AN EMPIRICAL STUDY ON CONSUMER ADOPTION OF MOBILE PAYMENTS IN BANGALORE CITY – A CASE STUDY

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ABSTRACT

Man started writing letters in the past and now he is using email, SMS and MMS alternatives to communicate where the message is conveyed to the end within a fraction of second instead of 3-4 days in the past. Innovation has been a reality in step after step but it didn’t happen overnight. Whenever a new innovation was released for public consumption, it was blindly hailed and consumed as they were tired of older alternatives. Unfortunately miscreants all around the world have updated their skills to throw tantrums at the system as it gets better for eg: bank frauds, fund transfer frauds, stock market hacking etc. As these high profile attacks have taken place and wide publicity has been given to these incidents, people have grown extremely conservative to safeguard their interests, resources etc. Any innovation is looked with skepticism and consumers so particular about liabilities and risk in adopting a new system. It is widely said that technology has widely shrunk distance in the world. Every technological invention and even updates of products and services were swiftly consumed by tech starved generation. Be it business community or the end consumer; if there is a technology that was to be immediately infused in the service process to gain advantage over the other players in the market, consumers want the best product as fast as possible to envy others. Modern man has earned the tag of quick exploiter of any technology that may give cost competency, customer value or even competitive edge. But situation in the market becomes really puzzled when some technologies that are proven will not be accepted by the consumer on many grounds. There are lots of intuitions and reasons to answer why mobile payment is not being accepted. Mere intuition or a guess doesn’t represent fact and marketing decisions that are not based on facts are fruitless. A research is need of the day to find out the factors and predict their capability to induce behavioral intention among consumers to use mobile payments.

Research Methodology adopted for the study is of descriptive methodology. Questionnaire method is used to extract data. The paper identifies factors that have shown consistent relationship with the mobile payment adoption and attempts to group it by the method of ANOVA.

Keywords: Mobile, Consumer, Adoption, Technology
INTRODUCTION:

All over the world, mobile phone users in the graph are growing at a healthy rate despite dismal figures of economic growth at key developed economies. There are many applications that fall in the area of mobile telephony like mobile advertising, entertainment services. Among all these applications, mobile payment is the application that is predicted to have the largest potential. This application gives a customer good value services by allowing the customer to transact irrespective of working hours, places beyond geographies almost nullifying the distance constraint (Courseras and Hassanein, 2003; Dahlberg et al., 2005; Huang and Boucouvalas, 2006; Wang et al., 2005). A scholar named Wareham (2005), started publications in the area of mobile payments that attracted industrial research toward m-payments. At the outset experts also agree that research on e-payments is necessary to gain some insight on mobile payment adoption. But there is difference between e-payment and mobile payment process and the hardware/software components that supports the applications. Systematic implementation of mobile payment systems also needs a service provider providing compatible mobile sets that enable easy transactions. Technology adoption issues that are faced by consumers should be probed in detail to understand the dimensions of mobile payment adoption. In consumer behavior, the decision to adopt can be called as behavioral intention to try and repeatedly use the service permanently. To get these sorts of results, trust is probably the most powerful factor. But in reality, every customer when faces a new technology, goes through a considerable amount of trust deficit. This variable has not been tested in many studies that have been conducted (Karnouskos and Fokus, 2004; Mallat, 2004). To understand theoretical bits of Mobile payment system, we can define M-payment as, “a system using mobile device to make transactions such as pay bills and perform banking transactions”. Other positive feature of mobile payment is that it can be set up by service providers instead of depending on banks to implement mobile payments technologies. Service providers can get huge savings of cost and time lag for customers waiting in queues for checking out in retail outlets. Customers may have any card but they still have to wait in queue and time stands as barrier. Mobile payment application overtakes the time barrier by allowing the customer to conduct real time transaction any time anywhere. Service providers with technology back up and legal consent can start up a mobile payment service (Viehland & Leong, 2007). Biggest question mark on the faces of business community is how many people are going to avail the easy payment service and what success probabilities are shown by research.

Earlier transactions were facilitated through networks especially by banks as well as financial institutions. Banks have mastered several facets of transactions by playing roles like as issuing banks, acquiring banks
and clearing houses. But mobile operators though are involved in these transactions were confined to boundaries of their own business operation. If introduced by mobile operators, they can gain huge market shares by lifting up the trend, prompting other sub segment players and finally banks to go for enabling mobile payments (Ho, Fong & Yan 2008). According to (Chen et al 2009), despite aggressive promoting efforts by many service providers the mobile banking service could not ring the bell of success. Most of the consumers will not be comfortable with the idea of mobile banking service. Especially in Indian context, people are extremely conservative and careful when there is an issue of money. Lots of skepticism blooms out when mobile payment options get advertised and promoted to the people, consumers often tend to relate other IT loop holes and frauds to the new technology that is introduced. Even a small service backlog can not be neglected by service providers and the service personnel appointed by them. If mobile phone owned by the consumer is lost, then it is great risk for the consumers (Herzberg, 2003; Mallat, Rossi, & Tuunainen, 2004; Misra & Wickamasinghe, 2004). There is a direct need for deeper understanding of consumer behavior in relation to mobile payment services. The information by specific empirical works may serve as a major breakthrough in the body of knowledge.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT:

Mobile payment application is the latest paying alternative and an excellent application that provides huge opportunity for the business communities to offer higher end value to the customer. For any of the goods purchased, consumers can pay by using his/her mobile phone instantly instead of depending on cash, cheque and credit cards. After failed forecasts in 2000 and 2004, again in the year 2009, it was foreseen that 3% of overall mobile phone user may start making mobile payments more frequently, adopt at a later stage by 2011-2012 and also may fall in line for further growth as banks have started promoting mobile banking in developing countries like India and China as part of financial inclusion to promote mobile banking and mobile payment (Gartner 2009). According to Chen (2008) mobile payment services can enjoy a consistent growth only when a service provider recruits a strong marketing force capable of selling the concept of mobile payment. A little help from users to inform about their need is the major factor for a successful brand. Needs and wants are diverse and marketer or service provider is interested to find out common needs or in the other way features in the mobile phone mostly preferred by the target population. Extraction of the same is being attempted by researchers all over the world. The most basic question is “What factors make the consumers adopt a new self service technology?” this question has to be answered by majority of the research studies (Heijden et al., 2003; Lee and Turban, 2001; Sarker and Wells 2003). Previously many studies have come out using variables from famous theories such as Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Theory of Reasoned Action (TRA) and Diffusion of Innovation theory. Majority of these variables have failed to explain especially consumer adoption of mobile payments.

PERCEIVED USE:

Perceived usefulness according to Davis (1989) can be defined as the “degree to which the user believes that using a system would enhance their job performance”. When we discuss on mobile payments, we can replace the word ‘job’ with the ‘ever day routine’ as usage of mobile in recent times has been so frequent especially with teenagers. Perceived use appears in TAM (Technology Acceptance Model). This variable generally points out advantage and additional use in latest system compared to the system that is being followed in the present times (Nysveen, et al., 2005). In TAM, Perceived use has been consistently endorsed as a contributor to the final behavioral intention to try the self service technologies like mobile payments. According to Poustchii (2003), when there is an introduction of new system in a service, consumers would first look the benefits, tally them with the previous one and then would consider going for the new technology.

TRUST:

Trust is a variable that has attracted attention of many scholars playing mysterious role in the adoption of mobile payments (Misra & Wickamasinghe 2004). It can be understood as “the belief that vendors will perform some activity in accordance with customer’s expectations” (Gefen & Straub 2004; Pavlou & Gefen 2004). Basically trust in mobile payment system can be formed by maintaining anonymity, security and most importantly reliability of the service model (Egger, 2001). According to Gefen et al, (2003), it is trust
variable that plays crucial role in facilitating adoption of e-commerce adoption. Gefen was the scholar used trust widely to explore behavioral intention or adoption of technologies. When it comes to mobile payments, Poustchi (2003) arrives at a conclusion after his survey revealed that over 96% of the respondents he surveyed wanted confidentiality of data they exchange with the service provider other wise trust was very difficult to develop among people. According to Dahlberg (2003) TAM’s capability to predict behavioral intention can be strengthened by adding trust element to the model.

**EXPRESSIONNESS:**

Expressiveness can be understood as “ability to express individuals’ emotions or identity”. This variable was previously used in determining behavioral intentions of people towards mobile parking (Pedersen, 2003) as well as mobile portals (Serenko & Bontis, 2004). Every individual in this world carries an immense internal desire that he/she should express to the outer world for what actually they stand for eg: status, ideology etc. This is the place where expressiveness as variable to determine the behavioral intention plays its role. Mobile phones have been used by people to show off their status in cosmopolitan cities (Leung and Wei 2000). This variable calls for personalizing the business service and improving customer experience so that there is a repeated consumption of mobile payment leading to adoption in the long term.

**PERCEIVED EASE OF USE (PEOU):**

Perceived Ease of Use in various studies has been measured as an additional variable that directly influences attitude development. Consumer thinks from a point of easiness to understand and use so that he can generate desired output. (Kim et al 2010). Perceived ease of use, according to Davis (1989) can be described as the “degree to which the user believes that using a system would be free of effort”. PEOU stands as one of the main contributor in predicting the behavioral intention of SSTs(Self Service technologies). According to Pusttchi’s (2003) survey results, 93% of responses were in favor of equipment handling should be easy and other sizeable number of response also indicated that the technology should also be easy to learn. When consumers start perceiving that a technology is easy to use, they may start liking it and may also develop an intention to try and learn it(Dahlberg et al, 2003).

After understanding the variables and their contribution towards different in predicting the technology adoptions, we can go for the diagram that represents variables and their association with directly favoring the adoption of mobile payment.

![Behavioral Intention towards Adoption of Mobile payment](Fig No: 1)

**Source:** Literature Review

After identifying the research gap in the literature review, we can state the hypothesis. To avoid the researcher bias of type 1 and type 2 errors we shall state alternate hypothesis in negation and put our claim in null hypothesis so that the outcome is unbiased.

**HA:** (Alternative Hypothesis): The factors (Usefulness, Trust, Expressiveness and Ease of use) Does not Promote Adoption of Mobile Payment System by Consumers

**H0:** (Null Hypothesis): The factors (Usefulness, Trust, Expressiveness and Ease of use) Promote Adoption of Mobile Payment System by Consumers.

As mobile payment is unheard in many occasions, sudden introduction of the same would have impact on consumer’s feeling of fear and anxiety regarding outcomes of mobile transactions (Siau & Shen 2003).
order to overcome the feeling of uncertainty, the service provider should probe more on trust building measures (Liu, Machewka, Lu & Yu, 2005; Nijite & Parsa, 2005). To enable growth in mobile commerce industry through mobile payment service, the industry teamed with professionals and techies are striving hard to build transparent application that boosts the confidence of customers to go ahead with usage of mobile payment system. Transparent service is essential to communicate about mobile payment system (Au & Kauffman 2007). Industry is working hard to provide the consumer fraternity best of the solutions to upgrade the lifestyle by giving uncompromising importance and care for aspects especially like security, convenience and last but not least low cost. Interestingly mobile payment has got all the qualities of innovative breakthrough product but even in a forward country and change accepting nation like United States the growth of mobile payment solution has not touched impressive figures. Many scholars in the year of 2005 and 2007 raised issues of security about mobile payment solution and also argued that security is the main factor that is blocking the huge success adoption of mobile banking. To list the certain scholars having contributed in the mobile payment area,

- Convenience (Dewan & Chen, 2005; Teo, Fraunholz & Unnithan 2005).
- Cost (Van der Kar & Van der Duinn, 2004; Zmijewska, 2005).
- Perceived ease of use and Usefulness (Dewan & Chen 2005; Teo et al, 2005; Zmijewska, 2005).

To summarize all the findings of above studies, mobile payments solution has got some of the important much needed contents with it. But to facilitate the wide adoption, the consumer should not be shown additional cost however it is impossible to achieve instead of additional or high cost. Little cost and highlighting the convenience would do well for the adoption of m-payments. There is a need to build the trust among people that latest invention is safe. It is said that always any consumer if he/she is exposed to a new kind of technology, they perceive the risk in the latest invention and restrain from trying it (Porteus 2006). Most of people have a very close association with their mobiles all over the world. Some people treat their mobile phones as close assistants to them. Highest used service all over the world surprisingly is SMS followed by making calls and other services. Although mobile phones are very closely associated with many people’s lives, it seems that people don’t intend to take risk when it comes to transacting in the other party’s physical absence that too by money. By some or the other way people don’t get satisfaction when they transfer funds by clicking the button compared to exchanging money in the real time with physical evidence. The issue is money matters for everyone and they are ready to take whatever precautions necessary to be taken to safeguard the money that affects their present prospects and future safety. There is need to bridge the gap and fill the grey area with required information that is hampering the bloom of a new market by creating revolution.

RESEARCH OBJECTIVES:

As there is no good progress in mobile payment penetration at developing country markets, attempts are being made to promote mobile payment aggressively where considerable part of people fall into innovators category (Viehland & Leong, 2007). This study considers that determining of factors that influence the adoption of mobile payments is need of the day. Further literature review leads us to many research questions that are listed as follows:

- Are consumers ready to embrace this new method of payment?
- What is the usage pattern of mobile phones?
- What are the factors that reduce or increase adoption of m-payments in the consumer market?
- Do these factors promote adoption of mobile payment solution?

From these research questions we can arrive at specific research objectives by conversion into specific statements. Research objectives are listed as follows

- To measure the consumer’s willingness to adopt mobile payment.
- To find the usage pattern of mobile phones.
- To identify of factors that has yielded consistent results in influencing the adoption of mobile payments.
- To analyze and find the above factors magnitude of relationship with the final adoption of mobile payments.
All the above sub objectives sum up to contribute for the main objective of the study that is to determine the mobile payment solution by the people.

RESEARCH METHODOLOGY:

Research Methodology adopted for the study is of quantitative type and the approach made is descriptive approach. Survey was conducted with the help of questionnaire method for data collection in Bangalore city. Nominal to interval scale of data was preferred to extract and were subjected to analysis. Analysis of Variance (ANOVA) is used in the study. It is a collection of statistical models, in which the observed variance in a particular variable is partitioned into components attributable to different sources of variation. ANOVA is useful in measuring two, three or more means.

One-way analysis of Variance (ANOVA) is used to test the hypothesis formulated. It is a technique to compare means of two or more samples using $F$ distribution. Hypothesis Testing has been conducted by the help of one way analysis of variance (ANOVA) is used.

The $F$-test is used in One-way ANOVA. The value of $F$ is calculated as:

$$F = \frac{\text{Variance between Items}}{\text{Variance within Items}}$$

As widely preferred in management research studies, 95% of confidence level and 5% level of significance have been used for the study.

Primary data has been collected to achieve objectives stated by interviewing respondents with a structured questionnaire. Secondary data has been procured to find gaps and arrive at research question as well as objectives by eminent online journals from Proquest, EBSCO and J Gate databases. As end consumer had to be interviewed, non probability sampling method was adopted under which Judgmental sampling was followed by limiting the chances of population to be included in the sample. The sample size was 100 after eliminating a number of 20 ineligible responses to be considered for further analysis.

RELIABILITY SCORE OF INSTRUMENT PRETEST:

To check the internal consistency, four constructs were subjected to reliability test. The below table highlights the factor structure, dimensionality as well as internal consistency through cronbach alpha. A sample of 30 respondents was selected for the pretest. In which the response to scale items turned up in the ratio of 5:1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Reliability (Alpha) in Current study</th>
<th>Average inter-item Correlation in Current study</th>
<th>Literature Reliability Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness</td>
<td>0.811</td>
<td>0.562</td>
<td>0.81-0.88</td>
</tr>
<tr>
<td>Trust</td>
<td>0.637</td>
<td>0.52</td>
<td>0.75-0.82</td>
</tr>
<tr>
<td>Expressiveness</td>
<td>0.631</td>
<td>0.275</td>
<td>0.70-0.81</td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td>0.785</td>
<td>0.323</td>
<td>0.78-0.87</td>
</tr>
</tbody>
</table>

Source: Primary Data

The values were much supportive with PU and PEOU touching 0.81 and near to 0.8. Any value nearing 0.8 and above 0.8 is considered to be very well supportive. As the values were above 0.50 (basic rule) and literature reliability range was consistent, decision to proceed forward with the data collection was made. The hypothesis testing of variables has been presented in an understandable way by displaying every step at the same time precautions were taken to justify the answer. For data analysis and further hypothesis testing purposes SPSS (Statistical Package for Social Sciences) has been used to achieve the objectives and re-justification of the values arrived.

DATA ANALYSIS & INTERPRETATION:

Demographic profile of the respondents can be seen in the following tables as demography represents the authenticity of the study. Age group and education level of the respondents are shown in table.
Table No. 2 Frequency Tabulation of Age Profile.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Particulars</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>18 – 30</td>
<td>74</td>
</tr>
<tr>
<td>2.</td>
<td>30 – 40</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>40 – 50</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Above 50</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

INTERPRETATION:
The above table shows the age profile of the sample respondents. The highest numbers of respondents in the sample represent age group of 18 – 30 with 74% and the lowest from the age group above 50 with 1%.

INFERENCES:
Most of the respondents were between the age group of 18 – 30, and since mobile payment is a new trend, the age group of 18 – 30 was targeted to extract information.

Table No. 3: Frequency Tabulation of Education qualification

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Particulars</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Diploma</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>Bachelors Degree</td>
<td>31</td>
</tr>
<tr>
<td>3.</td>
<td>Master Degree</td>
<td>50</td>
</tr>
<tr>
<td>4.</td>
<td>PhD</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Other Education</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

INTERPRETATION:
The table above shows the education qualification profile of the sample respondents. Out of 100 respondents, 6% were diploma holders, 31% Bachelor’s degree, 50% Master degree, 5% PhDs and 8% of the sample were educated in other streams.

INFERENCES:
Moderate to better educated were chosen in order to get exact information about their awareness and further intention about mobile payment usage as the content was complex and it was observed that latest generation people were more tech savvy to provide consistent responses.

After age profile and education level, we can concentrate on analysis of consumer awareness, intention and responses to the factors that affect adoption of mobile payment adoption by users.

Table No. 4 Frequency Distribution of Users Mobile Commerce Intention.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Particulars</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>76</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

INTERPRETATION:
The table above shows the percentage users of mobile payments. 76% out of 100 respondents use Mobile payments and 24% out of 100 respondents do not use mobile payments.

INFERENCES:
With this interpretation we can understand that awareness about Mobile payments have gained momentum since the mobile manufacturing companies have been continuously upgrading the features of the mobile phones, with new applications and software, young generations have caught the smell of luxury and service
availability at the click of a button and thus, 76 % of respondents use mobile payments out of 100 sample respondents have responded favorably towards intention to use m-payments solution. As we know about frequency distribution of mobile phone usage, it remains question about what kind of utilities are being consumed. The below table shows the utilities that are being consumed.

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Particulars</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobile banking</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Career building</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Online payment</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>Mobile wallet</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>Others</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**INTERPRETATION:**
The table above shows type of mobile usage patterns. Over 52% of respondents (excluding non users) are using mobile banking making it highest used service. There is also a concern about 24% in the sample of respondents have not used mobile banking.

**INFERENCE:**
With online shopping sites gaining good popularity over low price and value added service, online payments have come just below the mobile banking in Bangalore. The 24% of non users have to be evangelized from the non user to user category by promotions and it seems that there is need of a market campaign that capable of reaching the unreached segment.

**ROLE OF VARIABLES IN PROMOTION OF MOBILE PAYMENT ADOPTION:**
Let us recall the hypothesis statement that was derived from literature review, it can be stated as:
H1: (Alternative hypothesis) the Factors (usefulness, trust, expressiveness and ease of use) do not promote Adoption of Mobile Payment System by Consumers.
H0: (Null hypothesis) the Factors (usefulness, trust, expressiveness and ease of use) Promotes Adoption of Mobile Payment System by Consumers.

**Table No 6 & 7: Calculation of Variances**

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Usefulness</th>
<th>Trust</th>
<th>Expressiveness</th>
<th>Ease of use</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td>2.</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>3.</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>4.</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>14</td>
<td>8</td>
<td>38</td>
<td>76</td>
</tr>
</tbody>
</table>

**SOLUTION:**

<table>
<thead>
<tr>
<th>X1</th>
<th>(X1-X1)²</th>
<th>X2</th>
<th>(X2-X2)²</th>
<th>X3</th>
<th>(X3-X3)²</th>
<th>X4</th>
<th>(X4-X4)²</th>
<th>X5</th>
<th>(X5-X5)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3.24</td>
<td>5</td>
<td>4.84</td>
<td>3</td>
<td>1.96</td>
<td>20</td>
<td>153.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.64</td>
<td>5</td>
<td>4.84</td>
<td>2</td>
<td>0.16</td>
<td>11</td>
<td>11.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.44</td>
<td>1</td>
<td>3.24</td>
<td>2</td>
<td>0.16</td>
<td>1</td>
<td>43.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.64</td>
<td>1</td>
<td>3.24</td>
<td>1</td>
<td>0.36</td>
<td>4</td>
<td>12.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4.8</td>
<td>2</td>
<td>0.64</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>31.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T=16</td>
<td>T=10.76</td>
<td>T=14</td>
<td>T=16.8</td>
<td>T=8</td>
<td>T=2.64</td>
<td>T=38</td>
<td>T=253.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VARIANCE WITHIN SAMPLES:

\[ S_1 = \frac{1}{5} (10.76) = 2.15 \]
\[ S_2 = \frac{1}{5} (16.8) = 3.36 \]
\[ S_3 = \frac{1}{5} (2.64) = 0.528 \]
\[ S_4 = \frac{1}{5} (253.2) = 50.64 \]

ESTIMATION OF THE VARIANCE BY THE POOL VARIANCE METHOD:

CALCULATING THE VARIANCE WITHIN SAMPLES:

\[
\sigma^2 = \frac{\sum (x_{ij} - \bar{x}_i)^2}{N-4}
\]

\[
= \frac{10.76 + 16.8 + 2.64 + 253.2}{5 + 5 + 5 + 5 - 4}
\]

\[ = 283.4/16 = 17.7 \]

Variance within samples = 17.7

CALCULATING THE VARIANCE BETWEEN SAMPLES:

\[
\sigma^2 = \frac{1}{(4 - 1)} \sum (X_i - \bar{X})^2
\]

\[ = \frac{5 \times (3.2 - 3.8)^2 + (2.8 - 3.8)^2 + (1.6 - 3.8)^2 + (7.6 - 3.8)^2}{4 - 1} \]

Variance between sample = 34.27

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Squares</th>
<th>Variance ratio F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Samples</td>
<td>102.8</td>
<td>(k-1)</td>
<td>102.8/3 = 34.2</td>
<td>34.2/17.7 = 1.93</td>
</tr>
<tr>
<td>Withinsamples</td>
<td>283.4</td>
<td>(n-k)</td>
<td>283.4/16 = 17.7</td>
<td></td>
</tr>
</tbody>
</table>

As the derived critical value of F for 3 & 16 degrees of freedom at 5% level of significance is 3.24 (from the table). The F value derived is 1.93. Therefore we can conclude that calculated value is less than the critical value (1.93 < 3.24). Therefore, H0 can be accepted by rejecting the H1 where we stated that identified factors does not promote mobile payment adoption.

CONCLUSION:

Mobile payment with the latest advances happening in the IT domain should not be hindered from becoming the highest used service from the consumer. Cosmopolitan cities are teaming up with teen population ready to accept and learn the new way of life unlike conservative adults of the past generation. Even for corporates who are busy to even step out of their house to conduct a real time transaction, mobile payment application comes as a silver lining with convenience and all the other aspects like security and swift service.

The study through its critical analysis of data presents the findings that the identified elements like Perceived Use, Trust, Expressiveness and Perceived Ease of Use play a crucial role in facilitating adoption of mobile payment solution. To summarize further perceived usefulness was rated by 16 respondents out of 76 respondents (Excluding non users), as an important factor that enhances mobile payments that included high...
number of applications available, transaction time shorter than other payments, and new value added services. Mobile payment is considered useful because of the time it saves and for single point of purchase and payment. The factor “Ease of use” has received the highest number of respondents rating as the factor that enhances mobile payments with 38 respondents out of 76 respondents favouring it. It included, Easy to start transaction, easy to receive the transaction details, and easy to register for the system. Mobile payments were also considered Easy to use because people carry mobile phones with them most of the time and the phone is therefore conveniently available in most situations.

Now as teenagers are aggressive in adopting mobile payment application, we recommend that people belonging to other age group can also be slowly pursued carefully planned marketing campaign that can evangelize the non user into users of the mobile payments.

Future studies can be conducted to throw more light on classifying transactions under two parties and three parties that may include user, bank and another third party seller. IT dimension to probe the security and quality of service is much in need to understand the nature of transactions. More studies to validate the use of these factors to be used into market campaigns can also be focused as effectiveness of market campaign counts in trigger new IT service revolution in times to come.

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