

A Study on Enhancements in Online Payment System

Dr.K.Premalatha¹ and Ms.S.Ashwini²

¹Assistant Professor, Department of Commerce CA, Dr. SNS Rajalakshmi College of Arts and Science (Autonomous), Coimbatore, India.

²II.M.Com (CA), Dr. SNS Rajalakshmi College of Arts and Science (Autonomous), Coimbatore, India.

Article Received: 29 May 2018

Article Accepted: 22 September 2018

Article Published: 05 October 2018

ABSTRACT

Online payment portals are a powerful tool that makes our life simple and gives the luxury to make all required payment transactions around any part of the World. The advancement of internet and logistics systems, now it is possible for anybody to shop any product around the world and get it shipped to his/her. The main objectives are to study the problems faced through the online payment system. To study the factors influencing the online payment system.

Keywords: Online payment, Secure payment, Transaction, Debit\Credit card payment.

INTRODUCTION

This research aims to suggest some enhancements to the existing Online Payment Processing System which will add value and make the entire system user friendly. The prehistoric man had produced things like food, clothes and habitat themselves. The introduction of currency trading was enabled to happen across the globe, though each transaction involved many people, process and was time consuming. Within few seconds, products or commodities are purchased from any part of the globe and also shipped anywhere. Online Payment Processing System is a boon to today's world, thanks to the advancement of Information technology

REVIEW OF LITERATURE

1. O'Mahony et al.,(1997), [37] Laudon and Traver (2002), [22] Guttman (2003) concluded after their research that the lack of the fit-for purpose payment mechanisms and infrastructure were the main restricting factors among many others that held back the growth and evolution of e-commerce systems.
2. Malek [41] and Ferguson [28] have addressed the problems of perception of technological innovations in e-payment systems. Although information technology has had a positive effect on e-payment system growth, it has left considerable security and usability problems to be solved in order to render it more effective and reliable.
3. Electronic Payments as argued by Cobb (2005), had a significant number of economic benefits apart from their convenience and safety [12]. These benefits when maximized could go a long way in contributing immensely to economic development of a nation.
4. According to Sandy (2006) it had been observed and verified in many studies that small and medium enterprises had been actively looking for suitable solution and methods of adopting and integrating electronic commerce into their business process [55].
5. Humphrey et al., studied if usability and security features in the present payment systems were properly addressed and how effectively they contributed to superseding the conventional paper money [13].

RESEARCH METHODOLOGY

The study is intended to analyze the “enhancement in online payment system. The methodology includes area of the study, source of data, sampling design and tools & technologies.

1. Area of the study

Area of the study refers to Coimbatore City. It has large number of textile mills, textile machinery manufacturers, hosiery units, engineering industries and Information Technology parks. Coimbatore City is one of the top ten fastest growing cities in India and the second largest city in Tamilnadu.

2. Source of study

The study uses only primary data. For the purpose of collection of data, questionnaire has been prepared and data was collected from the consumers who have purchased products through online. Adequate care has been exercised to collect unbiased data from the respondents.

3. Sampling design

For the purpose of this study, the data were collected from 600 consumers using convenience sampling technique.

TOOLS & TECHNOLOGIES

In the study, a structure of questionnaire consisting of personal and opinion factors was prepared. The respondents were asked to fill-up the questionnaire and their opinions were consolidated [1-22].

The following statistical analysis was performed to answer the objective of the study:

- Percentage Analysis
- Analysis of Variance (ANOVA)
- Chi-square Analysis

All the tools were applied using SPSS (Statistical Package for Social Science)

Percentage Analysis

The descriptive statistics or percentage analysis is mainly carried out to determine the percentage of the respondents falling under each category. This analysis also helps to standardize the respondent’s opinion on various aspects. This analysis was carried out for all the questions given in the Questionnaire.

Chi-Square Analysis

The Chi-Square analysis is mainly used to test the independence of two attributes. It is also used to test one factor as significant influence over the other. In this study the Chi-Square test is used between the personal factors and to study the opinion factors.

ANOVA

As with the *t*-test, ANOVA also tests for significant differences between groups. But while the *t*-test is limited to the comparison of only *two* groups, one-way ANOVA can be used to test differences in three or more groups.

Several hypotheses worth investigating in our project involve the comparison of more than two groups. ANOVA is based upon a comparison of variance attributable to the independent variable (variability between groups or conditions) relative to the variance within groups resulting from random chance.

OBJECTIVE S OF THE STUDY

- To study the factors influencing the online payment system.

HYPOTHESES

Ho: The personal factors of the respondents have no significant relationship on the frequency of purchase of the products through online mode.

Ho: The pre-purchase decision scores, post purchase decision scores do not vary significantly based on the groups of personal factors of the respondents.

ANALYSIS AND INTERPRETATIONS

In order to study the “Enhancements to the existing Online Payment System with reference to Coimbatore city”, a structured questionnaire was prepared which consists of questions covering personal, attitude, opinion and satisfaction factors. Total of 600 consumers were selected from Coimbatore city for the purpose of the study.

The following analysis was performed to answer the objectives of the study.

- 1 Descriptive Analysis or Percentage Analysis
2. Analysis of Variance (ANOVA)
3. Chi-square Analysis

Percentage Analysis

In this section, the percentage analysis is presented for all the personal factors taken up in the study.

Age

Age as an important demographic variable not only determines an Individuals physical and mental maturity but also depicts his or her life experiences. It determines whether one is economically active or dependent upon others. It decides the earning capacity of the individuals.

Table – Age wise distribution of the respondents

S. No	Age Group	No. of respondents	Percentage
A	Up to 25 Years	22	3.5
B	25 to 35 Years	421	70

C	35 to 45 Years	118	20
D	45 to 55 Years	39	6.5
TOTAL		600	100

From the above table, it can be concluded that the age group of 25 to 35 years of the respondents mostly prefer using online methods to purchase their products. These respondents may belong to government employee, private employees, college students or business people. The other age group of the respondents may use online shopping less than the age group of 25 to 35 years. This may be due to less purchasing power or incapacity to take purchase decisions.

Educational Qualification

Whether literacy is synonymous with education in the developing countries and with reference to the weaker sections is a question confronting the social scientists. Viewed as synonymous, education not only widens the knowledge but also helps a person to make use of rational and scientific approach to solve problems. Education has a positive impact on social life and the quality of life and vice versa with illiteracy. The educated borrowers have a tendency to utilize their loans on productive and specified purpose

Table - Educational qualification of the respondents

S.No	Educational Level	No. of respondents	Percentage
A	Professional Degree	127	21
B	Post Graduation	290	48
C	Under Graduation	133	22
D	Diploma	13	2.5
E	Schooling	24	4.0
F	Others	13	2.5
TOTAL		600	100

It is concluded that majority of the respondents preferring online purchase are Post Graduates. Rest of the respondents doing online purchases are very less compared to post graduates because of their experiences, decision making, analyzing the products features and some other reasons.

Occupational Level

Occupation determines the social standing of a family. This is due to the fact the different occupations decide the status as also varying privileges and economic benefits.

Table – Occupational status of the respondents

S.No	Occupational Status	No. of respondents	Percentage
A	Govt. Employee	31	5
B	Private Employee	301	52
C	Self Employee	105	17.5
D	Business	106	17.5
E	Home Maker	17	3
F	Others	31	5
TOTAL		600	100

Based upon the above table, the majority of private employees are using online shopping for their purchases over the other occupational respondents because of their financial fluctuations, educational background and their working conditions

Family Annual Income

Income decides the background of a person. It is the yardstick to perceive the standard of living. Poverty line and standard of living of a person are measured by using the income as the prime indicator. It is difficult to get the accurate information about the family income of the respondents

Table: Family annual income of the respondents

S.No	Annual Income	No. of respondents	Percentage
A	Less than 1 Lakhs	12	2
B	Between 1 Lakhs to 2 Lakhs	30	5
C	Between 2 Lakhs to 3 Lakhs	90	15
D	Between 3 Lakhs to 4 Lakhs	270	45
E	More than 4 Lakhs	198	33
TOTAL		600	100

It is concluded that, the majority of the respondents are having an annual income between Rs.3 lakhs to 4 lakhs. Income is the main criteria for purchase of any products for their needs. Even though the family income is moderate, the respondents also payment for their compulsory needs. It can be concluded that the purchasers move to online payment mode with improvement in income level.

Time Spent

Table - Time spent on Internet per day

S.NO	Time Spend	No. of respondents	Percentage
A	Less than 1 Hour	204	34
B	1-2 Hours	286	48
C	2-3 Hours	66	11
D	3-4 Hours	32	5
E	More than 4 Hours	12	2
TOTAL		600	100

It is understood from the above table that, the majority of the respondents are spending less than two hours per day to access Internet.

- **OBJECTIVE 1: TO STUDY THE FACTORS INFLUENCING THE ONLINE PAYMENT SYSTEM.**

Percentage Analysis:

In this section the results of percentage analysis is presented for the various factor relating to the objectives. As it is expressed in the percentage it facilitates comparison.

Payment Method

The given table describes the different mode of payment for purchase of products and services, by personal and internal factors only.

Table - Payment method of the respondents

S.NO	Payment Method	No. of respondents	Percentage
A	Credit Card/ Debit Card	416	69
B	Online Bank Transfer	36	6
C	Cash on Delivery	137	23
D	Online Money Transfer	11	2
Total		600	100

Majority of the respondents are using credit card or debit card for their online purchases through Internet. The important considerations like security of data are to be given importance.

Pre-payment decision making factors

Hypothesis:

There is no significant difference among the age groups in their pre-payment decision score.

Table - ANOVA for Pre-payment decision score with age

	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	1225.450	3	408.483	13.795	**
Within Groups	17647.549	596	29.610		
Total		18872.998	599		

One-way ANOVA was applied to find whether there is a significant difference among the age groups in their pre-payment decision score. It is clear from the above table that the hypothesis is rejected (Significant). So, it can be concluded that age has significant effect over the pre-payment decision making factors.

Hypothesis:

There is no significant difference among the Annual Income in their pre-purchase decision score.

Table - ANOVA for Pre-payment decision score with annual income

	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	554.636	4	138.659	4.504	**
Within Groups	18318.362	595	30.787		
Total		18872.998	599		

One-way ANOVA was applied to find whether there is a significant difference among the annual income of the respondents in their average pre-purchase decision score. It is clear from the above table that the hypothesis is rejected (significant). Hence it can be concluded that the annual income has significant effect over the pre-purchase decision making factors

Hypothesis:

There is no significant difference among the time spent in their pre-payment decision score

Table - ANOVA for Pre-purchase decision score with time spent

	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	104.033	4	26.008	.824	NS

Within Groups	18768.965	595	31.544		
Total	18872.998	599			

A one-way ANOVA was applied to find whether there is a significant difference among the time spent in their average pre-payment decision score. It is clear from the above table that the hypothesis is accepted (Not significant). Hence it can be concluded that the time spent has no significant difference over the pre- payment decision making factors.

Post -payment decision making factors

Hypothesis:

There is no significant difference among the age groups in their post- payment decision score

Table - ANOVA for Post payment decisions score with age

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	248.366	3	82.789	6.596	**
Within Groups	7480.828	596	12.552		
Total	7729.193	599			

One-way ANOVA was applied to find whether there is a significant difference among the age groups in their post-payment decision score. It is clear from the above table that the hypothesis is rejected (Significant). Hence it can be concluded from the above statement that the age has significant effect over the post-payment decision making factors.

Hypothesis:

There is no significant difference among the educational qualification in their post-payment decision score

Table - ANOVA for Post payment decisions score with educational Qualification

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	803.942	5	160.788	13.791	**
Within Groups	6925.252	594	11.659		
Total	7729.193	599			

One-way ANOVA was applied to find whether there is a significant difference among the educational qualification in their post-payment decision making. It is clear from the above table that the hypothesis is rejected (Significant). Hence it can be concluded from the above statement that the educational qualification has significant effect over the post-payment decision making factors.

Hypothesis:

There is no significant difference among the occupation level in their post-payment decision score.

Table - ANOVA for Post payment decisions score with occupation

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	385.683	5	77.137	6.239	**
Within Groups	7343.510	594	12.363		
Total	7729.193	599			

One way ANOVA was applied to find whether there is a significant difference among the various occupations in their post-payment decision score. It is clear from the above table that the hypothesis is rejected (Significant). Hence it can be concluded from the above statement that the occupation has significant effect over the post-payment decision making factors.

Hypothesis:

There is no significant difference among the time spent in their post payment decision score

Table - ANOVA for Post payment decisions score with time spent

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	77.620	4	19.405	1.509	NS
Within Groups	7651.573	595	12.860		
Total	7729.193	599			

One way ANOVA was applied to find whether there is a significant difference among the time spent in their post-payment decision score. It is clear from the above table that the hypothesis is accepted (Not significant). Hence it can be concluded from the above statement that the time spent has no significant effect over the post-payment decision making factors.

Personal factors and frequency of payment of products through online

Hypothesis:

The personal factors of the respondents have no significant relationship on the frequency of payment of products through online mode.

Table - Chi-Square analysis on the relationship between personal factors and frequency of payment of products

S.No	Study Factors	Chi-Square Value	DF	Table Value	Significant / Not Significant
1	Age	50.197	6	16.812	S**
2	Educational level	23.71	10	23.209	S**
3	Occupation status	28.704	10	23.209	S**
4	Annual income	23.461	8	20.09	S**
5	Time spent on Internet	37.199	8	20.09	S**

It is clear from the above table that, the hypothesis is rejected (Significant) in eight cases and in other case hypothesis is accepted (Not Significant). It can be concluded that the gender, age, family members, educational level, occupation, annual income, internet access and time spent have significant influence on the frequency of payment of products through online mode and with other factors, the association is not significant.

FINDINGS

- Majority of the respondents (55%) are influenced to payment and services through online as per their own decision.
- It is observed that the majority of the respondents (69%) are using credit card or debit card for their payments to shop online

- The study also reveals that the educational level, occupation, annual Income and time spent of the respondents have been influenced over the frequency of the payment products through online payment.
- ANOVA test shows that the age, educational level, occupation, annual income and time spent have significant difference on their pre-payment decision making factors towards shopping online.

SUGGESTIONS

It is concluded that most of the respondents have a good opinion about online payment, though there are so many problems to be improved by the vendors and service providers.

These suggestions are as follows:

- ✓ Web based technologies upgrades creative conceptualization that would improve the response from technology savvy consumers. So, the firms have to invest in such new technologies.
- ✓ Internet environment has to be improved in the areas of art, dynamic and interactive techniques. This improvement will give more visual appeal.
- ✓ One of the major drawbacks that the respondents have felt is no proper refund policy to the product. After getting opinion from the respondent if the above said problem occurs, then they should be guided in a proper way to refund. This will create a good website reputation and payment power of the respondents.
- ✓ The vendors and service providers should avoid hidden charges. This will help to avoid increase in price of product.

CONCLUSION

Online payment is a vast growing technology. If it is properly utilized with assured safety and security for the transactions, it will thrive into a highly competitive and dynamic environment. The scholar has identified features that can add value to the existing payment options such as Split Tender Payment, Multiple Payment, Flexi-Recurring payment and further enhanced Flexi-Recurring Payment. These enhancements will help customers by giving more choices and convenience that make online payment a joyful option. In future, online payment is bound to grow in a big way, given the growing youth population.

REFERENCES

1. Appiah and F. Agyemang, Electronic Retail Payment Systems: User Acceptability and Payment Problems in Ghana, Master Thesis, Blekinge Institute of Technology, 2006.
2. Abrazhevich, D. (2001). A Survey of user attitudes towards Electronic Payment Systems. The 15th Annual Conference of the Human Computer Interaction Group of the British, Computer Society. Toulouse, France:Cepadues - Editions. IHM-HCI-2001. vol. 2. pp. 69-71
3. Anyanwu, Akudo Chidinma, 2012, Design and implementation of a flexible multi-currency Electronic payment system, Ahmadu Bello University, Zaria, p-35
4. Anil Lamba, "Uses Of Cluster Computing Techniques To Perform Big Data Analytics For Smart Grid Automation System", International Journal for Technological Research in Engineering, Volume 1 Issue 7, pp.5804-5808, 2014.

5. Anil Lamba, "Uses Of Different Cyber Security Service To Prevent Attack On Smart Home Infrastructure", International Journal for Technological Research in Engineering, Volume 1, Issue 11, pp.5809-5813, 2014.
6. Anil Lamba, "A Role Of Data Mining Analysis To Identify Suspicious Activity Alert System", International Journal for Technological Research in Engineering, Volume 2 Issue 3, pp.5814-5825, 2014.
7. Anil Lamba, "To Classify Cyber-Security Threats In Automotive Doming Using Different Assessment Methodologies", International Journal for Technological Research in Engineering, Volume 3, Issue 3, pp.5831-5836, 2015.
8. Anil Lamba, "A Study Paper On Security Related Issue Before Adopting Cloud Computing Service Model", International Journal for Technological Research in Engineering, Volume 3, Issue 4, pp.5837-5840, 2015.
9. Anil Lamba, "Uses Of Artificial Intelligent Techniques To Build Accurate Models For Intrusion Detection System", International Journal for Technological Research in Engineering, Volume 2, Issue 12, pp.5826-5830, 2015.
10. Anil Lamba, "Mitigating Zero-Day Attacks In IOT Using A Strategic Framework", International Journal for Technological Research in Engineering, Volume 4, Issue 1, pp.5711-5714, 2016.
11. Asokan, N, Janson, P., Steiner, M. and Weidner, M. (2000), Electronic Payment Systems IBM Research Division, Zurich Research Laboratory p1-16
12. Bruno-britz, Bank Systems and Technology, International Magazine, 2006
13. Anil Lamba, "Identifying & Mitigating Cyber Security Threats In Vehicular Technologies", International Journal for Technological Research in Engineering, Volume 3, Issue 7, pp.5703-5706, 2016.
14. Anil Lamba, "S4: A Novel & Secure Method For Enforcing Privacy In Cloud Data Warehouses", International Journal for Technological Research in Engineering, Volume 3, Issue 8, pp.5707-5710, 2016.
15. Anil Lamba, "Cyber Attack Prevention Using VAPT Tools (Vulnerability Assessment & Penetration Testing)", Cikitusi Journal for Multidisciplinary Research, Volume 1, Issue 2, July - December, pp.64-71, 2014.
16. Anil Lamba, "A Through Analysis on Protecting Cyber Threats and Attacks on CPS Embedded Subsystems", International Journal of Current Engineering and Scientific Research (IJCESR), Volume-1, Issue-3, pp.48-55, 2014.
17. Anil Lamba, "Analysing Sanitization Technique of Reverse Proxy Framework for Enhancing Database-Security", International Journal of Information and Computing Science, Volume 1, Issue 1, pp.30-44, 2014.
18. Anil Lamba, "Enhancing Awareness of Cyber-Security and Cloud Computing using Principles of Game Theory", International Journal of Advanced in Management, Technology and Engineering Sciences, Volume III, Issue I, pp.71-82, 2013.
19. Anil Lamba, "Resolve Security Policies Conflicts Through Semantics Matching Alignment", International Journal of Scientific Research and Review, Volume 2, Issue 2, pp.43-58, 2013.
20. Anil Lamba, "A Detailed Analysis of Data Security in a cloud Environment", SURAJ PUNJ Journal for Multidisciplinary Research, Volume 3, Issue 2, pp.43-51, 2013.
21. Caroline and Graham (2005), Report Ref. No DSTI/ICCP/IE (2004)18/REV1, OECD Secretaria.
22. K.Veerakumar (2016) article titled "A Research on Quality Factors Influencing Online Shopping" International Journal of Engineering Research and Modern Education, Vol-I, Issue-II, July – 2016. P.No.1-5.