Driving Factors for the Use of Electronic Payment Systems: A Study on Working Professionals of Udaipur

[1] Neeru Rathore , [2] Harshita Maloo Dad
[1]Assistant Professor, [2] Single Window Operator-B
[1] *JanardanRai Nagar* Rajasthan Vidyapeeth (Deemed) *University*, *Udaipur (raj.)*
[2] *Union bank of India ,Udaipur ,India*

Abstract : With the advent of information technology, integration of the conventional payment systems at global platform several innovations and technical tools opened the door of technically efficient and fast processing channels and products to make the payments electronically rich, reliable, and easeful for its users. Globalized revolution in banking, finance, technology, payment frameworks and tools had stimulated the users to use the new and advanced delivery and payment processing channels in several activities. After ample of innovations in payment processing frameworks and technology integration in conventional payment systems,rate of adoption of electronic payment system had increased among the common people. This acceptance and use of electronic payment system is driven by several factors such as ease of use, security and reliability over payment system, speed and efficiency, trust, convenience offered by the system, availability to use the tools of electronic payment system, users' knowledge, skills and experience, privacy factors and many more. In order to assess the driving factors for the working professionals of Udaipur district a sample population of 120 respondents has been chosen for the study purpose. The research work concluded that demographic characteristics, technical characteristics, user centric characteristics, brand benefits characteristics, and usability characteristics factors significantly drive the working professionals of Udaipur district for the use of electronic payment system.

IndexTerms - Electronic Payment System, Customers, Framework

I. INTRODUCTION

Electronically enabled payment frameworks/ Electronic Payment Systems refer to the integration of a range of technically innovative applications and practices with the several payment procedures through the use of several advanced tools such as Plastic Cards (Credit card, Debit card, Smart Card etc.), Payment Gateways in Online Payment, ATMs, Electronic Fund Transfer, Internet and Online Banking, Mobile Banking, SMS Banking, Electronic Cheques, Digital Wallets etc. are used by the companies to facilitate the customers to make payment. The factors that drive the growth and acceptability of electronic payment system are portability of the electronic payment system architecture with different electronic gadgets, acceptability of payment architectures by several businesses and industries, cash backs and discounts, online commerce support to digital payment and relevant offers, speed and efficiency in the payment transfer, ease of use and availability of payment all time and anywhere and many more. With the growth of internet and information technology, and related tools and practices have led to significant improvement in electronically enabled payment architecture especially in security, privacy, speed, efficiency, awareness building, infrastructural improvement, portability, ease of use, integration of different commercial platforms, web enabling, and many more. However, even after aforementioned advancements in all the possible aspects and dimensions of the electronic payment systems and frameworks there are several factor which drive the users for using it. Mainly, users are refraining from using electronic payment systems because of several demographic barriers, social barriers, lack of awareness and knowledge about the system and tool, trust over security and reliability, availability to use the tools, experience, privacy factors etc.

After the Digital India initiative promoted and launched under the supervision of the visionary Prime Minister Hon'ble Narendra Modi, several initiatives and schemes were promoted among the citizens to encourage them to use the digital modes of payment. Direct bank transfer of salaries and other payments into the bank account of employees, deposit of the scheme related fund directly into the beneficiary account, deposit of subsidies into the bank account, linkage of all the bank accounts with the PAN card number, launch of Rupay Card, more stringent IT Act, more confined rules for payment gateway companies (Third Party Payment Service Companies) for secure and reliable payment gateways and infrastructure, Chip based plastic cards, etc., may also be considered as the driving factors for using electronic payment systems.

Indeed, even after the ample of advancements in digitally enabled payment systems use of the electronic payment systems and tools among the common people is very low and the same trend is observed for the qualified professionals working in different types of industries and organizations. In view of these, it is very fundamental to quantify the variables that drive the clients to utilize any of the electronic payment system or framework. So, this research work examines the working professionals' opinion for the factors that drives them for the use of electronic payment system and framework. The geographical scope for the sample population is Udaipur district of Rajasthan.

II.RELATED STUDIES

Mustapha S. A. (2018) mentioned that emergence of electronic payment systems and frameworks had boosted the overall performance of the financial sector. Broadly the study confirmed that four major tools such as ATM, POS, Mobile money and Online Banking broaden the uses of digital or electronic payment system and increased the performance of banks. It was suggested that to nurture the electronic payment, organizations and service providers should work on security issues.

Radhika R. and Florence J. (2017) in their study on "effect of security and privacy factors on customers' perception for EPS" opined that trust, security and privacy aspects majorly drives the customers' perception for electronic payment system. The study recommended that digital payment system providers such as banks should ensure security issues associated with the electronic payment and privacy guidelines.

Radhika R. and Florence J. (2016) in their study on "Customer Intention to Use Electronic Payment Systems in India – A Study" opined that with the advent of electronic payment system both the customers and businesses are benefited through its potential benefits which ultimately offered ease to customers in payment, and portability and multiple mode of payments acceptance to businesses. The study confirmed that transparency, flexibility, affordability and user friendliness are the four predominant factors that drive user acceptance for digital payment tools and frameworks. The study also confirmed the positive effect of demographic characteristics on user acceptance for electronic payment system.

Maqableh M. et al. (2015) opined that reputation, trust and security, familiarity with the system, and ease of use are some key factors which have positive effect on users to use electronic payment system and remaining other factors participated in the study such as privacy and personalization, capacity and scope.

R. Sanghita and S. Indrajit (2014) suggested that in India to widen the scope and usage frequency of electronic payment more emphasis should be given on innovation, benefits and incentives, ease of use or convenience, and the legal framework. The study revealed that perceived ease of use is the most significant variable for the e-payment system acceptance and conversely, customer attitude was identified as a significant variable to influence the e-payment system among the customers or users.

Priyanks S. and Rachna (2013) studied the issues and challenges faced by the users or customer related to the electronic payment systems and frameworks. The study confirmed that be deficient in of usability, security, trust, and awareness are some crucial issues including the cost and time associated with the execution and implementation of electronic payment system or framework.

III.   RESEARCH METHODOLOGY

Population and Sample

The geographical coverage for the study purpose was Udaipur district of Rajasthan. Udaipur is also known as one of the most beautiful tourist destination in Asia and called as "City of Lakes". Due to the rich cultural heritage Udaipur is a good place in terms of getting socio-economically diversified respondents of good variation and mix of demographic and socio-economic characteristics and for the study it is confined to the working professionals of city. Literacy status of the study area is good as professionally and technically qualified respondents are available in corporate offices.

Non-Probability (Convenience Sampling) sampling method was followed for the purpose of choosing the working professionals of Udaipur district. In the sampling process, sometimes researchers became judgemental for selecting a particular respondent in order to get the duly filled questionnaire. The research result is also influenced by the interest respondents take to participate in the research. The sample size of 120 working professionals incorporate 65 male respondents and 55 female respondents of Udaipur district.

Data and Sources of Data

The present research work is carried out to assess the significance of factors that drive the working professionals of Udaipur district for the use of electronic payment system, and to study the association between demographic characteristics of users and factors that drives the working professionals of Udaipur district for the use of electronic payment system. In order to accomplish the basic research objectives, in the present research work qualitative research method was followed and the questionnaire was used for the purpose of primary data collection from the working professionals of Udaipur district, so, the present study is the combination of both the exploratory and descriptive research method.

A well developed questionnaire of demographic question set and 5 different questions with 150 data points was developed to assess the working professionals opinions for factors that drive them to use electronic payment system and to measure the association between demographic characteristics of users and factors that drives the working professionals of Udaipur district for the use of electronic payment system. The questionnaire was distributed among the working professionals of retail outlets of shopping malls, multiplexes, banks, MNC offices, where reaching to the appropriate and suitable working professional was found quite approachable. Principally, the questionnaire encapsulated questions related to the demographic characteristics, and factors that drive the working professionals of Udaipur district for the use of electronic payment system and the most prominently used electronic payment system by the working professionals in the daily practice.

Hypotheses under Study:

H_1: There are no significant factors that drive the working professionals of Udaipur district for the use of electronic payment system.

H$_{1a}$: There are significant factors that drive the working professionals of Udaipur district for the use of electronic payment system.

H$_2$: There is no association between demographic characteristics of users and factors that drives the working professionals of Udaipur district for the use of electronic payment system.

H$_{2a}$: There is significant association between demographic characteristics of users and factors that drives the working professionals of Udaipur district for the use of electronic payment system.

Research Variables:

Independent Research Variables: Personal/ demographic characteristics of the respondents (Gender, Age, Professional Occupation Type, and Qualification), Driving Factors for Electronic Payment System (security, privacy, speed, efficiency, awareness, infrastructure, portability, ease of use offered, integration with different commercial platforms, web enabling, reliability, trust, convenience offered by the system, availability to use the tools of electronic payment system, users' knowledge, skills and experience, offers and benefits, image and identity of the Payment Gateway etc.).

Dependent Research Variables: Working Professional Behaviour to Use the Electronic Payment System.

IV.   Data Analysis for Driving Factors for the Use of Electronic Payment Systems:

Reliability Analysis: Cronbach's alpha test of measuring the internal consistency or reliability was used to confirm the data quality. As the threshold value suggested is 0.7, so Cronbach's Alpha (α) value should be greater or equal to 0.7 to confirm the internal consistency and reliability of the data for the further statistical analysis.

Table 1: Reliability Test

Reliability Statistics	
Cronbach's Alpha (α)	**N Items**
0.789	150

Source: Statistical Analysis Output

Reliability statistics of the questionnaire encapsulating demographic question set and 5 different questions with 150 data points revealed that Cronbach's alpha (α) value is 0.789 and greater than the threshold value 0.7, so the dataset can be used for the further statistical analysis.

Frequency Distribution of Demographic Characteristics of Respondents: This section of frequency distribution of demographic characteristics of respondents' shows percent based participation of each class of the particular demographic characteristic. The adjacent columns to the class presents the number of respondents belonging to the particular class of the variable and mean score for the same in the Table 2 presented below.

Table 2: Frequency Distribution of Demographic Characteristics of Respondents

Demographic Characteristics	Classes	Frequency	Mean
Gender	Male	65(54%)	1
	Female	55(46%)	2
Age	Lesser than 30 years	26(22%)	1.96
	30 - 40 years	50(42%)	2.45
	40 - 50 years	35(29%)	2.89
	Greater than 50 years	9(8%)	3.6
Professional Occupation Type	Bank Employee	28(23%)	1
	Corporate Employee	26(22%)	2
	Engineer	12(10%)	3
	Lawyer	16(13%)	4
	Doctors and Others	38(32%)	5
Qualification	Below Graduate	2(2%)	1
	Graduate	8(7%)	2
	Post Graduate	87(72%)	3
	Professionally Qualified	23(19%)	4

Source: Statistical Analysis Output

The frequency distribution statistics of demographic characteristics of respondents presented in the above table revealed that out of 120 working professional respondents male were 65 (54%) and remaining 55(46%) were female which resembled approximate gender neutrality for the study means no gender class will dominate the result. For the age demographic variable it was found that that majority of the working professional respondents 50(42%) were in between 30 to 40 years, and 35(29%) were in between 40-50 years, 26(22%) working professional were less than 30 years. A good mix of different professional was incorporated in the study, out of 120 working professionals 28(23%) were bank employee, 26(22%) were corporate employees, 12(10%) were engineer, 16(13%) were lawyer, and remaining 38(32%) were of doctors and other professionals category. With reference to the academic and professional qualification of the respondents from the sampled working professionals, 2(2%) respondents were below graduate, 8(7%) working professionals were graduates, 87(72%) respondents were post graduate and remaining 23 (19%)

respondents were having higher professional degrees. So, in totality the demographic characteristics variation for the study purpose showed a good mix and variation of different classes pertaining to the particular demographic variable.

Principal Component Analysis of Factors Drive Working Professionals for Use of Electronic Payment: Principal component analysis for the present research work was performed over 18 different variables (Security, Privacy, Speed, Efficiency, Awareness, Infrastructure, Portability, Ease of use offered, Integration with different commercial platforms, Web enabling, Reliability, Trust, Convenience offered by the system, Availability to use the tools of electronic payment system, Users' knowledge, Skills and Experience, Offers and Benefits, Image and Identity or Reputation of the Payment Gateway) that drive for use of electronic payment system. Varimax rotation was conducted for the principal component extraction out of the participating driving variables.

Table 3: KMO and Bartlett's Test for Factors Drive Working Professionals for Use of Electronic Payment

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.779
Bartlett's Test of Sphericity	Approx. Chi-Square	897.122
	Df	96
	Sig.	.000

Source: Statistical Analysis Output

From the above table 3 of KMO and Bartlett's test statistics for the factors drive working professionals for use of electronic payment it is found that KMO measure of sampling adequacy value is 0.766 and the Bartlett's Test of Sphericity with approximate chi-square value is 897.122 which is found statistically significant as sig. value .000 is lesser than 0.05. This confirms that for all the participating 18 variables correlations are relatively compact and PCA test can further be performed over the dataset. Significant Bartlett test value also confirmed that there is good association between participating variables.

Table 4: Total Variance for Factors Drive Working Professionals for Use of Electronic Payment

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
1	5.434	36.567	36.567	5.434	36.567	36.567	3.211	18.134	18.134
2	2.312	12.222	48.789	2.312	12.222	48.789	2.632	17.225	35.359
3	1.302	9.362	58.151	1.302	9.362	58.151	2.166	16.269	53.604
4	1.023	7.894	66.045	1.023	7.894	66.045	1.986	14.417	66.045

Source: Statistical Analysis Output

Principal component analysis with Varimax rotation was performed over the listed 18 different factors that may drive working professional for the use of electronic payment system, this test will lead into the reduction of 18 variables into few significant constructs, highly correlated variables/ factors will form on group. Above table 4 of total variance for factors drive working professionals for use of electronic payment revealed that four extracted factors accounted total 66.05% variance. Highest variance was observed for factor 1 with 36.57%, second factor accounted 12.22% of variance, third factor accounted 9.36% variance and fourth factor accounted 7.89% variance.

Table 5: Rotated Component Matrix for Factors Drive Working Professionals for Use of Electronic Payment

Driving Factors	Component			
	1	2	3	4
Security	.789			
Privacy	.764			
Speed	.824			
Efficiency	.723			
Infrastructure	.656			
Portability	.713			
Integration with different commercial platforms	.812			
Web enabling	.763			
Reliability	.802			
Convenience offered by the system	.692			
Users' knowledge		.663		
Users' Skills and Experience		.721		
Awareness		.586		
Image and Identity or Reputation of the Payment Gateway			.709	
Offers and Benefits			.659	

Trust		.806	
Ease of use offered			.664
Availability to use the tools of electronic payment system			.618

Source: Statistical Analysis Output

Component 1 – Technical Characteristics: This component incorporated 10 variables (Security, Privacy, Speed, Efficiency, Infrastructure, Portability, Integration with different commercial platforms, Web enabling, Reliability, and Convenience offered by the system).

Component 2 – User Centric Characteristics: This component incorporated 3 variables (Users' knowledge, Users' Skills and Experience, and Awareness).

Component 3 – Brand Benefits Characteristics: This component incorporated 3 variables (Image and Identity or Reputation of the Payment Gateway, Offers and Benefits, and Trust).

Component 4 – Usability Characteristics: This component incorporated 2 variables (Ease of use offered, and Availability to use the tools of electronic payment system).

Friedman Test: Friedman test on the above extracted four factors would be helpful to assess the ranking of most significant component/ factor group according to the working professionals' opinion and which is the least significant component/ factor group.

Table 6: Friedman Test on Component Extracted by Rotated Component Matrix for Factors Drive Working Professionals for Use of Electronic Payment

Impeding Factors	Avg.	Std. Dev.	Ranking	Chi	df	Sig.
Technical Characteristics	2.684	0.328	3.97			
User Centric Characteristics	3.636	0.372	3.64	1095.11	3	.001
Brand Benefits Characteristics	2.528	0.448	3.12			
Usability Characteristics	2.822	0.332	2.78			

Source: Statistical Analysis Output

According to the Friedman test statistics on component extracted by rotated component matrix for factors drive working professionals for use of electronic payment revealed that for all the four components of driving factors the chi-square value was 1095.11 and sig. value was found .001. Highest ranking score (3.97) was attained by the technical characteristics components and the lowest ranking score (2.78) was for observed for usability characteristics component. But in totality due to the significance value i.e. .001 which is lesser than 0.05 confirms that H_{1a} must be accepted which confirms that Technical Characteristics, User Centric Characteristics, Brand Benefits Characteristics, and Usability Characteristics factors significantly drive the working professionals of Udaipur district for the use of electronic payment system and highest driving factor is technical characteristics which incorporates Security, Privacy, Speed, Efficiency, Infrastructure, Portability, Integration with different commercial platforms, Web enabling, Reliability, and Convenience offered by the system.

Significance Analysis of Association between Demographic Characteristics of Users and Factors that Drives the Working Professionals of Udaipur District for the Use of Electronic Payment System: To measure the significance of association between the demographic characteristics of users and factors that drives the working professionals of Udaipur district for the use of electronic payment system linear regression analysis was performed where independent variables were gender, age, professional occupation and qualification, and the dependent variable was the working professional's use of electronic payment system.

Table 7: ANOVA to measure the Association between Demographic Characteristics and Factors Drives Working Professionals for the Use of Electronic Payment System

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	68.223	4	68.223	16.193	.000ª
	Residual	65.112	115	4.213		
	Total	133.335	119			
a. Predictors: (Constant), Gender, Age, Professional Occupation, Qualification						
b. Dependent Variable: Drive to Use Electronic Payment System by Working Professionals						

Source: Primary Data Compilation

ANOVA statistics to measure the Association between Demographic Characteristics and Factors Drives Working Professionals for the Use of Electronic Payment System is presented in the above table 7 revealed that for model 1, the association between gender, age, professional occupation, qualification and drive to use electronic payment system by working professionals of Udaipur district found significant (F=16.193 and sig. =.000). The significant value is found lesser than 0.05 significance level and confirms that H_{2a} must be accepted which confirmed that there is significant association between demographic characteristics of users and factors that drives the working professionals of Udaipur district for the use of electronic payment system.

V. Results and Discussion

Research data analysis section revealed that Technical Characteristics (Security, Privacy, Speed, Efficiency, Infrastructure, Portability, Integration with different commercial platforms, Web enabling, Reliability, and Convenience offered by the system), User Centric Characteristics (Users' knowledge, Users' Skills and Experience, and Awareness), Brand Benefits Characteristics

(Image and Identity or Reputation of the Payment Gateway, Offers and Benefits, and Trust), and Usability Characteristics (Ease of use offered, and Availability to use the tools of electronic payment system) as the driving factors significantly drive the working professionals of Udaipur district for the use of electronic payment system and highest driving factor fall in the group of technical characteristics. The study also confirmed that demographic characteristics of users and factors that drive the working professionals of Udaipur district for the use of electronic payment systems are significantly associated with each other. During the research process it was mainly recognized that technological advancement in the payment systems have helped both the users and the service providing e-commerce companies and banks.

REFERENCES:
[1] Mahmoud M., Ra'ed M.T.M., Rifat O.S., Khalid M.N. (2015). "Perceived Trust and Payment Methods: An Empirical Study of MarkaVIP Company." IJCNSystem Sciences, Vol. 8, PP. 409-427.
[2] Mustapha S. A. (2018). "E-Payment Technology Effect on Bank Performance in Emerging Economies–Evidence from Nigeria," Journal of Open Innovation: Technology, Market, and Complexity, Vol. 4, 43.
[3] Priyanka S. and Rachna (2013). "Issues and Challenges of Electronic Payment Systems," IJRMP, Vol. 2, Issue 9, December 2013, PP. 25-30.
[4] Radhika R. and Florence J. (2016). "Customer Intention to Use Electronic Payment Systems in India – A Study." IJAHMS, Vol. 2, Issue 12.
[5] Radhika R. and Florence J. (2017). "Security and Privacy Factors Affecting Customers Perception of Electronic Payment System- An Empirical Analysis." International Journal of Arts, Humanities, and Management Studies, Vol. 3, Issue 6.