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# M-payments: a study of customer's perspective

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## ABSTRACT

Mobile commerce has emerged as an innovative and consequential improved method of business over e-commerce. Mobile payment service is a modern innovation in this direction. M-Payment popularly known as 'Pay with your mobile' is a revolutionary, easy, convenient, and secure mobile payment service. According to Capgemini report 2008, there are approximately 30 million users of m-payments all over the world. Though it accounts for merely 1 percent of the value of gross global non-cash payments, the mobile payments market is growing very fast. In the background of these developments and changing scenario, the study examined the attitude of respondents about the new revolutionary M-payment technique. The study found that more than three fourth of the respondents have awareness and requisite know-how about introduction of M-payments facility. Retail purchases and bill payments have emerged as the two top preferences for M-payments. The survey conducted on the basis of gender of the respondents observed no significant difference in their motives and attitudes regarding the applicability and the concerns of this most far-reaching M-payments mode. It is found that the success of M-payment in principle depends on the wider acceptability of m-payments by merchants, clear picture about the settlement platform, and enactments of legislation and rules governing M-payments.

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## Introduction

Technology has impregnated our day-to-day life and turned into an indispensable part of our daily living. It is not just a communication tool but a personal device that can be used to perform a variety of functions to make life straightforward, expedient, and comfortable. Mobile payment service providers have understood the supremacy of this device in the right perspective. Mobile commerce has emerged as an immediate successor of e-commerce. Mobile payment service is a recent innovation in this direction. It is advancement over e-banking and mobile banking. M-Payment popularly known as 'Pay with your mobile' is a revolutionary, easy, convenient, and secure mobile payment service. M-payment means a payment for the product or service between two parties for which a mobile phone mechanism plays the key role in the initiation, authorization and/or realization of the payment. Mobile payment transactions are initiated via a mobile handset. These transactions can be initiated through SMS, i.e., payment through text message; WAP/Browser, i.e., payment via internet; and NFC, i.e., payment through short range wireless technology. NFC enabled phones are linked to bank accounts, and it provides the facility of direct debit from account. Besides this, these can be connected to financial instrument of customer's choice such as credit card, debit card etc. Mobile payments can be broadly classified into three categories i.e. payment for purchases, payment for bills, and fund transfers. In retail sector, this sophisticated and pioneering m-payment option can enhance their business as well as customer's experience, convenient and much more. The use of mobile phones to make payment for a variety of services is bound to create a new payment environment.

### Mobile payments: global statistics

Mobile payments market is growing very fast. According to Capgemini report 2008, there are approximately 30 million users

of m-payments all over the world. It accounts for merely 1 percent of the value of gross global non-cash payments. Asia accounts for 84 percent of entire m-payment users. Japan has emerged as the global m-payment leader with almost half of the global m-payment users. In the US, there has been a phenomenal rise in the number of mobile phones used. It has increased from 1 million to 9 million in the year 2007-2008. In Europe, most m-payments are made via sms. Table 1 reveals the data on mobile payment case studies on six countries, 2007:

The research observed that currently mobile phone is used as a prime tool for making low value payments. However, there is potential for making high value m-payments depending on risk, security, and other considerations. In most of the countries, telecom operators have been the pioneer of m-payment services as they have the technology with m-payments capabilities. Further, banks can also play a key role in m-payments by bringing their security capabilities in association with telecom operating companies in promoting m-payment services.

### Review of literature

This section deals with review of previous research on the mobile payment related issues. It has explored the different issues that have already been evaluated by the previous researchers, and provides guidelines for conducting research on the issues not been analyzed by the prior studies. A brief outlines of the previous researches is mentioned as follows:

**Jayewardhena and Foley (2000)** evaluated the impact of a number of factors on the financial services development. It observed that changes in technological, cultural, commercial and legal factors may help drive the development of financial services.

**Javalgi and Ramsey (2001)** observed that IT and telecommunication, social and cultural, government and regulatory factors may have impact on the flow of eCommerce.

**Bohle and Krueger (2001)** pointed out that mobile phones are relatively lesser used in the US as compared to Europe. The study postulated that cultural factors can influence the payment culture. In addition to cultural factors, industry strengths, home banking affinity of consumers, and strong mobile phone inclination can influence the adoption of mobile payment services.

**Huber (2004)** conducted a comparative study on mobile payment in Europe and the US. The study observed qualitative differences in adoption of mobile technologies, the varying payment habits of customers, and the stronger involvement of banking industry in the two regions.

**Sundquist S and Franklin et al (2002)** evaluated the effects of country characteristics, cultural similarity and adoption of timing on the diffusion of wireless communication.

**Ondryus and Pigneur (2004)** recommended a new architecture for mobile payment system to help improve business processes and increase customer loyalty. They proposed adoption of a three dimensional model based on 'Network-Device-Mobile Application'.

**Mahamood et al (2004)** explored the influence of culture on online shopping behaviour. The researches found the effect of demographic, lifestyle characteristics, and cultural variables in developing and developed countries.

**Rawson (2005)** in his article surveyed the regulatory issues in mobile transactions. It found that mobile transactions between different countries are relatively complex due to a complicated web of different laws and regulations.

**Zmijewska and Lawrence (2006)** pointed out that the lack of agreement and cooperation between stakeholders seems to obstruct the growth and development of m-payments.

#### Significance of the study

Mobile payment service is one of a recent origin, and offered by selected banks in India in association with PayMate. PayMate has more than 13000 accredited merchants consisting of leading retail merchants and online business portals. Paymate's mobile phone solution links customer's mobile phone to the financial instrument of the customers' preference i.e. bank account, credit card or a prepaid card. A registered customer can use mobile phone to pay for their retail purchases, monthly utility bills, and instantly send and receive money. This service permits the customer to use mobile phones as e-wallet to make easy and secure payments while shopping online, over the counter to accredited merchants who accept such payments. M-Payment can be used as a complement to cash, cheques, credit cards and debit cards. Mobile payment service has been reasonably successful in South Korea, Japan, and some other Asian countries. However, this service has not been very successful in Europe and North America. The main difference between success in a region and failure in the other can be mainly accredited to the 'payment culture' of the consumers which are country specific.

In the background of these developments and review of literature, the researcher has decided to conduct research on the selected topic. The output of this study is likely to provide a valuable input to mobile payment service providers. It might also help service providers better understand the attitude and underlying expectations of customers

#### Objectives of the study

The study has been pursued to achieve the following objectives:

1. To study the awareness level of respondents about M-Payment service.
2. To analyze the respondents attitude towards this innovative payment method.

3. To study the reasons for inclination as well as disinclination to use m-payments.

4. To identify the preferred areas/sectors of high potential for making use of m-payments.

5. To study the motives and concerns of respondents towards M-payments.

#### Hypotheses

To achieve objectives of the study following hypotheses have been formulated and tested using chi-square test:

- 1 There is homogeneity among males and females with respect to attitude on motives of m-payments.

2. There is homogeneity among males and females with respect to the concerns of m-payments.

#### Research methodology

The scope of the present investigation is confined to the analysis of the customer's attitude towards M-Payments. The study is based on the primary data. The survey has been conducted using a pre-tested and a structured questionnaire on 100 respondents selected from Chandigarh and Gurgaon. The sample consisted of equal percentage of male and female respondents.

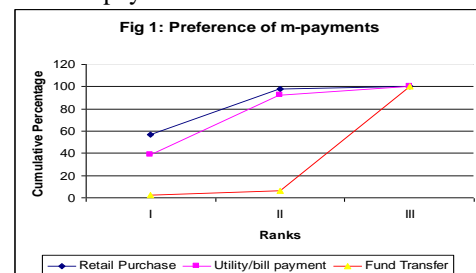
The respondents have been selected using non-probability method i.e. convenience sampling method. The highest percentage of respondents i.e. 29 percent belongs to the age group of 31-40. Almost fifty percent of the respondents are post-graduate, and one fourth is professional. Occupation wise distribution of the respondents depicts that majority of the selected respondents i.e. 40 percent belong the service class. The income distribution reveals that only 11 percent have income below Rs 2 lakhs, and the rest of the respondents belong to the income group of Rs 2 lakh and above. The collected data have been analyzed with the statistical software SPSS 17 evaluation version. The chi-square statistics is being applied to test the homogeneity in the attitude of males and females towards motives and concerns of m-payments.

#### Results and discussion:

1. It is observed that the awareness level of the respondents towards m-payment facility is extremely high. More than 85 percent of the selected respondents have knowledge about the introduction of m-payment facility.

2. The study found that almost half of the respondents have shown keen curiosity in linking m-payments with their saving bank accounts. The percentage of customers is 35 percent, 12 percent who intend to link m-payments with credit cards, debit cards respectively.

3. Retail purchases, payment for utilities/bills, and funds transfer have emerged as first, second and third preference among all the respondents for m-payments.



4. M-payment is being propagated as a mobile wallet. It is expected to bring paradigm shift in the payment methods. The study evaluated the respondents' attitude towards m-payments on gender basis only. It examined the respondents' views on no need to carry wallet/cash, credit cards, debit cards; easier access than cash, cards and cheques. Table 4 shows that a large section

of respondents disagree with 'no need to carry wallet/cash, credit cards' as a result of m-payment facility. These responses are supported by the chi-square statistics with high p-value as depicted in table 5. It is observed that the attitude of males and female respondents is homogeneous with respect to need to carry wallet/cash and credit cards. However, there is significant difference in the attitude of male and female respondents towards debit cards. It is substantiated by chi-square value i.e. 13.774 with p-value less than 0.05.

5. The study found that more than 70 percent of male as well as female respondents agree with that m-payment means easy access than cash, cards and cheques. The chi-square statistics for this statement is 2.678 with p-value of 0.444. This indicates that there is homogeneity among respondents with respect to m-payment means easy access than cash, cards and cheques.

6. The study further examined the respondents attitude on m-payments with respect to ubiquitous, minimum learning time, user friendly, convenience/transaction ease, ability to perform banking functions without PC and internet, instant confirmation, saves time, authentication, real time status of payment; and trust, privacy and security. It is found that there is homogeneity in the attitude of respondents in relation to these features of-payment. The chi-square values with high p-values resulted into acceptance of hypothesis in relations to all these aspects.

\*S-Significant \*\* NS-Non Significant

7. The analysis of table 6 about concerns of respondents regarding m-payment revealed that more than three fourth of respondents disagree with risk of theft/loss, difficult or complex, as well as problem of payment message standardization. The chi-square statistics with p-values higher than 0.05 resulted into acceptance of hypothesis. Hence, it can be concluded that there is homogeneity among the male as well female respondents attitude i.e. they do not agree with risk of loss/theft or problem of message standardization in m-payments.

8. The study found that most of respondents have same opinion on problems relating to limited number of merchants accepting m-payment, inconvenient to use m-payments for every transaction, need of wallet still remains, transaction cost concerns, hidden or service charges issue, and settlement platform is not clear. Respondents are also concerned about regulatory the values of chi-square statistics with higher p-values show that respondents' attitude towards these issues are homogeneous.

\* NS-Non Significant

#### Conclusion:

M-Payment is emerging as a revolutionary payment technique at the global level. In India also, the level of awareness and the attitude towards the technique is found to be favourable. Retail purchase and utility/bill payments have emerged as the top two preferred areas for m-payments. M-payment is being advocated as a mobile wallet. On the basis of study, this proposition is not found valid as most of the respondents are of the view that the need for wallet, credit cards, debit cards, and cheques still remains.

It is observed that respondents find m-payment as ubiquitous, time-saving and user friendly. In this era of technology, respondents need minimum learning time to adopt it, and they are not worried about problems of authentication; trust, privacy, security and risk of theft/loss. The major challenges for m-payments are limited number of merchants and service providers accepting m-payments, hidden charges, and no transparency about settlement platform and regulatory issues. As a whole, no significant differences have been observed in the attitude of males and females towards motives and concerns of m-payments. Hence, the success of m-payment in principal depends on the wider acceptability of m-payments by merchants, apparent picture about the settlement platform and regulations on m-payments.

The global advancement of m-payments requires a resonance regulatory framework to facilitate the masses to utilize this payment service to its full potential. M-payment technology is likely to strike the broader market in India in coming years. The advantages of the m-payments are likely to overpower its limitations. It is expected that these rewards will create a win-win situation for both the customers as well as the service providers.

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**Table 1: Mobile Payments Market Case Studies on Six Countries, 2007**

Country	Key Statistics	Top Market Drivers
Austria	<ul style="list-style-type: none"> <li>• 3,00,000 users</li> <li>• 3.1% of mobile users</li> <li>• 1500 vending machines capable of m-payments</li> </ul>	Telecom Operators
China	<ul style="list-style-type: none"> <li>• 17 million users</li> <li>• 3.4% of mobile users</li> </ul>	
Venezuela	<ul style="list-style-type: none"> <li>• Recently launched</li> </ul>	
Japan	<ul style="list-style-type: none"> <li>• 10 million users</li> <li>• 9.7% of mobile users</li> <li>• 3,00,000 transactions on one day</li> <li>• 41,500 stores</li> </ul>	
Finland	<ul style="list-style-type: none"> <li>• 2,00,000 users</li> <li>• 3.4% of mobile users</li> </ul>	Banks or Credit Card Companies
USA	<ul style="list-style-type: none"> <li>• 1 million users</li> <li>• 3.1% of mobile users</li> </ul>	

Source: Capgemini analysis, 2008.

**Table 1: Profile of Respondents**

Gender	Frequency	Percentage
Male	50	50
Female	50	50
Marital Status		
Married	75	75
Unmarried	25	25
Age (years)		
Below 30	26	26
31-40	29	29
41-50	24	24
Above 50	21	21
Education Level		
Graduate	28	28
Post Graduate	48	48
Professional	24	24
Occupation		
Service	40	40
Business	19	19
Professional/Self Employed	30	30
Retired	11	11
Income		
Less than 2 lakh	11	11
2-4 lakh	37	37
4-6 lakh	36	36
Above 6 lakh	16	16

**Table 2: Awareness about m- payment**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	86	86.0	86.0	86.0
No	14	14.0	14.0	100.0
Total	100	100.0	100.0	

**Table 3: Response to link m-payments with bank account, credit and debit cards**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid bank accounts	48	48.0	48.0	48.0
credit cards	35	35.0	35.0	83.0
debit card	17	17.0	17.0	100.0
Total	100	100.0	100.0	

**Table 4: Gender's attitude on motives of m-payments**

Motives of m-payments	Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
No need to carry cash	Male	15 (30)	34(68)	1(2)	0 (0)	0 (0)	50(100)
	Female	17 (34)	31(62)	2 (4)	0 (0)	0 (0)	50(100)
No need to carry credit card	Male	0 (0)	35 (70)	4 (8)	11 (22)	0 (0)	50(100)
	Female	2 (4)	32 (64)	3 (6)	13 (26)	0 (0)	50(100)
No need to carry debit card	Male	2 (4)	31 (62)	6 (12)	11 (22)	0 (0)	50(100)
	Female	5 (10)	13 (26)	10 (20)	21 (42)	0 (0)	50(100)
Easy access than cash, cards, cheques	Male	0 (0)	0 (0)	12(24)	35 (70)	3 (6)	50(100)
	Female	0 (0)	2(4)	11 (22)	32 (64)	5 (10)	50(100)
Ubiquitous	Male	0 (0)	0 (0)	3(6)	25 (50)	22 (44)	50(100)
	Female	0 (0)	0 (0)	11 (22)	32 (64)	5 (10)	50(100)
Minimum learning time	Male	0 (0)	1(2)	10(20)	34 (68)	5 (10)	50(100)
	Female	0 (0)	4(8)	9 (18)	28(56)	9 (18)	50(100)
Convenience/transaction ease	Male	0 (0)	0 (0)	6(12)	32 (64)	12 (24)	50(100)
	Female	0 (0)	0 (0)	8(16)	23(46)	19 (38)	50(100)
Ability to perform banking functions without PC and internet	Male	0 (0)	11(22)	8(16)	15(30)	16 (32)	50(100)
	Female	0 (0)	10(20)	13 (26)	15(30)	12 (24)	50(100)
Instant Confirmation	Male	0 (0)	0 (0)	0 (0)	37(74)	13 (26)	50(100)
	Female	0 (0)	0 (0)	0 (0)	30(60)	20(40)	50(100)
Saves time	Male	0 (0)	0 (0)	6(12)	33(66)	11 (22)	50(100)
	Female	0 (0)	0 (0)	8(16)	23(46)	19 (38)	50(100)
Authentication	Male	0 (0)	1 (2)	4(8)	35(70)	10 (20)	50(100)
	Female	0 (0)	1 (2)	4(8)	28(56)	17 (34)	50(100)
Real time status of payment	Male	0 (0)	0 (0)	6(12)	33(66)	11 (22)	50(100)
	Female	0 (0)	0 (0)	6(16)	23(46)	19 (38)	50(100)
Trust, privacy and security	Male	0 (0)	0 (0)	6(12)	38(76)	6 (12)	50(100)
	Female	0 (0)	0 (0)	8(16)	30(60)	12 (24)	50(100)

**Table 5**  
**Statistical values on homogeneity of attitudes with respect to motives of m-payment**

Cross-tab	Pearson Chi-square value	D.F.	p-value	Significant/Not Significant
Gender* No need to carry cash	.597	2	.742	NS
gender * no need to carry credit card	2.444	3	.486	NS
gender * no need to carry debit card	13.774	4	.008	NS
gender * easy access than cash, cards and cheques	2.678	3	.444	NS
gender * ubiquitous	0.248	2	.883	NS
gender * minimum learning time	3.576	3	.311	NS
gender * convenience/transaction ease	3.339	2	.188	NS
gender * ability to perform banking functions without PC and internet	1.810	3	.613	NS
gender * instant confirmation	4.731	2	.094	NS
gender * saves time	4.205	2	.122	NS
gender * authentication by MPIN	2.593	3	.459	NS
gender * real time status of payment	4.205	2	.122	NS
gender * trust, privacy and security	3.227	2	.199	NS

\*S-Significant \*\* NS-Non Significant

**Table 6: Gender's attitude on concerns of m-payments**

Concerns of m-payments	Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Risk of loss/theft	Male	14 (28)	28(56)	2(4)	6 (12)	0 (0)	50(100)
	Female	12 (24)	33(66)	0 (0)	5 (10)	0 (0)	50(100)
Limited no.of merchants accepting m-payments	Male	0 (0)	0 (0)	4 (8)	29 (58)	17 (34)	50(100)
	Female	0 (0)	0 (0)	2 (4)	34 (68)	14 (28)	50(100)
Complex	Male	6 (12)	31 (62)	11 (22)	2 (4)	0 (0)	50(100)
	Female	2 (4)	33 (66)	10 (20)	5 (10)	0 (0)	50(100)
Inconvenient using m-payments for every transaction	Male	0 (0)	1 (2)	11 (22)	31(62)	7 (14)	50(100)
	Female	0 (0)	3(6)	9(18)	34 (68)	4 (8)	50(100)
Need of wallet still remains	Male	0 (0)	0 (0)	3(6)	24(48)	23 (46)	50(100)
	Female	0 (0)	0 (0)	4 (8)	27 (54)	19 (38)	50(100)
Problem of payment message standardization	Male	2 (4)	41(82)	6(12)	1 (2)	0 (0)	50(100)
	Female	2 (4)	36(72)	11 (22)	1(2)	0 (0)	50(100)
Transaction cost concerns	Male	0 (0)	15 (30)	14(28)	20 (40)	1 (2)	50(100)
	Female	0 (0)	14 (28)	20(40)	14(28)	2 (4)	50(100)
Hidden charges issue	Male	0 (0)	1(2)	11(22)	31(62)	7 (14)	50(100)
	Female	0 (0)	3(6)	9 (18)	34(68)	4 (8)	50(100)
Services charges problem	Male	0 (0)	1 (2)	11 (22)	31(62)	7 (14)	50(100)
	Female	0 (0)	3 (6)	9 (18)	34(68)	4(8)	50(100)
Transaction and id security	Male	4 (8)	21 (42)	11(22)	12(24)	2 (4)	50(100)
	Female	4 (8)	10 (20)	22(44)	12(24)	2 (4)	50(100)
Settlement platform not clear	Male	0 (0)	1 (2)	11(22)	31(62)	7 (14)	50(100)
	Female	0 (0)	3(6)	9(18)	34(68)	4 (8)	50(100)
Regulatory issues not clear	Male	0 (0)	0 (0)	13(26)	18(36)	19 (38)	50(100)
	Female	0 (0)	0 (0)	10(20)	24(48)	16 (32)	50(100)

\*S-Significant \*\* NS-Non Significant

**Table 7  
Statistical values on homogeneity of attitudes with respect to concerns**

Gender and matter of concern	Pearson Chi-square value	D.F.	p-value	Significant/Not Significant
Gender* Risk of loss/theft	2.655	3	0.448	NS
gender * Limited no.of merchants accepting m-payments	1.354	2	0.508	NS
gender * Complex	3.396	3	0.335	NS
gender * Inconvenient using m-payments for every transaction	2.157	3	0.541	NS
gender * Need of wallet still remains	0.700	2	0.705	NS
gender * Problem of payment message standardization	1.795	3	0.616	NS
gender * Transaction cost concerns	2.485	3	0.478	NS
gender * Hidden/service charges issue	2.157	3	0.541	NS
gender * Transaction and id security	7.570	4	0.109	NS
gender * Settlement platform not clear	2.157	3	0.541	NS
gender * Regulatory issues not clear	1.506	2	0.451	NS

\* NS-Non Significant