



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

‘Digital Payments’ In A Globalized Framework

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Abstract: The current article made an attempt to examine the impact of various socio-demographic factors such as (Age group, Gender, Education level, social stratification, Occupation and Annual Family Income) basically on the adoption of digitalized financial services such as (Credit / Debit Card, Pre-paid Card, Internet Banking, UPI, Mobile Wallets and Mobile Banking). There are two dimensions such as rural and urban. In order to accomplish the objectives a mixed research design has been adopted.

Index Terms - digital finance, fintech, Socio-demographic factors.

I. INTRODUCTION

Digital finance is a process of acquiring, using and distributing financial resources to economic factors such as people, households, businesses and governmental organisations through digital infrastructure which includes digital devices and associated digital technologies (Ozili, P.K., 2018; Siddik and Kabiraj, 2020). The digital finance is considered as a prominent instrument accelerating socioeconomic development in the nation. In the modern finance, digital finance has gained greater significance because of its transformative potential to bring in social and economic changes to the society. Digital finance delivers numerous advantages to the economy, banks and the customers, such as stress-free approach to finance amid vulnerable clusters, minimal cost of fiscal dealings and amalgamation of technology with finance. Innovation of digital finance affects bank's concert.

The policy of the World Bank with respect to digital financial inclusion is aiding in lessening poverty. Towards greater degree of financial inclusion, Digital finance acts as a key enabler for enhancing the financial inclusion levels as it carries immense potential to bring in unbanked and uncovered individuals to the formal fold of financial sectors by use of electronic means and devices to enable them accessing basic bouquet financial products and services (Durai and Stella, 2019; Ozili, P.K., 2018 and Ozili, P.K., 2021b).

Convenience of access to formal financial services has potential to significantly improve the ability of low-income individuals, households and businesses for efficiently investing in their livelihood activities, safeguarding of assets, managing and containment of risks, a structured and smoothened income stream and poverty reduction (Cull, Ehrbeck & Holle, 2014; Dupas & Robinson, 2013). Digital finance comprises of a host of new financial services, products, businesses, software and innovative methods for customer engagement delivered through fintechs and providers of financial services (Gomber, Koch & Siering, 2017). Digital finance can unleash large gains in productivity and investment using which households and businesses

can prosper and that would prompt greater degree of financial inclusiveness. The words Digital finance signifies the provision of financial facilities through contemporary Information technology. The contemporary digital infrastructure embraces mobile phones and the internet.

Digital finance supports to avoid the traditional banking system. The objectives of introduction of digital finance are to develop a cashless financial market and to aid in from conventional banking to online global financial market. The infusion of digital finance has transported substantial variations in the field of banking and finance. Countless modern fiscal items are presented to customers via digital platform. Digital finance made it easy for customers to mitigate fiscal threats commendably and search variety of fiscal products and services.

Digital mechanism allows the customer to avail countless fiscal products like mobile banking, internet banking etc. Apart from this, digital finance users acquire numerous other advantages, which includes expediency in banking services, convenience in financial transactions, and lower costs of financial services. Digital finance assists customers to access financial services at anytime and anywhere. Because of the advancement in technology now, customers can have access to a bouquet of options in the form of credit/debit cards, unified payment interfaces, internet banking, wallets and mobile banking. Digital financial services include financial products, financial services, and digital technologies intending to have access to banking and other financial services through online mode. The online mode substitutes personal visit to the branch office of the bank.

II. REVIEW OF LITERATURE

Salodkar et al. (2015) studied that digital banking used for different aspirations such as bill payments, mobile recharges, online purchasing, and what's more purchase of securities in the present days. In most of the apps prop up E-wallet manifesto, customers are required to link his /her Bank Account or Debit / Credit Card with this mobile application.

They too talk about principles, significance, merits and demerits of use of E-wallets ending that electronic wallets come up with fast and easy manifesto to shop and pay.

Demirguc-Kunt et al. (2017) studied on financial inclusion, concluded that there is a rising trend in usage of electronic payments between 2014 and 2017. According to their survey, fifty-two percent of adults or seventy-six percent of account owners across the globe proclaimed doing or accepting a minimum of single digitized payment during the year 2016.

In high-income economies ninety-one percent of adults (ninety-seven percent of account owners) proclaimed making so; in developing countries forty-four percent of adults (seventy percent of account owners) did.

Kabakova, O. and Plaksenkov, E. (2018) Carried out a study on various factors enabling financial inclusion in 43 developing countries. The study revealed that there exist a triple pair factor which affect financial inclusion: high socio-demographic and political factors in the absence of economic development; high social, technological and economic factors in the absence of political development; and political and economic factors in the absence of social and technological development.

Jain, M. and Sabharwal, P. (2019) studied on the adoption of e-Wallets and opined that barely the respondents concerning to the lower age bracket (nineteen to thirty-five) are comparatively conscious and stimulated to utilized them and comprehend the positive impacts of e-wallets. Out of the important reasons

that are responsible for non-use of e-wallets security and trust issues are the prominent. Respondents are not persuaded of the use of e-wallets for the reason of rising cyber crimes. While these e-wallets call for either linking them to the concerned Bank Account or transferring the required amount from the concerned Bank Account to the e-wallet; respondents considered it comparably vulnerable to cyber crimes concerning trust and security reasons and legal formalities like the KYC.

Shen et al. (2020) examined the avenues by which fiscal enclosure can be attended in China. Partial Least Square approach and structural Equation Modelling have been applied to examine the associations with fiscal education, internet availability, digitized fiscal commodities use and fiscal enclosure. They found that internet usage has no direct impact on financial inclusion. Internet and digitalized fiscal commodities use act a manifold intermediary function among fiscal education and enclosure. They concluded that to attain the aim of progressing fiscal enclosure, legislators should go ahead of the customer's fiscal education and encourage the usage of digitalized fiscal commodities.

Rekha et al. (2021) conducted a study on digital financial Inclusion, revealed that information and communication technology tools play a significant role in developing an all-inclusive financial system which fosters economic growth. Towards this objective, digital financial inclusion is becoming a critical phenomenon which is likely to increase the ease of access to and availability of formal financial services. Further, an important factor that affects financial development and growth is economic freedom that provides enough options to the people.

Ozili, P.K. (2022) studied on digitized fiscal enclosure, defined digital financial inclusion, and highlighted the objective of digitized fiscal enclosure, the ingredients, the service providers, the instruments, the benefits, the risks and the dogmatic points connected with digitized fiscal enclosure process is more important than its goal. A good deal of advancement required to be done and this will need the utilization of active and novel inventive digitized mechanisms to apply fiscal assistances to cover the requirements of one and all on the way to fiscal enclosure. Legislators should be cautious in choosing a national strategy for digital financial inclusion and its continuous evaluation. Legislators must know the provocations of digitalized fiscal enclosure, and the thresholds of digitalized mechanisms in advancing fiscal enclosure.

Dewi, V. I. (2022) carried out a study on demographic and socioeconomic factors affecting financial literacy and its variables. Multi-variable analysis was employed to investigate financial literacy. It has been concluded that three demographic factors such as age groups, area and gender exaggerated various relations such as experience, knowledge, awareness, financial skills, goal, capability and fiscal assessment. It further more revealed facts of the survey that the socio-economic aspect of expenditure for daily consumption has been affected by various relations among skills and fiscal awareness. The findings suggest that socio-economic and demographic aspects increased financial literacy.

Dubey and Purnanandam (2023) found that digital payments have proven to be highly effective in removing credit delivery bottlenecks and reducing the costs of financial transactions. In the areas facing constraints in credit delivery and higher cost associated with financial transactions, the digital payments were found to have significant impact. Digital payments fill the gaps in financial inclusion especially in areas where there are limited physical presence of conventional banks and financial institutions. Small business entities desirous to

avail credit from formal financial channels, digital payments exhibit greater effectiveness in reducing challenges and impediments.

Mpofu, F. Y. (2024) focused on gender specific issues on financial inclusion and more specifically digitally financial inclusion, has enumerated that women face specific challenges with regard to accessing and using technology. Some of the important aspects pointed out is technically literacy and confidence of women, security and harassment, cost of handset, poor access to information and lack of social networks, gender bias and targeting of customers and time, mobility and decision-making restrictions. The report mentions that certainly digital financial services will aid the women in overcoming various challenges. The fears of women which need to be allayed are safety and security concerns, digital literacy, strong grievance redressal mechanism, women living in poverty having apprehension about using the digital services for small value payments etc.

III. OBJECTIVES

The current article made an attempt to examine the impact of various socio-demographic factors such as (Age group, Gender, Education level, social stratification, Occupation and Annual Family Income) basically on the adoption of digitalized financial services such as (Credit / Debit Card, Pre-paid Card, Internet Banking, UPI, Mobile Wallets and Mobile Banking). There are two dimensions such as rural and urban. However, the study aimed at following basic objectives:

To examine the influence of socio-demographic factors on adoption of digital payment methods in Odisha.

To study the digital divide among people of Odisha for region wise adoption of digital payment methods in Odisha.

IV. HYPOTHESES

Hypothesis: 1

H0: Socio-demographic factors don't have any impact on adopting various digital payment methods.

H1: Socio-demographic factors have impact on adopting various digital payment methods.

Hypothesis: 2

H0: Digital divide does not exist among people of Odisha for digital payments.

H1: Digital divide exists among people of Odisha for digital payments.

V. METHODOLOGY

The current study aims to understand the influence of various socio-demographic factors on the adoption of digital financial services and customer's awareness for various digital payment systems in the state and to generalize it for the country as a whole. In order to accomplish the objectives a mixed research design has been adopted.

Sampling Frame: All the bank customers of the state constitute the population for the study from which only eight districts have been selected on the basis of Crisil Inclusix Score (2018) top two districts from each category have been considered. Angul and Cuttack districts from the 1st category, Baleswar, and Bargarh districts from the 2nd category, Kalahandi, Kandhamal districts from the 3rd category, and Nabarangpur and Malkangiri districts from the 4th category have been considered as the population for the study. Thus, the

sampling frame have been selected by stratified Random sampling. However, the respondents and bank branches have been selected randomly using lottery method.

Sample Size: The sample magnitude has been determined using Cochran's sampling technique. The determined sample size is 384; however, for better result double the determined sample size, (768) has been undertaken. However, only 660 properly filled in responses have been received at an approximate response rate of 86%.

Collection of Data: Both primary and secondary data have been used for the study. However, the study is focused on primary data. A pre validated and structured questionnaire has been used to obtain the data from bank customers. Secondary data were collected from RBI website, World Bank working papers and research series, Finance Ministry websites of Government of India and Government of Odisha, Websites of Economic Survey of India and Economic Survey of Odisha and Census 2011.

Statistical Tools: The collected data have been analysed using software such as STATA, SPSS and Excel. Suitable statistical tools have been used for the purpose of analysis. Percentage and averages are being used widely for the purpose of analysis. Chi-Square test has been administered to test the association between the demographic profiles of the respondents with respect to level of adoption of digital financial services. Cramer's V alongside chi-squared estimates to provide a clearer understanding of effect sizes in studies involving nominal variables.

Pilot Study: A pilot study with 50 as sample size, has been conducted to judge the reliability of the questionnaire and to redesign the final print of the questionnaire. The reliability of the questionnaire has been measured by using the Cronbach alpha value > 0.7 .

VI. DISCUSSION

Table-1 depicts, Credit / Debit Card adoption is highest among those above 60 (43.2%) but lowest in the (18–25) age 18.1%. The (26–45) age shows a moderate adoption rate 28%. Chi-square test ($\chi^2 = 11.322$, $p < 0.05$) indicates significant association for card usage. Prepaid Card usage is almost zero across all age groups. Chi-square value is not significant ($p > 0.05$), indicating no relationship between age and prepaid card usage. Internet banking has been most widely used by the (46–60) age group (33.9%) and Poor adoption among older users (4.5%) above 60 years age group. Chi-square test ($\chi^2 = 17.775$, $p < 0.05$) confirms that age significantly influences internet banking adoption. Men are more likely to use digital payment methods than women. Credit/Debit Card used by 26.6% of men, compared to 17.4% of women. However, the association is not statistically significant.

Prepaid Cards usage is nearly zero for both men and women, confirming no gender influence. Internet Banking used by men (25.3%) which is far more than women (8.7%), and the association is statistically significant ($\chi^2 = 6.215$, $p < 0.05$). Education significantly impacts all digital payment methods, highest usage across all, especially for internet banking (56.2%) by graduates and above. HSC or below, only 0.8% use internet banking, and prepaid card usage is zero. Chi-square values show strong statistical significance, confirming that higher education leads to greater adoption. General category users have the highest adoption across all methods. Credit/Debit Cards used by General (24.6%), OBC (39.2%), SC (15.3%), ST (15.2%). Internet Banking used by General (29.1%), OBC (11.4%), SC (22.0%), ST (21.2%). SC/ST groups have significantly

lower adoption, reinforcing the need for targeted financial inclusion programs. Chi-square test ($p < 0.05$) shows statistical significance for credit/debit cards and internet banking but not for prepaid cards.

Table-1

Profile of Rural Area Customers on Adoption of Credit / Debit Card, Pre-paid Card and Internet Banking for Digital Payment

Socio-Demographic Factors			Credit / Debit Card			Pre-paid Card			Internet Banking		
			Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V
Age (Years)	18-25	N	13	59	11.322* (DF=4)	0	72	8.259 ^{NS} (DF=4)	19	53	17.775* (DF=4)
		%	18.1%	81.9%		0.0%	100.0%		26.4%	73.6%	
	26-35	N	22	69		4	87		27	64	
		%	24.2%	75.8%		4.4%	95.6%		29.7%	70.3%	
	36-45	N	24	60		1	83		13	71	
		%	28.6%	71.4%		1.2%	98.8%		15.5%	84.5%	
	46-60	N	11	48		0	59		20	39	
		%	18.6%	81.4%		0.0%	100.0%		33.9%	66.1%	
	Above 60	N	19	25		0	44		2	42	
		%	43.2%	56.8%		0.0%	100.0%		4.5%	95.5%	
Gender	Male	N	81	223	1.804 ^{NS}	5	299	0.768 ^{NS}	77	227	6.215*
		%	26.6%	73.4%		1.6%	98.4%		25.3%	74.7%	
	Female	N	8	38	0.072 ^{NS}	0	46	0.047 ^{NS}	4	42	0.133*
		%	17.4%	82.6%	(DF=1)	0.0%	100.0%	(DF=1)	8.7%	91.3%	(DF=1)
Education	HSC or below	N	33	89	2.828 ^{NS}	0	122	8.205*	1	121	88.982*
		%	27.0%	73.0%		0.0%	100.0%		0.8%	99.2%	
	Higher Secondary	N	29	110	0.090 ^{NS}	1	138	0.153*	30	109	0.504*
		%	20.9%	79.1%		0.7%	99.3%		21.6%	78.4%	
	Graduation & Above	N	27	62	(DF=2)	4	85	(DF=2)	50	39	(DF=2)
		%	30.3%	69.7%		4.5%	95.5%		56.2%	43.8%	
Social Stratification	General	N	44	135	13.074*	5	174	4.846 ^{NS}	52	127	9.754*
		%	24.6%	75.4%		2.8%	97.2%		29.1%	70.9%	
	OBC	N	31	48	0.193*	0	79	0.118 ^{NS}	9	70	0.167*
		%	39.2%	60.8%		0.0%	100.0%		11.4%	88.6%	
	SC	N	9	50	(DF=3)	0	59	(DF=3)	13	46	(DF=3)
		%	15.3%	84.7%		0.0%	100.0%		22.0%	78.0%	
	ST	N	5	28		0	33		7	26	
		%	15.2%	84.8%		0.0%	100.0%		21.2%	78.8%	
Occupation	Service	N	29	48	51.992*	1	76	1.260 ^{NS}	13	64	27.217*
		%	37.7%	62.3%		1.3%	98.7%		16.9%	83.1%	
	Business	N	26	184	0.385*	4	206	0.060 ^{NS}	67	143	0.279*
		%	12.4%	87.6%		1.9%	98.1%		31.9%	68.1%	
	Daily Worker / No Income	N	34	29	(DF=2)	0	63	(DF=2)	1	62	(DF=2)
		%	54.0%	46.0%		0.0%	100.0%		1.6%	98.4%	
Income (Rs. Lakh/ Annum)	Below Rs. 2.5	N	40	158	9.749*	3	195	2.333 ^{NS}	21	177	62.454*
		%	20.2%	79.8%		1.5%	98.5%		10.6%	89.4%	
	2.5 – 5.0	N	25	43	0.167*	2	66	0.082 ^{NS}	20	48	0.422*
		%	36.8%	63.2%		2.9%	97.1%		29.4%	70.6%	
	5.0 – 10.0	N	9	32	(DF=3)	0	41	(DF=3)	12	29	(DF=3)
		%	22.0%	78.0%		0.0%	100.0%		29.3%	70.7%	
	Above 10	N	15	28		0	43		28	15	
		%	34.9%	65.1%		0.0%	100.0%		65.1%	34.9%	

N.B: - * - Significant at 5% Level ($P < 0.05$), NS – Not Significant at 5% Level ($P > 0.05$). Cr. V – Cramer's V.

Source: Primary data collected by the researcher

Business owners and service employees lead in digital payment adoption. Credit/Debit Cards used by service sector (37.7%), Business (12.4%), Daily workers (54.0%). Internet banking is used by Business owners (31.9%) the most, while daily workers have nearly zero adoption. Chi-square test ($p < 0.05$) confirms a significant association between occupation and digital payment adoption.

Higher income groups (>10 lakh) show the highest adoption rates. Credit/Debit Card used by 34.9% (above 10 lakh), 20.2% (below 2.5 lakh). Internet Banking Used by 65.1% of users earning >10 lakh used it, while only 10.6% of low-income individuals use it. Chi-square values are highly significant, confirming that income plays a crucial role in digital payment adoption.

Table-2

Profile of Rural Area Customers on Adoption of UPI, Mobile Wallets and Mobile Banking for Digital Payment

Socio-Demographic Factors			UPI			Mobile Wallets			Mobile Banking		
			Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V
Age (Years)	18-25	N	38	34	40.647*	58	14	72.641*	17	55	17.425*
		%	52.8%	47.2%		80.6%	19.4%		23.6%	76.4%	
	26-35	N	47	44	0.341*	66	25	0.456*	32	59	0.223*
		%	51.6%	48.4%		72.5%	27.5%		35.2%	64.8%	
	36-45	N	29	55	(DF=4)	54	30	(DF=4)	15	69	(DF=4)
		%	34.5%	65.5%		64.3%	35.7%		17.9%	82.1%	
	46-60	N	23	36		26	33		14	45	
		%	39.0%	61.0%		44.1%	55.9%		23.7%	76.3%	
	Above 60	N	0	44		4	40		2	42	
		%	0.0%	100.0%		9.1%	90.9%		4.5%	95.5%	
Gender	Male	N	132	172	17.772*	182	122	0.186 ^{NS}	77	227	8.015*
		%	43.4%	56.6%	0.225*	59.9%	40.1%	0.023 ^{NS}	25.3%	74.7%	0.151*
	Female	N	5	41		26	20		3	43	
		%	10.9%	89.1%	(DF=1)	56.5%	43.5%	(DF=1)	6.5%	93.5%	(DF=1)
Education	HSC or Below	N	20	102	72.662*	33	89	83.909*	4	118	65.287*
		%	16.4%	83.6%	0.456*	27.0%	73.0%	0.490*	3.3%	96.7%	0.432*
	Higher Secondary	N	51	88		101	38		31	108	
		%	36.7%	63.3%	(DF=2)	72.7%	27.3%	(DF=2)	22.3%	77.7%	(DF=2)
	Graduation & Above	N	66	23		74	15		45	44	
		%	74.2%	25.8%		83.1%	16.9%		50.6%	49.4%	
Social Stratification	General	N	88	91	15.542*	123	56	16.724*	47	132	5.765 ^{NS}
		%	49.2%	50.8%	0.211*	68.7%	31.3%	0.219*	26.3%	73.7%	0.128 ^{NS}
	OBC	N	23	56		35	44		11	68	
		%	29.1%	70.9%	(DF=3)	44.3%	55.7%	(DF=3)	13.9%	86.1%	(DF=3)
	SC	N	16	43		29	30		16	43	
		%	27.1%	72.9%		49.2%	50.8%		27.1%	72.9%	
	ST	N	10	23		21	12		6	27	
		%	30.3%	69.7%		63.6%	36.4%		18.2%	81.8%	
Occupation	Service	N	25	52	26.430*	50	27	24.433*	15	62	14.799*
		%	32.5%	67.5%	0.275*	64.9%	35.1%	0.264*	19.5%	80.5%	0.206*
	Business	N	103	107		138	72		61	149	
		%	49.0%	51.0%	(DF=2)	65.7%	34.3%	(DF=2)	29.0%	71.0%	(DF=2)
	Daily Worker / No Income	N	9	54		20	43		4	59	
		%	14.3%	85.7%		31.7%	68.3%		6.3%	93.7%	
Income (Rs. Lakh/	Below Rs. 2.5	N	46	152	89.612*	97	101	23.687*	25	173	32.519*
		%	23.2%	76.8%		49.0%	51.0%		12.6%	87.4%	

Annum)	2.5 – 5.0	N	28	40	0.506* (DF=3)	48	20	0.260* (DF=3)	21	47	0.305* (DF=3)
		%	41.2%	58.8%		70.6%	29.4%		30.9%	69.1%	
	5.0 – 10.0	N	20	21		27	14		13	28	
		%	48.8%	51.2%		65.9%	34.1%		31.7%	68.3%	
	Above 10	N	43	0		36	7		21	22	
		%	100.0%	0.0%		83.7%	16.3%		48.8%	51.2%	

N.B: - * - Significant at 5% Level ($P < 0.05$), NS – Not Significant at 5% Level ($P > 0.05$). Cr. V – Cramer's V.

Source: Primary data collected by the researcher

Table-2 presents data on the use of UPI, mobile wallets and mobile banking by rural customers, categorized by socio-demographic factors. Younger groups (18-25 and 26-35) show the highest usage of UPI (52.8% and 51.6%) and mobile wallets (80.6% and 72.5%). Usage declines with age, with 100% of those above 60 not using UPI and 90.9% avoiding mobile wallets.

Mobile banking follows a similar trend, with the (26-35 years) group having the highest adoption (35.2%), while older groups have minimal usage. Chi-square values indicate strong associations ($p < 0.05$) between them. (Cr. V = 0.456) suggest a moderate to strong relationship.

Males use UPI (43.4%) and mobile wallets (59.9%) more than females (10.9% for UPI, 56.5% for wallets). Mobile banking shows larger gap, 25.3% of males use it compared to just 6.5% of females. Gender differences are significant for UPI and mobile banking, but not significant for mobile wallets. Peak association is observed (Cr. V < 0.25), indicating gender differences.

Higher education levels strongly correlate with digital payment adoption. Graduates and above have the highest usage across all three methods (74.2% for UPI, 83.1% for wallets, 50.6% for banking). Those with HSC or below has the lowest adoption (16.4% for UPI, 27% for wallets, 3.3% for banking). Strong significant relationships exist for all three payment methods ($p < 0.05$). Strongest for mobile wallets (Cr. V = 0.490), indicating education as a key driver. General category has the highest digital payment adoption across all methods. OBC, SC, and ST categories have lower usage, especially for mobile banking which is significant for UPI and mobile wallets but not significant for mobile banking.

Business men have the highest use (49% for UPI, 65.7% for wallets, 29% for banking). Daily workers have the lowest adoption (14.3% for UPI, 31.7% for wallets, 6.3% for banking). All three relationships are significant. Moderate, with mobile wallets having the strongest effect.

Higher-income groups (above 10 lakh) have 100% UPI adoption and the highest mobile banking usage (48.8%). Lower-income groups (below 2.5 lakh) show minimal digital payment adoption. Strong associations are observed for all methods ($p < 0.05$). Strongest for UPI (Cr. V = 0.506), meaning income has a strong impact.

Young, educated, and higher-income individuals are the primary users of digital payments. Gender disparity exists, with females lagging in UPI and mobile banking usage. Education and income are the strongest predictors of digital payment adoption. Rural business owners use digital payments more than daily wage earners. Older age groups and lower-income segments show digital exclusion, highlighting a need for targeted financial literacy programs.

Table-3 examines the profile of urban area customers on their present use of credit/debit cards, prepaid cards, and internet banking for digital payments. Highest use is observed in the 26-35 age groups (30.2%) and above

60 (32%). Chi-square test ($\chi^2 = 4.803$, $p > 0.05$) is not significant, meaning age does not significantly impact card use. Prepaid Card use is extremely low (0–3.7%) across all age groups. Chi-square test ($\chi^2 = 4.093$, $p > 0.05$) is not significant, confirming age has no major effect. Internet banking use is highest in the 26-35 age groups (37.9%) and lowest in above 60 groups (8%).

Chi-square test ($\chi^2 = 14.950$, $p < 0.05$) indicates a significant association, meaning age influences internet banking use. Men use digital payment methods significantly more than women. Men (20%) use Credit/Debit Card far less than women (56%), and the association is statistically significant ($\chi^2 = 28.385$). Prepaid Cards use remains extremely low for both genders (1.2% men, 4% women), with no significant association. Men (30%) use internet banking more than women (14%), and the association is statistically significant ($\chi^2 = 5.394$, $p < 0.05$).

Education significantly impacts digital payment adoption. Graduates and above made highest use of credit/debit cards (37.9%) and internet banking (44.7%). HSC or below made lowest use, with only 4.8% using internet banking and 14.3% using credit/debit cards. Chi-square tests show significant association for both credit/debit cards ($\chi^2 = 13.154$, $p < 0.05$) and internet banking ($\chi^2 = 32.059$, $p < 0.05$).

General category users have the highest use across all methods. Credit/Debit Cards is highest adoption in SC (32.3%) and OBC (29%), while ST has the lowest (20%). General (33.5%), SC (22.6%), ST (10%) used Internet Banking. Chi-square test ($\chi^2 = 8.466$, $p < 0.05$) for internet banking shows statistical significance, but not for credit/debit or prepaid cards.

Service holders are the most active users of digital payments. Service sector (35.1%), Business (17%), Daily Workers (56%) use Credit/Debit Cards. Service (37.1%), Business (23.4%), Daily Workers (20%) use internet banking. Chi-square tests confirm significant associations for all three digital payment types ($p < 0.05$).

Higher income groups (>10 lakh) have the highest adoption rates. Credit/Debit Cards is highest in above 10 lakh income group (48.4%), lowest in below 2.5 lakh group (15%). 77.4% of users earning >10 lakh uses internet banking, while only 11.1% of low-income individuals use it. Chi-square values are highly significant ($p < 0.05$), confirming income plays a crucial role in digital payment adoption.

Table-3

Profile of Urban Area Customers on Adoption of Credit / Debit Card, Pre-paid Card and Internet Banking for Digital Payment

Socio-Demographic Factors		Credit / Debit Card			Pre-paid Card			Internet Banking		
		Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V
Age (Years)	18-25	N	19	62	3	78	4.093 ^{NS}	21	60	14.950*
		%	23.5%	76.5%		3.7%		25.9%	74.1%	
	26-35	N	35	81	2	114	0.115 ^{NS}	44	72	0.220*
		%	30.2%	69.8%		1.7%		37.9%	62.1%	
	36-45	N	12	34	0	46	(DF=4)	12	34	(DF=4)
		%	26.1%	73.9%		0.0%		26.1%	73.9%	
	46-60	N	6	36	0	42	(DF=4)	6	36	(DF=4)
		%	14.3%	85.7%		0.0%		14.3%	85.7%	
	Above 60	N	8	17	0	25	(DF=4)	2	23	(DF=4)
		%	32.0%	68.0%		0.0%		8.0%	92.0%	
Gender	Male	N	52	208	3	257	2.141 ^{NS}	78	182	5.394*
		%	20.0%	80.0%		1.2%		30.0%	70.0%	
	Female	N	28	22	2	48	0.083 ^{NS}	7	43	0.132*

	Female	%	56.0%	44.0%	(DF=1)	4.0%	96.0%	(DF=1)	14.0%	86.0%	(DF=1)
Education	HSC or Below	N	9	54	13.154*	0	63	1.304 ^{NS}	3	60	32.059*
		%	14.3%	85.7%		0.0%	100.0%		4.8%	95.2%	
	Higher Secondary	N	32	112	0.206*	3	141	0.065 ^{NS}	36	108	0.322*
		%	22.2%	77.8%		2.1%	97.9%		25.0%	75.0%	
	Graduation & Above	N	39	64	(DF=2)	2	101	(DF=2)	46	57	(DF=2)
		%	37.9%	62.1%		1.9%	98.1%		44.7%	55.3%	
Social Stratification	General	N	40	136	2.732 ^{NS}	4	172	1.663 ^{NS}	59	117	8.466*
		%	22.7%	77.3%		2.3%	97.7%		33.5%	66.5%	
	OBC	N	18	44	0.094 ^{NS}	1	61	0.073 ^{NS}	11	51	0.165*
		%	29.0%	71.0%		1.6%	98.4%		17.7%	82.3%	
	SC	N	20	42	(DF=3)	0	62	(DF=3)	14	48	(DF=3)
		%	32.3%	67.7%		0.0%	100.0%		22.6%	77.4%	
	ST	N	2	8	(DF=3)	0	10	(DF=3)	1	9	(DF=3)
		%	20.0%	80.0%		0.0%	100.0%		10.0%	90.0%	
Occupation	Service	N	34	63	23.812*	1	96	6.991*	36	61	6.795*
		%	35.1%	64.9%		1.0%	99.0%		37.1%	62.9%	
	Business	N	32	156	0.277*	2	186	0.150*	44	144	0.148*
		%	17.0%	83.0%		1.1%	98.9%		23.4%	76.6%	
	Daily Worker / No Income	N	14	11	(DF=2)	2	23	(DF=2)	5	20	(DF=2)
		%	56.0%	44.0%		8.0%	92.0%		20.0%	80.0%	
Income (Rs. Lakh/Annum)	Below Rs. 2.5	N	23	130	21.259*	2	151	1.435 ^{NS}	17	136	62.952*
		%	15.0%	85.0%		1.3%	98.7%		11.1%	88.9%	
	2.5 – 5.0	N	22	44	0.262*	2	64	0.068 ^{NS}	23	43	0.451*
		%	33.3%	66.7%		3.0%	97.0%		34.8%	65.2%	
	5.0 – 10.0	N	20	40	(DF=3)	1	59	(DF=3)	21	39	(DF=3)
		%	33.3%	66.7%		1.7%	98.3%		35.0%	65.0%	
	Above 10	N	15	16	(DF=3)	0	31	(DF=3)	24	7	(DF=3)
		%	48.4%	51.6%		0.0%	100.0%		77.4%	22.6%	

N.B: - * - Significant at 5% Level ($P < 0.05$), NS – Not Significant at 5% Level ($P > 0.05$). Cr. V – Cramer's V.
Source: Primary data collected by the researcher

Table-4
Profile of Urban Area Customers on Adoption of UPI, Mobile Wallets and Mobile Banking for Digital Payment

Socio-Demographic Factors			UPI			Mobile Wallets			Mobile Banking		
			Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V	Yes	No	χ^2 Cr. V
Age (Years)	18-25	N	32	49	21.564*	66	15	30.580*	24	57	19.438*
		%	39.5%	60.5%		81.5%	18.5%		29.6%	70.4%	
	26-35	N	68	48	0.264*	99	17	0.314*	47	69	0.250*
		%	58.6%	41.4%		85.3%	14.7%		40.5%	59.5%	
	36-45	N	20	26	(DF=4)	34	12	(DF=4)	9	37	(DF=4)
		%	43.5%	56.5%		73.9%	26.1%		19.6%	80.4%	
	46-60	N	13	29	(DF=4)	23	19	(DF=4)	6	36	(DF=4)
		%	31.0%	69.0%		54.8%	45.2%		14.3%	85.7%	
	Above 60	N	4	21	(DF=4)	11	14	(DF=4)	2	23	(DF=4)
		%	16.0%	84.0%		44.0%	56.0%		8.0%	92.0%	
Gender	Male	N	123	137	6.339*	191	69	2.495 ^{NS}	81	179	6.070*
		%	47.3%	52.7%		73.5%	26.5%		31.2%	68.8%	

	Female	N	14	36	0.143*	42	8	0.090 ^{NS}	7	43	0.140*
		%	28.0%	72.0%	(DF=1)	84.0%	16.0%	(DF=1)	14.0%	86.0%	(DF=1)
Education	HSC or Below	N	8	55	59.372*	29	34	39.076*	4	59	25.484*
		%	12.7%	87.3%		46.0%	54.0%		6.3%	93.7%	
	Higher Secondary	N	55	89	0.438*	113	31	0.355*	40	104	0.287*
		%	38.2%	61.8%		78.5%	21.5%		27.8%	72.2%	
	Graduation & Above	N	74	29	(DF=2)	91	12	(DF=2)	44	59	(DF=2)
		%	71.8%	28.2%		88.3%	11.7%		42.7%	57.3%	
Social Stratification	General	N	90	86	11.602*	133	43	0.894 ^{NS}	61	115	9.061*
		%	51.1%	48.9%		75.6%	24.4%		34.7%	65.3%	
	OBC	N	18	44	0.193*	48	14	0.054 ^{NS}	11	51	0.171*
		%	29.0%	71.0%		77.4%	22.6%		17.7%	82.3%	
	SC	N	27	35	(DF=3)	44	18	(DF=3)	15	47	(DF=3)
		%	43.5%	56.5%		71.0%	29.0%		24.2%	75.8%	
	ST	N	2	8		8	2		1	9	
		%	20.0%	80.0%		80.0%	20.0%		10.0%	90.0%	
Occupation	Service	N	49	48	12.157*	78	19	6.352*	36	61	7.435*
		%	50.5%	49.5%		80.4%	19.6%		37.1%	62.9%	
	Business	N	85	103	0.198*	141	47	0.143*	49	139	0.155*
		%	45.2%	54.8%		75.0%	25.0%		26.1%	73.9%	
	Daily Worker / No Income	N	3	22	(DF=2)	14	11	(DF=2)	3	22	(DF=2)
		%	12.0%	88.0%		56.0%	44.0%		12.0%	88.0%	
Income (Rs. Lakh/Annum)	Below Rs. 2.5	N	39	114	65.074*	97	56	26.091*	21	132	56.774*
		%	25.5%	74.5%		63.4%	36.6%		13.7%	86.3%	
	2.5 – 5.0	N	36	30	0.458*	55	11	0.290*	26	40	0.428*
		%	54.5%	45.5%		83.3%	16.7%		39.4%	60.6%	
	5.0 – 10.0	N	31	29	(DF=3)	50	10	(DF=3)	17	43	(DF=3)
		%	51.7%	48.3%		83.3%	16.7%		28.3%	71.7%	
	Above 10	N	31	0		31	0		24	7	
		%	100.0%	0.0%		100.0%	0.0%		77.4%	22.6%	

N.B: - * - Significant at 5% Level ($P < 0.05$), NS – Not Significant at 5% Level ($P > 0.05$). Cr. V – Cramer's V.

Source: Primary data collected by the researcher

Table-4 presents the profile of urban area customers based on their use of UPI, mobile wallets, and mobile banking for digital payments, categorized by socio-demographic factors. Age group (26–35) has the highest UPI adoption (58.6%), while those above 60 have the lowest (16%). The Chi-square test ($\chi^2 = 21.564$, $p < 0.05$) indicates significant variation in UPI usage across age groups. Cramer's V (0.264) suggests a very strong association. For Mobile Wallets again, the 26–35 group leads (85.3%), while the above-60 group lags (44%). The relationship is statistically significant ($\chi^2 = 30.580$, $p < 0.05$). For Mobile Banking, the younger age groups (18–35) show higher adoption rates, with the oldest group (above 60) showing only 8% usage.

UPI Usage: Males (47.3%) use UPI more than females (28%), and this difference is statistically significant ($\chi^2 = 6.339$, $p < 0.05$). No significant difference between genders ($\chi^2 = 2.495$, $p > 0.05$) has been observed for Mobile Wallets. For Mobile Banking, Males (31.2%) are more likely to use mobile banking than females (14%), with a statistically significant association ($\chi^2 = 6.070$, $p < 0.05$).

UPI Usage has strong correlation with education level. Graduates have the highest usage (71.8%), while those with HSC or below have the lowest (12.7%). The association is strong ($\chi^2 = 59.372$, Cramer's V = 0.438). Mobile Wallets have similar trend, with graduates leading (88.3%) and lower-educated groups lagging

(46.0%). Mobile Banking has very low adoption among HSC or below (6.3%), compared to graduates (42.7%). UPI Usage for general category has the highest adoption (51.1%), while ST (Scheduled Tribe) has the lowest (20.0%). The difference is significant ($\chi^2 = 11.602$, $p < 0.05$). For Mobile Wallets and banking OBC, SC, and ST show lower adoption rates compared to the general category.

Service professionals (50.5%) and business owners (45.2%) have higher adoption of UPI usage than daily workers (12.0%). For Mobile Wallets similar trend has been observed with business owners having the highest usage (75.0%). Daily workers have the lowest adoption (12.0%) of Mobile Banking, suggesting that income stability influences digital payment adoption.

The highest income group (Above 10 lakh) has 100% UPI adoption, while the lowest income group (Below 2.5 lakh) has only 25.5% adoption UPI Usage. Strong correlation—higher income leads to higher adoption (100% usage in the highest bracket) for Mobile Wallets. The highest-income group also dominates mobile banking usage (77.4% adoption).

VII. HYPOTHESES TESTING

As per the test results of hypothesis the following outcomes have been observed

Hypothesis: 1

H0: Socio-demographic factors don't have any impact on adopting various digital payment methods.

H1: Socio-demographic factors have impact on adopting various digital payment methods.

Hypothesis: 2

H0: Digital divide does not exist among people of Odisha.

H1: Digital divide exists among people of Odisha.

From the table depicted below, it has been concluded that all the socio demographic variables such as Age Group, Gender, Social Stratification, Occupation and Annual Income are significantly associated with UPI and Internet banking in rural areas where as all the socio demographic variables in urban areas are significantly associated with UPI and Internet banking and mobile banking.

Age group is significantly associated with all the digital payment methods except prepaid cards in rural areas. Similarly, it is significantly associated with all the digital payment methods except credit/debit cards and prepaid cards in urban areas. Gender is significantly associated with internet banking, UPI and mobile banking in rural areas. Whereas it is significantly associated with credit/debit cards, internet banking, UPI and mobile banking in urban areas.

Education is significantly associated with all the digital payment methods except credit/debit cards in rural areas. Similarly, it is significantly associated with all the digital payment methods except prepaid cards in urban areas. Social stratification is significantly associated with all the digital payment methods except prepaid cards mobile banking in rural areas. Similarly, it is significantly associated with internet banking, UPI and mobile banking in urban areas.

Occupation is significantly associated with all the digital payment methods except prepaid cards in rural areas. Similarly, it is significantly associated with all the digital payment methods in urban areas. Income level is significantly associated with all the digital payment methods except prepaid cards in both rural and urban areas.

Table-5
Findings based on hypothesis testing

Factors	Payment Method	Outcomes in Rural Areas	Outcomes in Urban Areas	Statistical tools used
Age Group (Years)	Credit / Debit Card Pre-paid Card Internet Banking UPI Mobile Wallets Mobile Banking	Significant Not significant significant Significant Significant Significant Significant	Not significant Not significant significant Significant Significant Significant Significant	Chi-square test and Cramer's V
Gender	Credit / Debit Card Pre-paid Card Internet Banking UPI Mobile Wallets Mobile Banking	Not significant Not significant significant Significant Significant Not significant significant Significant	Significant Not significant significant Significant Significant Not significant Significant	Chi-square test and Cramer's V
Education	Credit / Debit Card Pre-paid Card Internet Banking UPI Mobile Wallets Mobile Banking	Not significant significant Significant Significant Significant Significant Significant	Significant Not significant significant Significant Significant Significant Significant	Chi-square test and Cramer's V
Social Stratification	Credit / Debit Card Pre-paid Card Internet Banking UPI Mobile Wallets Mobile Banking	Significant Not significant significant Significant Significant Significant Not significant significant	Not significant Not significant significant Significant Significant Significant Not significant significant Significant	Chi-square test and Cramer's V

Occupation	Credit / Debit Card	Significant	Significant	Chi-square test and Cramer's V
	Pre-paid Card	Not significant	Significant	
	Internet Banking	Significant	Significant	
	UPI	Significant	Significant	
	Mobile Wallets	Significant	Significant	
	Mobile Banking	Significant		
Income (Rs. Lakh/ annum)	Credit / Debit Card	Significant	Significant	Chi-square test and Cramer's V
	Pre-paid Card	Not significant	Not significant	
	Internet Banking	Significant	Significant	
	UPI	Significant	Significant	
	Mobile Wallets	Significant	Significant	
	Mobile Banking	Significant	Significant	

VIII. SUGGESTIONS AND CONCLUSION

Chi-square tests (χ^2) confirm that age, education, income, and occupation significantly affect digital payment adoption. Cramer's V values indicate moderate to strong associations, particularly for education and income. Prepaid cards have almost zero adoption, making them the least relevant digital payment method for rural users.

Digital literacy programs should focus on lower-income and less-educated groups to improve credit/debit card and internet banking usage. Targeted initiatives for women can help reduce the gender gap in digital payments. Financial inclusion programs should focus on SC/ST/OBC groups, as they have lower adoption rates. Daily workers and lower-income groups need better access to banking facilities and awareness campaigns on the benefits of digital payments. Prepaid cards are largely unused and may require different marketing strategies or integration with other financial services.

Young, educated, and higher-income individuals are the primary users of digital payments. Gender disparity exists, with females lagging in UPI and mobile banking usage. Education and income are the strongest predictors of digital payment adoption. Rural business owners use digital payments more than daily wage earners. Older age groups and lower-income segments show digital exclusion, highlighting a need for targeted financial literacy programs.

Chi-square values (χ^2) confirm that education, income and occupation significantly affect digital payment adoption. Cramer's V values indicate moderate to strong associations for education and income. Prepaid cards remain the least used digital payment method. Men are more active in internet banking, while women have higher credit/debit card usage. Financial institutions should tailor strategies accordingly. Prepaid cards have

almost zero adoption, suggesting the need for re-evaluation or better integration with banking services. Employees and high-income groups lead digital payment adoption, highlighting a gap for business owners and daily wage workers. Caste-based financial inclusion programs should be promoted, as General and OBC groups have higher adoption than SC/ST.

Young, educated, high-income, and male customers are more likely to use UPI, mobile wallets, and mobile banking. Older adults (Above 60), lower-income, and less-educated individuals show low digital payment adoption. Professionals and business owners use digital payments more than daily workers. Mobile banking has the lowest adoption rate across all groups, indicating a preference for UPI and wallets over traditional mobile banking.

IX. REFERENCES

- [1] Crisil. (2018). Crisil Inclusix. Vol. IV. [https:// www.crisil.com/ content/ crisil.com/en/home/our-analysis/ publications/ crisil-inclusix.html](https://www.crisil.com/content/crisil.com/en/home/our-analysis/publications/crisil-inclusix.html).
- [2] Cull, R., Ehrbeck, T., &Holle, N. (2014). Financial inclusion and development: Recent impact evidence. Focus Note, 92(April), 1–12.
- [3] Demirguc-Kunt, A., Klapper, L., Singar, D., Ansar, S. and Hess, J. (2017). Measuring Financial Inclusion and Fintech Revolution. World Bank Global Findex Database.
- [4] Dewi, V.I. (2022). How do demographic and socioeconomic factors affect financial literacy and its variables? Cogent Business and Management. Volume-9, 2022, Issue 1.
- [5] Dubey, T. S., and Purnanandam, A. (2023). Can cashless payments spur economic growth? [https://ssrn.com/ abstract=4373602](https://ssrn.com/abstract=4373602)
- [6] Dupas, P., & Robinson, J. (2013). Why don't the poor save more? Evidence from health savings experiments. American Economic Review, 103(4), 1138–1171. [https:// doi.org/ 10.1257/aer.103.4.1138](https://doi.org/10.1257/aer.103.4.1138)
- [7] Durai, T., & Stella, G. (2019). Digital finance and its impact on financial inclusion. Journal of Emerging Technologies and Innovative Research, 6(1), 122–127.
- [8] Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and FinTech: Current research and future research directions. Journal of Business Economics, 87(5), 537–580. <https://doi.org/10.1007/s11573-017-0852-x>
- [9] Jain, M., and Sabharwal, P. (2019). A study of relationship between demographic variables and usage of e-wallets. Delhi Business Review, 20(2), 49-55.
- [10] Kabakova, O. and Plaksenkov, E. (2018). Analysis of factors affecting financial inclusion: Ecosystem view. Journal of Business Research. Elsevier, vol. 89(C), pages 198-205.
- [11] Mpofu, F. Y. (2024). Industry 4.0 in Finance, Digital Financial Services and Digital Financial Inclusion in Developing Countries: Opportunities, Challenges, and Possible Policy Responses. International Journal of Economics and Financial Issues, 14(2), 120–135. <https://doi.org/10.32479/ijefi.15081>
- [12] Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4), 329–340.

- [13] Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340.
- [14] Ozili, P. K. (2021). Financial inclusion research around the world: A review. *Forum for Social Economics*, 50(4), 457–479.
- [15] Ozili, P. K. (2022). Digital financial inclusion. *Emerald Studies in Finance, Insurance, and Risk Management*. <https://ssrn.com/abstract=4086856>
- [16] Rekha, G., Rajamani, K. and Resmi G. (2021). Digital Financial Inclusion, Economic Freedom, Financial Development, And Growth: Implications from A Panel Data Analysis. *ADBI Working Paper*.
- [17] Salodkar, A., Morey, K., Shirbhate, M. (2015). Electronic Wallet. *International Research Journal of Engineering and Technology (IRJET)*, Volume 02, Issue 9.
- [18] Shen, Y., Hueng, C. J., and Hu, W. (2020). Using digital technology to improve financial inclusion in China. *Applied Economics Letters*, Volume 27, Issue 1.
- [19] Siddik, M. N. A., & Kabiraj, S. (2020). Digital finance for financial inclusion and inclusive growth. In *Digital Transformation in Business and Society* (pp. 155–168). Palgrave Macmillan.

