T.; Mallat, N.; Ondrus J. and Zmijewska, A., 2006. M-payment market and research-past, present and future, *Helsinki Mobility Roundtable*, Helsinki, Finland
9. Barnes, S.J. & B. Corbitt, Mobile banking: concept and potential. *International Journal of Mobile Communications*, 2003. 1(3): pp. 273-288
10. Barati S, Mohammadi S, An Efficient Model to Improve Customer Acceptance of Mobile Banking, *Proceedings of the world congress on engineering and computer science 2009*, Vol II
11. ET Bureau, Mobile wallet set to broaden usage of mobile wallet, *Economic Times*, Dec 5, 2010. [Accessed from: <http://economictimes.indiatimes.com/features/financial-times/Mobile-wallet-set-to-broaden-usage-of-mobile-phone/articleshow/7042168.cms>]
12. Today Bureau, Rural banking gets mobile push, *Business Today*, Jan 13, 2011 [Accessed from: <http://businesstoday.intoday.in/bt/story/rural-banking-gets-mobile-push/1/12229.html>]

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