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The Pulse of Digital Payments: Understanding UPI App Preferences

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ABSTRACT

UPI has become a widely accepted and preferred payment mode since its inception in 2016 in India. UPI is an advanced payment system which offers greater ease of use for consumers along with high security and it has shown greater adoption by the people. In 2008 demonetization and then covid-19 led to the growth in online and digital mode of payment. Availability of highspeed uninterrupted internet further facilitates the acceptance of UPI mode in urban as well as rural area. According to the studies India's digital payments volume has increased at an average annual rate of about 50 percent over the last five years. This study intends to understand the factors influencing customer preferences towards UPI apps. This study was conducted in Kalol and Gandhinagar districts of Gujarat. Simple Random sampling method was used to select 203 respondents for the study. The influence of various factors like convenience, popularity, safety, ease of access was analysed to know customer preferences for UPIs. Test like ANOVA and t-Test were used for analysis. The results indicate that customers have a favourable opinion for unified payment interface method. The usage of UPI services is positively correlated with the respondents' level of education. Customers prefer UPI app that offer more safety and trustworthiness over convenience, popularity and other services like cash back and rewards.

Keywords: UPI, Customer Preferences, Digital Payments.

INTRODUCTION

UPI run by NPCI (National Payment Corporation of India) recently set a new milestone by recording 10.5 billion transactions on the platform in August 2023, which is just twice of august 2021 figures that stood around 3.5 billion. This payment method has almost grown three times within 2 years with major players in the segment- Phone Pe, Google Pay and Paytm, as per the times of India article dated Sep1, 2023[i]. This data reflects that India is moving towards becoming a cashless economy by reducing the use of cash. A countries payment system is what makes it real and financial markets work. Payment system expenses estimated to be between 2% to 3% of GDP. This cost markedly be reduced when paper-based payment system is replaced by electronic payment system[ii]. This cost further reduce by using digital payment system, also it promotes transparency in the system. India's expedition towards a cashless economy was significantly influenced by demonetisation and COVID-19. The former laid the groundwork for digital payments, while the latter became the primary source for building the digital payment ecosystem. The introduction of the Unified Payment Interface (UPI) led to a shift from traditional payment methods to electronic options, including debit and credit cards, internet banking, and mobile payment technologies.

To take the advantage of this growing segment companies are adding more features to grab the market. According to a business line article dated September 12, 2023 Hitachi Payment Services launched the countries first UPI-based ATM, in partnership with NPCI. This allows customers to withdraw cash without a debit or credit card[iii].

The RBI envisions a simple, secure, and efficient platform for transactions, aspiring for a digital transaction economy. UPI with its safe and secure features like multiple banking features under one roof, seamless merchant payments and fund routing and add on features like in-app payments, cross-screen QR codes, web-based payments, and online payments using Union pay-powered e-wallets satisfies the criteria outlined in the RBI's vision, making it a promising future for the Indian payments industry. To promote the use of UPI, RBI has now

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allowed banks to offer a credit line facility to UPI users. Now it would be possible for the customers to spend from a pre sanctioned credit line and repay the bank later.

LITERATURE REVIEW

Customer preferences refers to the tendency of customers to choose (Howard & Sheth 1969)[iv]. Customers make a preference on the basis of certain factors and choose products that possess those factors. In a study in 2009 Franke and his co-workers stated that customized products designed according to the customer preferences are more likely to receive acceptance in the market[v]. So, it can be interpreted that its always beneficial and profitable to identify preferences of customers in a particular area or region. That can be done by market research by surveying the market. Customer's preference depends on various factors. Customers prefer card less cash because of its usefulness over the card rather than perceived ease of use, customer trust or perceived security (Bindu K. Nambiyar & Kartikeya Bolar, 2023)[vi]. Hence it can be interpreted from the paper that UPI apps are more useful than cards. Many studies have been done to identify major factors responsible for setting customer preferences for UPI.

Digital payment is more convenient and time saving as compare to the traditional cash currency method. It is faster mode of payment, accessible round the clock and offer discounts and cash back[vii]. Convenience is one important factor while making a particular choice. Choice is also determined by availability and perceived benefits. In a study in 2020 factors like safety & privacy, peer influence, offer and benefits, convenience and availability were investigated by the author. Safety and security can be defined as safety of sensitive data with the company with no misuse of data and safe transactions. They defined Peer influence as influence of family and friends to use an app, or insisting to do so while convenience is ease of completing a transaction and installing the app. According to the study 52% of non-users reported safety and security as major reasons for not using UPI payment method (Garima Agarwal & Ari Vaish, 2020)[viii]. A study in 2012 concluded that customer preferences are influenced by gender, age, income, family size, marital status, and income [ix]. In 2023 N. Bharath considered variables like cost, security, speed, convenience, discounts and offers to find out customers preference for UPI in Chennai city. The study concluded that most of the respondents are using UPI for making payments but not fully aware of it. No significant difference was found in any dependent variable in relation to the independent variables like age, gender, education, income, occupation and no. of accounts[x]. Ease of using, service fee, loyalty, convenience are major factors responsible for customer choices as more than 50% respondents believed them as a crucial determining factor to frame their choice for UPI apps. 49% of respondents are sceptical about privacy issues in such digital payment method[xi]. A study by Chian-Son Yu in 2017 through sampling 441 respondents concluded that people's intentions to adopt mobile banking was significantly influenced by perceived financial cost, perceived credibility, social influence, and performance expectancy. The study demonstrated that effect of performance expectancy and perceived financial cost is moderated by gender and the effects of perceived self-efficacy and facilitating conditions are moderated by age[xii]. In a study of customer perception towards digital payment methods in 2017 it was found that demographic factor except education do not have much impact on adoption of digital payments[xiii]. According to a study in 2018 about E wallet and youth of India it was found that young people use E wallets more for mobile recharge and ticket booking as its less time consuming. They further added that Freebies, cash back, discounts, and loyalty points are major attraction for the youth to adopt digital payment methods[xiv].

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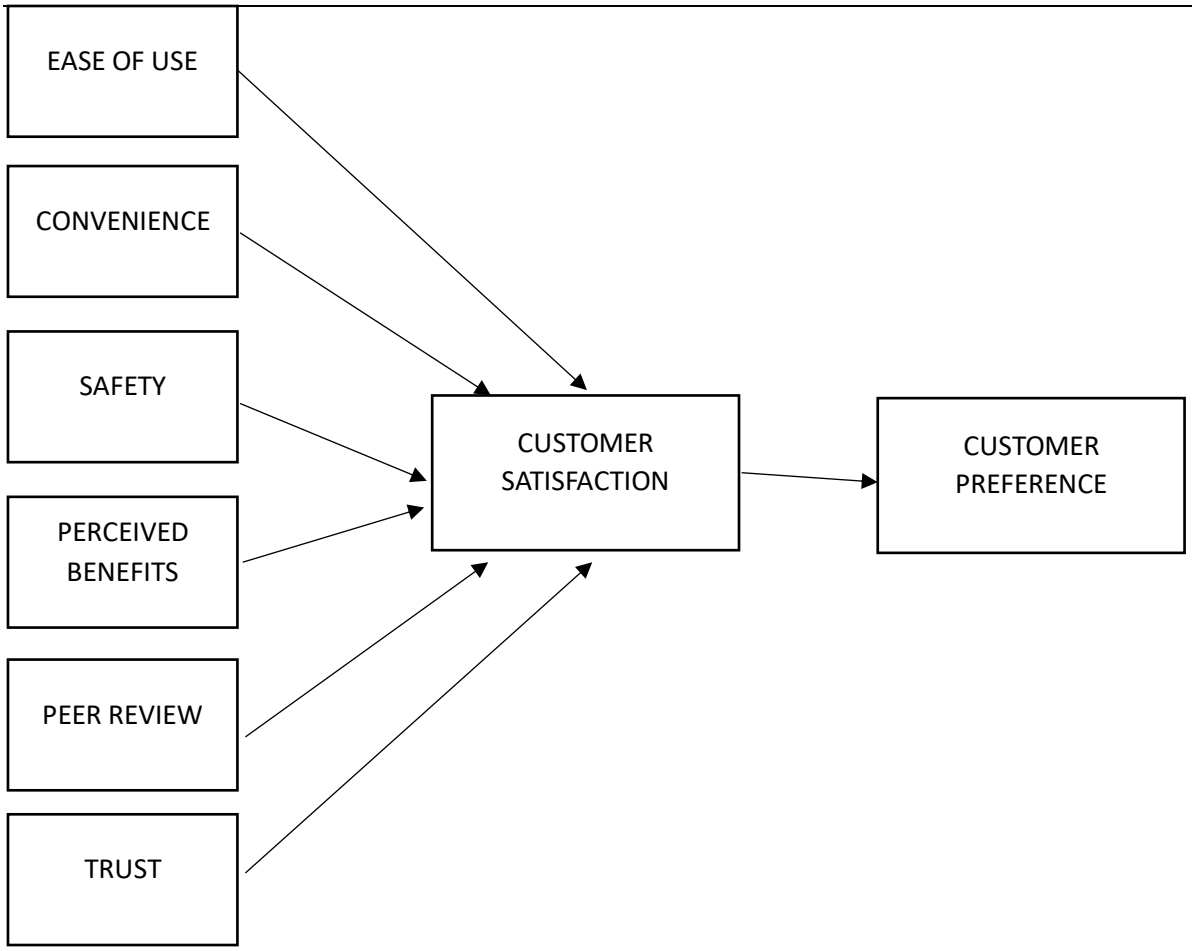


Figure1: Conceptual Framework

Based on the above literature review above conceptual framework is designed showing relationship among the variables. Which reflects that these factors responsible for customer satisfaction, which has direct relationship with customer preference.

RESEARCH METHODOLOGY

This study is aim to identify the factors majorly responsible for determining customers preferences for UPI payment methods. For the study variables like safety and security, convenience and ease of use, peer review, brand image and popularity of app, offers and discounts, loyalty programs, familiarity and trust in the banking ecosystem were taken into account to find out customer preference for UPI apps. A questionnaire containing structured questions was distributed to 225 respondents of Kalol and Gandhinagar, out of which only 203 were usable as rest were incomplete and not reliable. Demographic factors like Age, Income, Education, Gender, Occupation, Number of bank accounts etc. were taken as independent variables. The dimensions like mode of payment, Purposes for UPI usage, Perceived speed, Compatibility of application & OS, External threats, Perceived benefits, internet accessibility, competitive advantage over other apps, customer satisfaction, were taken as dependent variables. Five-point Likert scale was used to measure the responses. The survey was conducted around Gandhinagar and Kalol regions of Gujarat state. The samples were selected using simple random sampling method and also used descriptive Research design. The duration of research was 75 days. T test, ANOVA and correlation were used in this study to analysis collected data.

Data Analysis

Demographic factors play major role in determining preferences of customers in a particular region. This study aims to identify customer preferences for UPI using demographic factors like age, gender, types of family, education, occupation, income. It's essential to analyze these demographic variables to have a better understanding of customer preferences.

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Table: 1 Descriptive Statistics of demographic variables.

Demographic Variables		Frequency	Percent
Gender	Male	112	55.2
	Female	91	44.8
Age	18-25	79	38.9
	26-35	74	36.5
	36-45	29	14.3
	46 and above	21	10.3
Education	10th/12th	40	19.7
	Graduate	94	46.3
	Post Graduate	69	34
Occupation	Private employee	87	42.9
	Govt. Employee	42	20.7
	Self employed	50	24.6
	Student	24	11.8
Employment Sector	IT/technology	26	14.1
	Finance/banking	41	22.2
	Healthcare	39	16.15
	Education	39	16.15
	Retail	58	31.4
Type of family	Joint Family	95	46.8
	Nuclear Family	108	53.2
Income level (monthly)	under 20000	54	30.7
	20000-40000	74	42
	40000 and above	48	27.3
No. of bank Account	1	68	33.5
	3-Feb	99	48.8

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	4 and above	36	17.7

Dimensions/ Demographic factors	Mode of Payment	Purposes for UPI usage	Perceived speed	Compatibility of application & OS	External threats	Perceived benefits	Internet accessibility	Competitive advantage over other apps	Customer satisfaction
Gender	**<.001**	**<.001**	**<.001**	**<.001**	**.001**	**<.001**	**.005**	**<.001**	**<.001**
Age	**<.001**	.496	.268	.126	.561	.580	.179	.393	.108
Education	.051	.817	.986	.860	.808	.966	.476	.542	.818
Occupation	**<.001**	**.032**	**.010**	**.008**	**.007**	**<.001**	**.011**	**<.001**	**<.001**
Employment sector	.589	.230	**.007**	.257	**.014**	.077	.425	.123	.201
Monthly Income	**<.001**	**.048**	.620	.319	.497	.888	.851	.893	.590
No. of bank account	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**.002**	**<.001**	**<.001**
Family type	.148	.677	.684	.285	.257	.534	.659	.207	.140

Table: 2 P- values for comparison of means.

Analysis reflects significant difference between males and females for all dependent variables. In T-test, it's found that P value of all variables for gender is below 0.05, It means there is a significant difference in the mean value between gender. Hence null hypothesis is rejected in all these cases. It indicates that gender is highly associated with all studied aspects of UPI. It was found in the study that males use UPI apps more for fund transfer, they prefer a UPI which is more suitable for bill payment and where purchase transactions can be done easily. Vast difference is observed between males and females for transaction speed. Male respondents strongly prefer a UPI app with high transaction speed and which is available in multiple languages. Also, they showed a preference towards app which is compatible with multiple bank accounts, it must be able to meet the respondents need.

Age has p-value of less than 0.05 for mode of payment suggesting significant difference in mean values of different age groups. There is no significant difference observed among different level of Education as p value is above 0.05, hence null hypothesis is accepted. Study demonstrated that respondents in the age of 18-25 prefer Net Banking and E- wallets over credit or debit cards, while respondents of age range 36-45 prefer credit cards as mode of payment. Respondents of age more than 46 showed same preference level for net banking and E-wallets. 26-35 age groups are keener towards technical error than internet accessibility.

For Occupation, significant difference in the mean value is observed among various occupations as p- value is lesser than 0.05 in all aspects, hence null hypothesis is rejected. According to the study private employees are

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more concern about leaking or sharing of data and money theft or loss. Private employees prefer a UPI app where money gets refunded earlier than other apps in case of wrong transaction. Private employees prefer an app with good internet accessibility, good internet review and brand popularity while students have more concern for technical error. They prefer an app which has lesser technical error.

Again, significant difference was observed for different employment sector for perceived speed, external threats as P value is below 0.05, hence null hypothesis is rejected. P value for mode of payment and purposes for UPI usage for monthly income level is below 0.05 hence there is a significant difference in mean values of different monthly income level.

As like other variables for no. of bank accounts also P value is below 0.05 reflects significant difference in mean values of no. of bank accounts. It means null hypothesis is rejected in all these cases. It can be observed that people with more no. of bank accounts prefer UPI for payments like Bill payment, shopping, movie ticket booking and other purposes, while respondents with 1 account and more than 4 accounts use UPI equally for mobile recharge purpose. For types of family p value is more than .05, reflects no significance difference, hence null hypothesis accepted.

Respondents with income level 20,000 – 40,000 prefer a UPI App that provide offers like cashback, vouchers etc. than other income groups. Respondents with below 20,000 income level prefer an UPI app with good internet accessibility and with good internet review and brand popularity than other income level. Respondents with income level more than 40,000 prefer UPI more for fund transfer and they want an app where purchase transactions can be done easily.

			Frequency of use	**Ease of Use**	**Convenience**	**Safety**	**Perceived Benefits**	**Peer Reviews**	**Trust**	**Customer Satisfaction**
Spearman's rho	Frequency of Use	Correlation Coefficient	1.000	.404**	.357**	.328**	.279**	.296**	.220**	.360**
		Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000	0.002	0.000
		N	203	203	203	203	203	203	203	203
	Ease of use	Correlation Coefficient	.404**	1.000	.816**	.712**	.631**	.690**	.659**	.788**
		Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.000	0.000
		N	203	203	203	203	203	203	203	203
	Convenience	Correlation Coefficient	.357**	.816**	1.000	.790**	.717**	.741**	.680**	.797**
		Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000
		N	203	203	203	203	203	203	203	203
	Safety	Correlation Coefficient	.328**	.712**	.790**	1.000	.758**	.782**	.678**	.715**
		Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000

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		N	203	203	203	203	203	203	203	203
	Perceived Benefits	Correlation Coefficient	.279**	.631**	.717**	.758**	1.000	.801**	.654**	.816**
		Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000	0.000	0.000
		N	203	203	203	203	203	203	203	203
	Peer Reviews	Correlation Coefficient	.296**	.690**	.741**	.782**	.801**	1.000	.787**	.791**
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000
		N	203	203	203	203	203	203	203	203
	Trust	Correlation Coefficient	.220**	.659**	.680**	.678**	.654**	.787**	1.000	.768**
		Sig. (2-tailed)	0.002	0.000	0.000	0.000	0.000	0.000		0.000
		N	203	203	203	203	203	203	203	203
	Customer Satisfaction	Correlation Coefficient	.360**	.788**	.797**	.715**	.816**	.791**	.768**	1.000
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		N	203	203	203	203	203	203	203	203

Table 3: Correlation Coefficient.

Frequency of use seems to have positive correlation with all the factors and all the correlations are statistically significant as p value <0.05. It has moderate relationship with ease of use (rho value =0.404), Convenience (rho value = 0.357), Safety (rho value = 0.328) and Customer Satisfaction (rho value = 0.360), moderate to weak relationship with perceived benefits (rho value = 0.279), peer reviews (rho value = 0.296), trust (rho value = 0.220).

Ease of use also have positive correlation with all the factors and all the correlations are statistically significant as p value is < 0.05. The factor has strong relation with convenience (rho value = **0.816)**, safety (rho value = **0.712)** and customer satisfaction (rho value = **0.788)** and moderate to strong correlation with perceived benefits (rho value = 0.631), peer reviews (rho value = 0.690) and trust (rho value = 0.659).

Convenience also have positive correlation with all the factors with all statistically significant correlation as p value < 0.05. The factor reflects strong correlation with safety with (rho value = **0.790),** perceived benefits (rho value = 0.717) and customer satisfaction peer reviews (rho value = 0.741) and moderate to strong relationship with trust (rho value = 0.680).

Safety also seems to have positive correlation with all the factors with all statistically significant correlation as p value <0.05. It demonstrates strong relationship with perceived benefits (rho value = 0.758), peer reviews (rho value = 0.782) and customer satisfaction (rho value = 0.715) and moderate to strong correlation with trust (rho value = 0.678).

Perceived Benefits shows positive correlation with all the factors and all the correlations are statistically significant as p value < 0.05. The factor demonstrates strong correlation (rho value = **0.801)** with peer reviews

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(rho value = **0.801)** and customer satisfaction (rho value = **0.816)** and moderate to strong correlation with trust (rho value = 0.654).

Peer Reviews demonstrates positive correlation with all the factors and all the correlations are statistically significant as p value < 0.05. It reflects strong correlation with trust (rho value = 0.787) and customer satisfaction (rho value = **0.791)**.Trust have positive and statistically significant correlation with all the factors as p value <0.05. It reflects strong correlation with Customer Satisfaction (rho value = **0.768).** Customer satisfaction have positive, strong and statistically significant correlation with all the factors taken for the study except frequency of use having moderate to weak relationship.

RESULTS AND DISCUSSION

The study demonstrates that customers prefer a UPI app which is easy to install and convenient to use, it must be safe and secure in terms of data sharing and loss of money and which has a good transaction speed. It also demonstrated that different gender and different occupation has different preference for aspects studied like mode of payments, purpose, speed, compatibility, threat, and trust. Study also reflects strong positive correlation between all the factors taken for study but weak correlation with frequency of use. This gives a scope for further study as both the variables must have a strong correlation. The payment system in India has evolved from bartering to utilizing currency, cards, and digital payment methods. Security is a crucial element for the implementation of UPI payments, as it is the top concern for consumers. India is a country where cash still holds significant importance. Despite the rapid growth of digital payment methods, there is a lack of awareness among people regarding security, data privacy, and other related concerns. This leads them to prefer using cash or cards over UPI. The results indicate that customers have a favourable opinion of unified payment interface services, and the usage of UPI services is positively correlated with the respondent's level of education. Individuals with higher education are more likely to use UPI systems. The expansion of smartphone users and easy internet accessibility in the region has also made UPI Services more widely available. However, users face difficulties in installing, especially old aged people, sometimes due to technical issues. Government should conduct campaigns to educate internet and banking users about UPI services especially in rural region to add rural people in financial main stream. According to the study most of the respondents are using phone pay as compare to g-pay and Paytm. Literature review also support the outcome. By addressing the factors taken in the study, UPI app providers can position themselves for sustained growth in the dynamic digital payment landscape.

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