



An Analysis of Consumer Perception for Unified Payment Interface (UPI) with Demographic Perspective

Goyat S^{1*}, Nandal V²

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^{1*} Sonia Goyat, Research Scholar, School of Commerce and Management, Om Sterling Global University, Hisar, Haryana, India.

² Vipin Nandal, Assistant Professor, School of Commerce and Management, Om Sterling Global University, Hisar, Haryana, India.

Unified Payment Interface (UPI) system launched with various innovative features and now it is in progressing mode but to maintain its growth in future it is necessary to know consumer perception for UPI. The main objective of this paper is to analyse the perceptions for different variables of UPI and also to identify existence of any difference in consumer perception on the basis of demographic factors such as Gender and Residential area. This study is conducted using primary data gathered from 453 UPI consumers from Haryana and Delhi NCR. Descriptive statistics and Independent sample t-test used for analysis. The study found that consumer has positive perception for all UPI variables but degree of agreement is different. The perception of UPI consumer on basis of residential area are not significantly different but there is difference in opinion of male and female for "Convenience, accessibility, Rewards and Support service" UPI variables.

Keywords: demographic factors, gender, perception, residential area, unified payment interface (upi)

Corresponding Author

Sonia Goyat, Research Scholar, School of Commerce and Management, Om Sterling Global University, Hisar, Haryana, India.
Email: soniagoyat08@gmail.com

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1. Introduction

In present time due to the speedy growth of "Digital payments" in India it has transformed the way how individuals conduct financial transactions. Therefore, to cater the needs of persons "Unified Payments Interface (UPI)" system launched by the National Payments Corporation of India (NPCI) emerging as a pioneering platform in this area. It is in existence since 2016, an advanced way of digital payment and because of this our economy is also growing consistently which can be observed on the basis of data regarding value and volume of UPI transaction available on NPCI Official website. The UPI is combined with numerous advanced features and because of this reason its popularity is enriching day by day. As UPI is continuously gaining attention of each individual therefore, it is essential to understand in real consumer perception or their attitude towards this system that helpful for policymakers, service provider companies and their perception level also directly influence their adoption rate, loyalty of customer and possibility of market growth. The present study focused on examining consumer perception for various UPI variables such as Convenience, Rewards system, Affordability and Usage Pattern so that we can find the key factors out of these. The current paper also explores any significant difference exist or not in consumer perception on demographic basis including gender and residential area mainly. The result of this study also makes a contribution and provides valuable insights for service Provider Company and policymakers to frame strategies according to the views of consumer and to attain growth in digital payment world.

2. Review of Literature

Debnath (2024) and Gohil et al.(2023) extracted that adoption and usage of UPI increased due to Transaction processing speed and effective security features associated with it and also consumers hold positive perception for UPI due to easy to use feature. **Goswami et al. (2023)** reviewed that consumer are generally satisfied and positive perception of UPI due to quick transaction processing and ease of use but emphasized that technical issues associated with UPI create problem sometime. **Khatter and Soni(2023)** examined that there is no significant difference in consumer opinion on gender basis but consumer age plays a

key role in shaping consumer opinions about UPI. **Mondal and Sharma (2023)** investigated that perception of rural consumers in West Bengal are varies for different UPI features because of uneven demographic profile of each consumer. **Ramya and Sandhiya (2023)** analysed that majority consumers prefer UPI though they remain neutral regarding some of its UPI features. **Vidya and Sankar(2023)** elaborated that 99 per cent consumers are satisfied with UPI and they support its continued use. **Irene and Devi(2022)**concluded that majority respondents have positive perception of UPI, mainly due to its ease of use and also revealed that young male customers tend to prefer UPI, again highlighting the influence of age and gender on consumer perception. **Poudel and Sapkota (2022)** examined the effect of ease of use, security, privacy features and usefulness on customer trust and perception for digital payment system and it is identified that these features contribute positively to consumer trust and perception.. **Aggarwal et al.(2021)** emphasized the influence of age, education and marital status on UPI adoption. **Arvind and Rajesh (2021)** found that most consumers prefer UPI due to its easy to use and time saving features, although occasionally digital illiteracy and server downtime can negatively affect their perception. **Mahesh and Bhat(2021)** conducted a SWOT analysis of UPI, revealing that UPI leads the digital payment sector primarily because of its ease of use. **Rasna and Sushila(2021)** found a marked difference in UPI usage between urban and rural consumers because urban males and females favouring the payment mode more than rural users. **Durairaj and Joseph (2019)** found that students prefer UPI because of its ease of use, showing UPI's superiority over mobile wallets in terms of feasibility.

3. Research Methodology

This section comprises of sample size, sample selection method, source of data, Area of research, data collection method and data analysis technique. Primary sources are used for data collection and samples are collected on the basis of "Random Sampling Method". The responses are collected in structured questionnaire prepared with the help of "Online Google Form" from 453 UPI consumers of Haryana and Delhi NCR. The collected data is analysed by using frequency, mean, and weighted mean, Independent sample t-test.

4. Objective of the Study

- To analyse the Perception of UPI consumers regarding different UPI variables
- To identify the differences in consumer perception for UPI variables on demographic (Gender, Residential Area) basis.

5. Hypothesis

H11: There is significant difference in consumer perception for UPI variables (Convenience and Accessibility, Rewards and Customer Support Service, Usage Pattern, Affordability and Speed) on gender basis.

H12: There is significant difference in consumer perception for UPI variables (Convenience and Accessibility, Rewards and Customer Support Service, Usage Pattern, Affordability and Speed) on residential area (Urban/Rural) basis.

6. Data Analysis and Interpretation

There are different dimensions regarding which consumer perception is observed to see that how much extent they agree or disagree or neutral about different aspects of UPI. In the below tables responses are collected from the respondents of different demographic profile (age, gender, education, income, occupation, residential area) on the basis of five-point Likert scale from Strongly Agree to Strongly Disagree where scale are denoted as Strongly agree (SA) -5, Agree (A)- 4, Neutral(N) - 3, Disagree(D)-2, Strongly Disagree(SD) - 1.

Table 1: Analysis of Consumers Perception for UPI Variables (On Descriptive Statistics Basis)

A. Convenience and Accessibility of UPI									
Statements	Number of Respondents					Wtd. Sum*	*Mean Value	S.D*	
	SA (5)	A (4)	N (3)	D (2)	SD (1)				
1. Easy to use	250 (55.2%)	190 (41.9%)	12 (2.6%)	1 (0.2%)	0 (0.0%)	2048	4.52	0.56	
2. Reliable for payments	162 (35.8%)	248 (54.7%)	41 (9.1%)	0 (0.0%)	2 (0.4%)	1927	4.25	0.65	
3.No need to carry cash	203 (44.8%)	167 (36.9%)	57 (12.6%)	25 (5.5%)	1 (0.2%)	1905	4.21	0.88	
4. Available in different languages.	138 (30.5%)	233 (51.4%)	70 (15.5%)	12 (2.6%)	0 (0.0%)	1856	4.10	0.74	
5. Facilitates inter-bank transfers	168 (37.1%)	245 (54.1%)	32 (7.1%)	6 (1.3%)	2 (0.4%)	1930	4.26	0.68	
6. 24*7 working	218 (48.1%)	186 (41.1%)	36 (7.9%)	12 (2.6%)	1 (0.2%)	1967	4.34	0.75	
B. Rewards and Customer Support Service of UPI									
7. UPI provides valuable rewards offers	88 (19.4%)	192 (42.4%)	123 (27.2%)	30 (6.6%)	20 (4.4%)	1657	3.66	1.00	
8. I Prefer only cash back and discount offers	75 (16.6%)	199 (43.9%)	136 (30%)	22 (4.9%)	21 (4.6%)	1644	3.63	0.97	
9.UPI Rewards offering system leads to unnecessary spending	78 (17.2%)	184 (40.6%)	139 (30.7%)	31 (6.8%)	21 (4.6%)	1626	3.59	1.00	
10.UPI combined with Helpful support service	120 (26.5%)	237 (52.3%)	83 (18.3%)	11 (2.4%)	2 (0.4%)	1821	4.02	0.76	
11. UPI Solves transaction issues promptly	81 (17.9%)	230 (50.8%)	110 (24.3%)	30 (6.6%)	2 (0.4%)	1717	3.79	0.82	
12. UPI Helps to build consumer trust in real time payment system	100 (22.1%)	259 (57.2%)	86 (19%)	6 (1.3%)	2 (0.4%)	1808	3.99	0.71	

C. Perception regarding Usage Patterns of UPI by consumer								
13. Prefer UPI only for low value transaction	75 (16.6%)	197 (43.6%)	87 (19.2%)	76 (16.8%)	18 (4%)	1594	3.52	1.07
14. Always prefer one specific UPI app	89 (19.6%)	217 (47.9%)	77 (17%)	56 (12.4%)	14 (3.1%)	1670	3.69	1.02
15. Oftenly Prefer UPI in evening hours	51 (11.3%)	117 (25.8%)	117 (25.8%)	132 (29.1%)	36 (7.9%)	1374	3.03	1.1
16. Demonetization boosted UPI usage	128 (28.3%)	186 (41.1%)	100 (22.1%)	31 (6.8%)	8 (1.8%)	1754	3.87	0.96
17. Covid-19 accelerated usage of UPI	157 (34.7%)	224 (49.4%)	53 (11.7%)	12 (2.6%)	7 (1.5%)	1871	4.13	0.83
D. Perception regarding Affordability and Speed of UPI								
18. Affordable transaction cost	136 (30%)	248 (54.7%)	57 (12.6%)	12 (2.6%)	0	1867	4.12	0.72
19. Quick processing of transactions	179 (39.5%)	240 (53%)	30 (6.6%)	3 (0.7%)	1 (0.2%)	1952	4.31	0.64
20. Satisfied with UPI processing time.	169 (37.3%)	236 (52.1%)	46 (10.2%)	2 (0.4%)	0	1931	4.26	0.65
21. Lower transaction cost boost UPI usage	134 (29.6%)	208 (45.9%)	96 (21.2%)	12 (2.6%)	3 (0.7%)	1817	4.01	0.82

Source: Primary data Computed through SPSS

1. SD* = Standard Deviation
2. Wtd.Sum*(Weighted Sum) = Total of number of respondents multiplied by given Weight
3. Mean Value* = Weighted sum of each Statement / Number of Responses

The Table 1 is comprises of 4 parts which provides insights about the perceptions of consumers regarding UPI variables including "Convenience and Accessibility", "Rewards and Customer Support Service of UPI", "Usage Pattern" and "Affordability and Speed". The Part A of table 1 exhibits the "Convenience and Accessibility" variables and an overwhelming positive responses is received that comprises of six statements with mean value of each is above 4. The respondents are very positive attitude easy to use statement with highest mean value (4.52) then they appreciated UPI 24*7 working hours availability with mean value (4.34) followed by inter-bank transfers facility (4.26) and Reliability for Payments (4.25) due to approx. equal mean value, after that no need to carry cash (4.21) and availability of UPI in different languages (4.10) are categorised. The Part B of table 1 comprises with perception responses for "Rewards and Customer support service" UPI variables respondents showed slightly positive response, with mean value of all six statements ranging from 3.59 to 4.02. The respondents perception are approx. equal for the statement helpful support service of UPI (4.02) and UPI helps to build customer trust

(3.99) with very slight difference in mean value of both statements followed by UPI Solves transaction issues promptly (3.79), UPI provide valuable reward offer (3.66), Prefer only cash back and discount offers (3.63) and rewards always leads to unnecessary spending (3.59) as mean value of all more than 3 (neutral) means which shows respondents positive level of response and on the basis of percentage it is observed that mostly respondents are agree or strongly agree for that statements.

The Part C of table 1 reveals the descriptive analysis of responses about statements covered under "Usage Pattern" variable of UPI. The statement "Covid-19 accelerated usage of UPI" received moderately positive response with highest mean value (4.13) and 84 per cent respondents agree or strongly agree for it. The next statement Demonetization boosted UPI usage with mean value (3.87) and 69.4 percent respondents combined agree and strongly agree for this point that is followed by Always prefer one specific UPI app (3.69), Prefer UPI only for low value transaction (3.52) have positive response means above neutral. But in statement regarding use of UPI often preferred in evening hours very less respondents (11.3%) strongly agree or in favour of this statement with least mean value (3.03) generated approx. neutral response.

The part D of table 1 provides an insight for responses related to "Affordability and Speed" variable of UPI and it is extracted that this variable received continuously positive responses with all four statements because of mean value greater than 4. The maximum respondents believe that transactions are processed quickly through UPI with highest mean value (4.31) followed by maximum respondents also satisfied with UPI processing time with mean value (4.26). Mostly respondent have positive perception that UPI combined with affordable transaction cost (4.12) and also maximum are agree that low transaction cost boost UPI usage(4.01) because mean value equal to 4 and above half of the respondents(75.5%) give agree(29.6%) and strongly agree(45.9%) response.

Table 2: Skewness and Kurtosis (Check Normality of Data)

Constructs	No. of respondents (N)	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
1.Convenience and Accessibility	453	-.295	.115	-.285	.229
2.Rewards and Customer Support Service	453	.138	.115	.108	.229
3.Usage Pattern	453	-.384	.115	.355	.229
4.Affordability and Speed	453	-.154	.115	-.322	.229

Source: Primary data in SPSS

Table 2 provides an insight about the skewness and kurtosis value of primary data with the help of SPSS. When sample size is greater than 30 or 40 then assumption of normality of data can be ignored (Ghasemi and Zahediasl,2012). But even then data normality can be check on basis of skewness and kurtosis coefficient and value of z-score calculated and acceptable range is depend on sample size(Demir,2022). If value of skewness and kurtosis coefficient is range between +2 and -2 then also data assumed normally distributed (Field,2013).

Table 3: Analysis of Difference In Consumer Perception For UPI (On Demographic Basis)

A. Independent Sample T-Test On Gender Basis						
SR. No.	UPI Variables	Mean Value		t-test	p-value	Decision
		Male	Female			
1.	Convenience and Accessibility	4.32	4.22	2.16	0.031*	Rejected
2.	Rewards and Support System	3.69	3.88	-3.31	0.001*	Rejected
3.	Usage Pattern	3.61	3.68	-1.12	0.260	Accepted
4.	Affordability and Speed	4.17	4.17	0.12	0.902	Accepted
B. Independent Sample T-Test On Residential Area Basis						
SR. No.	UPI Variables	Mean Value		t-test	p-value	Decision
		Urban	Rural			
1.	Convenience and Accessibility	4.28	4.26	0.377	0.706	Accepted
2.	Rewards and Support System	3.78	3.77	0.034	0.973	Accepted
3.	Usage Pattern	3.67	3.60	0.995	0.321	Accepted
4.	Affordability and Speed	4.20	4.13	1.42	0.155	Accepted

*significance at 5% (0.05) level of significance

The table 3 illustrates the mean value, t-test value, p-value and finally the decision regarding acceptance or rejection of null hypothesis.

Independent Sample T-Test Results (On Gender Basis)

The part A of table 3 indicates independent sample t-test results on gender basis and it is identified that in case of "Convenience and Accessibility" variables the p-value of t-test (2.16) is 0.031 which is below than 5% (0.05) level of significance means perception of male and female for this UPI Variable are not equal means significant difference exist in their perception. The mean value of male perception (4.32) in case of "Convenience and Accessibility" is more in comparison to Female (4.22) that concludes that male is more positive in comparison to female. In case of "Rewards and Support system" the p-value of t-test (-3.31) is 0.001 which is also less than 0.05 means significant difference exist in male and female but in this variable females with mean value (3.88) more positive attitude for rewards in comparison to male having mean value(3.69). In next variable "Usage Pattern" p-value of t-test (-1.12) is 0.260 that is above 0.05 means perception of male and female having no significant difference exists as show in part A of table 3 mean value of male(3.61) are approx. Equal to mean value (3.68) of female perception for usage pattern. In fourth variable that is "Affordability and speed" p-value of t-test(0.12) is 0.902 means more than 0.05 that interprets that male and female have equal perception and it can also confirmed from table 3

where mean value of male(4.17) and female(4.17) are absolutely same.

Independent Sample T-Test Results (Residential Area Basis)

The part B of Table 3 indicates consumer perception for UPI variables on "Residential Area" basis. It is observed that p-value of t-test for all variables is more than 0.05 level of significance that interprets that consumers belong to urban and rural residential area have same perception or no significant difference.

7. Conclusion and Suggestions

The present study focused on to analyse the perception of UPI consumers and existence of any difference in their perception on some selected demographic factors such as gender and residential area for UPI variables. The result of the study highlights that consumer have positive perception for all UPI variables but near to strongly agree for easy to use features of UPI and very less agree for usage of UPI only in evening hours means because they prefer it in all working hours. But after applying t-test it is found that perception of UPI consumer are almost equal for all UPI variables on residential area basis means now in rural area also people prefer to use UPI due to better infrastructure and less internet connectivity issues. However, there is significant difference exists on gender basis because as the results presents that for "convenience and accessibility" males prefer UPI more with high mean value (4.32) in comparison to Females (4.22) therefore there is need to focus on awareness program for female and built user-friendly interface. But in case of "Rewards and Support System" Females prefer more that indicates they have more positive perception (3.88) than males (3.69) so to reduce this perception difference customized rewards offer should be initiated for males. The service Provider Company and stakeholders should launch adequate rewards system for male consumers also to promote gender equality. But perception of male and female are same for "Usage Pattern" and "Affordability and Speed" UPI variables.

Future Scope of the Study

The current research having few limitations therefore, to avoid these we should conduct research on some other demographic basis such as income, occupation etc.

The sample size should increase to generalise the result of this study and area covered under current study can also expand in future research.

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