

## Choice of Payment Pattern by the Households: A Survey-Based Approach

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### JEL Classification

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**Abstract:** The heterogeneous choice pattern of consumption is influenced by the nature of the payment system, including liquidity, availability, acceptance, and usage costs. Consumers' payment patterns shift from traditional forms to advanced payment methods. The study wants to examine the choice of payment modes for purchasing different products and services and also to find out which factors are influencing the use of UPI mode. A multistage stratified simple random sampling method was applied to select households. It is found that cash is the most preferable mode of payment followed by UPI. However, in the case of durable items, net banking is the preferred mode of payment. From the correlation analysis it is found that, the use of UPI mode is statistically correlated with the level of income, age and use of smart phone and computer. Further, the regression result reveals that the income level, use of both smart phone and computer are the factors that influencing the use of UPI.

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## 1. Introduction

Consumers' payment patterns have changed over the years, both in the world and in India. In the 1900s, people used cash and cheques (Evans & Schmalensee, 2005), and before the evolution of money and cheques, people used the barter system for their transactions. Now, the payment mode has shifted from cash-based and paper-based to cashless. The payment system is rapidly changing (Simatele & Mbedzi, 2021) in an evolutionary process with the changing behaviour of consumers. It is predicted that the economy is going to be cashless and that cash will die (Arvidsson & Markendahl, 2014; Carton & Hedman, 2013; Hedman, 2012) in future.

In our regular transactions, we need different modes of payment for various purposes. After various digital payment modes were introduced, the use of cash payment relatively declined. But cash still plays the primary role (Simatele & Mbedzi, 2021) in the demand and supply side of the transaction process (Arango-Arango & Suarez-Ariza, 2020; Flannigan & Satib, 2017; Bech et al., 2018; Arango et al., 2015). Here, we might wonder whether there are any unique attributes for which it has yet to be enhanced by other forms of payment, where other payment instruments have many incentives like discounts, rewards, cashback offers, etc. or any other reasons for more use of cash. The foremost reason is that cash transaction is the preferred payment system due to its ease of use, universal acceptance, and user behaviours (Aurazo & Vega, 2021; Rybina, 2021).

The digital modes of payment are the best alternative payment system (Schmiedel et al., 2012; Arango & Taylor, 2008); that create more significant opportunities, such as speedier, easier, lower cost of their functioning, security, saves time and manpower, etc. (Swiecka et al., 2021; Shree et al., 2021; Rybina, 2021; Aurazo & Vega, 2021). Use of digital payment modes may bring transparency in government system, reduces corruption. Financial inclusion is an indicator of economic development through increase in monetisation, decrease in volume of hoarding and flow of fund into the banking system. Digitisation may help the public to access more volume of credit. Use of digital modes not only helps

for easy transaction but also help to increase in efficiency and productivity of both financial system and real sector.

## 2. Literature Review

Cash is a preferable payment instrument (Simatele & Mbedzi, 2021) for consumers due to its wide acceptance nature and ease of use. But now, consumers substitute debit cards and cash for credit cards because of the incentive programmes. Males prefer credit cards over debit cards in consumption, but females do not. It is not only males but also educated people who choose to use credit cards in time of consumption (Arango et al., 2015). People also want to pay for identical products with debit cards rather than cash. For beer and coffee, bids were substantially higher for cards than for cash (Runnemark et al., 2015). Compared to debit cards, consumers with formal jobs are more likely to pay in m-payment because most of them are receiving their salaries and pay through bank transfers. Informal sector workers purchase their goods by using cash (Simatele & Mbedzi, 2021).

Further, consumers prefer to use cash in low-value transactions such as paying for tickets, hiring domestic help, hiring contractors, and receiving healthcare services. For the purchase of food, apparel, shoes, movies, theatres, fitness centres, leisure activities, and cultural events, cards are used more frequently. Payment cards or stick cards are used to make high-value purchases like televisions, radios, and household goods (Swiecka et al., 2021). The choice of payment systems differs in various places. Consumers most often pay cash in small markets and saloons or parlours. Consumers prefer to pay with cards while shopping in malls, gas stations, and stores, which have discount opportunities for using cards. In online shopping, consumers prefer fast transfer instruments or cash on delivery (Swiecka et al., 2021). The number of cash transactions made by respondents has noticeably decreased, and digital payments are widely used. Respondents oppose making cash mode and suggest that others use only digital forms of payment. Even though digital payments are widely used, they believe that in the future, technologies guaranteeing anonymity in digital payments will proliferate (Szumski, 2022).

The development of an internal electronic payment system, both in banking and postal services, allowed customers to use such a facility at an affordable price. Therefore, customers mostly use electronic modes of payment, such as bill payment and employee payroll payment, due to convenience (Humphrey et al., 1996). Previous studies have focused on factors determining digital payment and the consumption patterns of consumers in digital payment. The novelty of this study is that it relates to various modes of payment for different goods and services and which factors are influencing the mode of UPI in particular.

## 3. Objectives of the study

- To examine the choice of payment modes for purchasing different products and services.
- To find out the factors that are influencing the use of UPI.

## 4. Research Methodology

The study is based on only primary data sources. A multi-stage stratified simple random sampling method has been applied to select the 440 households from two districts of Odisha. These 440 households represent geographical locations, such as rural and urban, across different social groups and literacy rates.

The variables are different modes of payment, such as cash and digital payments like debit cards, credit cards, UPI, and net banking's, etc. The goods and services taken for the study are divided into three broad categories, namely, (a) Food items, (b) Consumables and Services items, and (c) Durable Goods (NSS, 2022-23).

Food items like vegetables and non-vegetable articles, dairy products, snacks and tiffin, beverages, and grocery items are used daily. Under consumable and service items viz petrol, saloon and parlour, fees of school and tuition, stationery items of office, books, footwear, cosmetics, dress materials, mobile and television recharge, newspaper, bills and premiums, house service payment, liquified petroleum gas, repairing services, child product, medical services, diagnostic and medicines, house construction materials, restaurant, travel, payment to friends and relatives, gift and donation and rent. Under durable assets, we have taken only vehicles and electronic products. Other products have been ignored due to the very low response from the surveyed households. To analyse the data, we have applied descriptive statistics such as percentages, mean and standard deviation, etc., and we have also applied correlation and regression to find the relationship between the value of UPI with income level, education, age of the respondent, average distance, members of the family, marital status, and users of mobile and computers. Here we have taken only UPI mode of digital payment because most of households are using this mode compare to other modes of payment in our study areas.

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A multiple regression model is used to evaluate the influence of socioeconomic factors on UPI payments. The multiple regression model is a type of model that has one dependent variable and multiple independent variables. This model is formulated as

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \epsilon_i$$

Where  $Y_i$  = Value of UPI

$X_{1i}$  = No. of Members

$X_{2i}$  = Marital Status

$X_{3i}$  = Mobile and computer Users

$X_{4i}$  = Average Distance from ATM and Banks

$X_{5i}$  = Income

$X_{6i}$  = Age

$X_{7i}$  = Education

$\alpha$ ,  $\beta$ 's are the intercept and regression coefficients

$\epsilon$  is the error term

To normalise the data, we have taken the log form in value of UPI payment, income, age, and education.

### 5. Data analysis

The study has tried to measure the use of different modes of payment, including cash, by the surveyed households when purchasing goods and services in rural and urban areas.

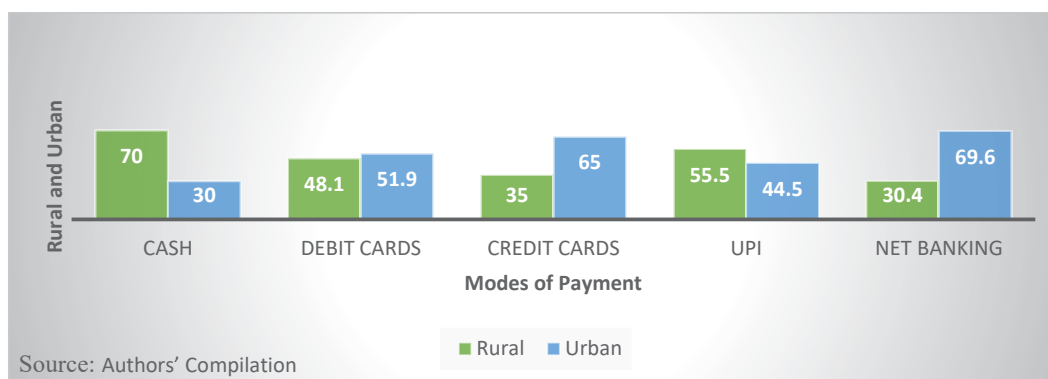
**Table 1: Households Using Different Modes of Payment**

Modes of Payment	Frequency	Per centage
Cash	440	100
Debit Card	77	17.5
Credit Card	20	4.5
UPI	218	49.5
Net Banking	23	5.2

Source: Authors' Compilation

Table 1 reveals that all surveyed households use cash to purchase different goods and services; cash is the most popular payment method in the study area. Nearly half of the households, 49.5 per cent, use UPI, the second most preferable payment mode. Nowadays, all individuals are willing and able to purchase a mobile phone, which may be used for multiple purposes, such as social connection through social media and economic connection, like using different payment modes. The debit cards stand in third place with 17.5 per cent of HHs choices. All account holders own this card and can use it anywhere; the point-of-sale device is available at a supermarket, shopping mall, etc. Credit cards (4.5%) and net banking (5.2%) are the preferred payment options.

**Figure 1: Households Using Different Modes of Payment in Rural and Urban Areas**



Further, figure 1 shows how different payment methods are used in various areas, especially in rural and urban. The study found that 30 per cent of households in urban and 70 per cent of households in rural areas use cash. There is a vast difference between rural and urban households in terms of using cash. Like cash, the difference is also in using net banking and credit cards in urban and rural areas. 48.1 per cent of rural households and 51.9 per cent of urban households use debit cards. However, in the case of UPI, rural people use more than urban people. So, the area plays a significant role in determining all payment options. Education and experience give urban people more choices in the card payment system than in rural.

**Table 2: Percentage of Total Expenditure on Different Products**

Products	Cash	Debit	Credit	UPI	Net Banking	Total
Veg and non-veg	87.62	0.00	0.00	12.38	0.00	100.00
Dairy Products	83.14	0.00	0.00	16.86	0.00	100.00
Snacks/ Tiffin	66.12	0.00	0.00	33.88	0.00	100.00
Beverages	72.26	0.00	0.00	27.74	0.00	100.00
Grocery Items	79.99	2.09	0.00	17.92	0.00	100.00
Total Food Item	81.70	0.85	0.00	17.44	0.00	100.00
Petrol	57.31	13.87	3.79	25.03	0.00	100.00
Saloon/Parlor	77.71	0.00	0.00	22.29	0.00	100.00
Mob & TV Recharge	40.26	1.18	1.69	56.87	0.00	100.00
News Paper	90.18	0.00	0.00	9.82	0.00	100.00
Bills & Premium	65.36	0.53	1.34	31.36	1.41	100.00
House Service Payment	79.28	0.00	0.00	20.72	0.00	100.00
LPG	89.98	0.00	0.00	7.45	2.57	100.00
Rent	51.37	0.00	0.00	48.63	0.00	100.00
School & Tuition Fees	69.31	0.00	0.00	30.69	0.00	100.00
Books & Office Stationery	63.22	2.78	0.00	34.01	0.00	100.00
Foot Ware	69.72	3.39	1.25	25.49	0.14	100.00
Cosmetics	56.20	0.00	2.60	40.60	0.61	100.00
Dress Materials	63.35	10.47	4.05	21.59	0.53	100.00
Repairing Service	75.35	0.00	0.00	24.65	0.00	100.00
Children Product	75.84	5.58	0.93	17.65	0.00	100.00
Med Service	65.64	21.33	3.03	10.00	0.00	100.00
Diagnostic Center	64.40	10.37	4.15	21.09	0.00	100.00

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Medicine	75.76	3.79	1.93	18.52	0.00	100.00
House Construction Material	82.42	10.12	0.00	7.46	0.00	100.00
Restaurant	40.19	7.14	4.88	47.79	0.00	100.00
Travel	66.89	5.57	2.49	25.05	0.00	100.00
Payment to friends and relatives	47.93	0.00	0.00	50.93	1.14	100.00
Gift & Donation	91.11	0.52	0.00	8.37	0.00	100.00
Consumables and services	70.04	5.11	1.47	23.10	0.27	100.00
Electronic Products	34.12	13.21	6.36	42.63	3.68	100.00
Purchase of Vehicles	30.68	23.95	3.61	13.55	28.21	100.00
Durable Assets	31.37	21.81	4.16	19.34	23.32	100.00
Source: Authors' Compilation						

Table 2 shows the distribution of the percentage of the total expenditure by the surveyed households among the different modes of payment during the purchase of different goods and services.

It is found that households use cash as a medium of payment to purchase different food items, which is 81.7 per cent. Among the different modes of digital payments, UPI is the most preferred mode at 17.44 per cent, second to cash. Some households use debit cards to buy different grocery items on the market. In the second category of the product, that is, consumables and services, the preferable modes of payment are the same. Cash is the most preferred mode, followed by UPI, debit card, credit card, and net banking. But in the case of durable assets, the first preference is cash, and the second preference is net banking, followed by debit cards, UPI, and credit cards 31.37, 23.32, 21.81, 19.34 and 4.16, per cent respectively. Data shows that cash is dominated in unorganised transactions like vegetables, snacks, dairy products, etc., but the use of cash is decreasing for consumables and durable transactions.

In the case of purchase of food items, cash and UPI are the common modes used by all households. A debit card is also used to get grocery products, which is 2.09 per cent. Among the consumable items, cash is mostly used for newspapers (90.18%) and LPG (89.98%). The most common uses of net banking are for LPG purchases (2.57%), followed by payments for bills and premiums (1.41%), money transfers to friends and relatives (1.14%), and other expenses. UPI mode is preferable to avail services like television and mobile recharge (56.87%) and fund transfer to friends and relatives (50.93%), followed by rent payment (48.63%), payment in restaurants (47.79%), etc. The use of debit cards is more than that of credit cards. Households prefer credit cards to pay for restaurant services (4.88%), diagnostic centre services (4.15%), etc. Debit cards are used for medical services (21.33%) the most, followed by filling petrol (13.87%), purchase of dress materials (10.47%), house construction materials (10.12%), etc. Durable products like televisions, refrigerators, washing machines, etc., are consumed preferably by using the UPI mode of payment, and cash is still dominant for purchasing vehicles. But in the case of aggregate durable items, cash (31.37%) followed by net banking is the second preferable mode (23.32%), debit cards (21.81%), UPI (19.34%) and credit cards (4.16%) respectively.

**Figure 2: Different Mode-wise Percentage of Total Expenditure**

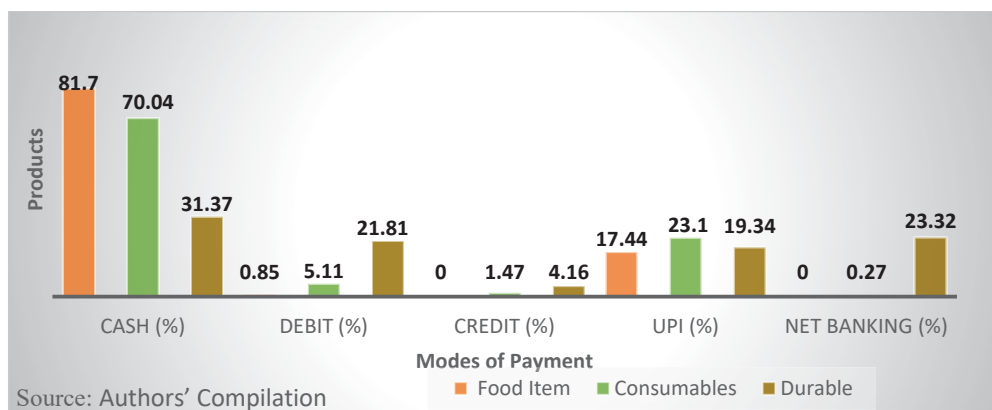


Figure 2 shows that cash dominates over other modes of payment in all three categories of commodities and services, followed by UPI. Consumers use all modes of payment to purchase durable assets.

**Table 3: Percentage of the households using different modes to buy various Products**

Products	Cash (%)	Debit (%)	Credit (%)	UPI (%)	Net Banking (%)
Veg and non-veg	98.2	0.0	0.0	18.4	0.0
Dairy Products	53.4	0.0	0.0	8.9	0.0
Snacks/ Tiffin	60.9	0.0	0.0	21.8	0.0
Beverages	40.7	0.0	0.0	10.0	0.0
Grocery Items	91.4	1.4	0.0	22.7	0.0
Food Item	68.90	1.4	0.0	16.36	0.0
Petrol	55.9	10.9	2.3	22.5	0.0
Saloon/Parlor	69.5	0.0	0.0	15.2	0.0
Mob & TV Recharge	55.7	0.7	0.7	41.4	0.0
News Paper	12.5	0.0	0.0	1.1	0.0
Bills & Premium	71.8	0.9	1.4	19.8	1.1
House Service Payment	5.2	0.0	0.0	0.7	0.0
LPG	65.0	0.0	0.0	5.7	1.8
Rent	3.0	0.0	0.0	2.3	0.0
School & Tuition Fees	45.2	0.0	0.0	9.3	0.0
Books & Office Stationery	43.9	0.9	0.0	11.8	0.0
Foot Ware	85.7	2.3	0.9	29.3	0.5
Cosmetics	57.7	0.0	0.7	22.3	0.7
Dress Materials	86.1	7.5	2.5	32.5	0.9
Repairing Service	30.9	0.0	0.0	7.3	0.0
Children Product	25.0	4	0.5	5.2	0.0
Med Service	23.2	9	0.7	4.3	0.0
Diagnostic Center	20.9	7	0.5	3.4	0.0
Medicine	64.1	5	0.5	15.2	0.0
House Construction Material	10.5	4	0.0	1.1	0.0
Restaurant	17.7	9	0.7	15.45	0.0
Travel	37.7	11	0.0	13.4	0.0
Payment to friends & Relatives	18.4	0 0.0	0.0	18.4	0.5
Gift & Donation	47.0	0.5	0.0	3.9	0.0
Consumables	41.42	2.48	1.01	13.11	0.91
Electronic Products	22.7	2.0	1.1	11.4	0.4
Purchase of Vehicles	3.2	2.0	0.5	0.7	0.9
Durables	12.95	2.05	0.80	6.02	0.68

Source: Authors' Compilation

In Table 3, it is shown that households in Odisha make use of a variety of payment modes to meet their day-to-day transactions. These modes are cash, debit and credit cards, UPI, and net banking for purchasing various goods and services. The percentage of expenditure in cash mode on items like vegetables and non-vegetable items, groceries, and tiffin items are 98.2 per cent, 91.4 per cent and 60.9 per cent, respectively. Households also use UPI to purchase food items, i.e., 16.36 per cent less than the cash users (68.90 per cent). Only 1.4 per cent of households use debit cards to purchase grocery items, and in the case of buying dairy products, snacks, parlours, house services, and rent, no households use debit cards, credit cards or net banking.

Cash is not only the most preferable mode of payment for food items but also for consumable items (41.42%) and durable items (12.95%). The percentage of households that use cash for purchasing dress materials (86.1%), footwear (85.7%), and bills and premiums (71.8%). This result implies that HHs are from rural or underdeveloped regions. The next preferable mode is UPI, which is used for recharge of mobile and television (41.4%), purchase of dresses (32.5%), footwear (29.3%), cosmetics items (22.3%) and many more items in e-commerce. This mode is easier compared to other modes of payment. More than 20 per cent of households are



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using UPI to fill petrol. However, a very small percentage of households use this mode for house service payments (0.7%) and newspaper payments (1.1%).

The use of debit cards, credit cards, and net banking is very low. A small percentage of households use debit cards to fill petrol (10.9%), dress materials (7.5%), and ticket booking for travel purposes (2.5%). Net banking is used to purchase LPG (1.8%) and bills and premium pay (1.1%). Credit cards are used for purchasing dresses (2.5%), filling petrol (2.3%), and paying bills and premiums (1.4%).

Regarding durable products, 12.95 per cent of households use cash, followed by UPI, debit cards, credit cards, and net banking, with a percentage of 6.02, 2.05, 0.8, and 0.68, respectively.

**Table 4: Percentage of Households Using Different Modes in Rural and Urban**

Products	Cash (%)		Debit (%)		Credit (%)		UPI (%)		Net Banking (%)	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Food items	68.83	69.09	0.0	4.5	0.0	0.0	11.75	27.12	0.0	0.0
Consumable Items	21.72	43.31	0.5	2.9	0.2	0.8	5.2	20.9	0.05	0.6
Durable Assets	14.61	9.09	1.14	4.16	0.3	2.27	5.03	16.7	0.0	2.27

Source: Authors' Compilation

Table 4 depicts the rural and urban comparison of using different modes of payment to purchase different items like food items, consumables and services, and durable assets. In the food items category, households use cash as an important component of payment mode more than any other mode, both in rural and urban areas. Between the regions, 69.09 per cent of households in urban areas use cash, which is greater than that of rural areas (68.83%). No users in rural areas use debit cards, credit cards, and net banking to purchase food items. Only 4.5 per cent of HHs use debit cards to buy food items in urban areas. In urban areas, households use a higher percentage of UPI to buy food items compared to other categories of items. To purchase consumable items, households use all the modes of payment, both in rural and urban regions. Cash and UPI dominate over other modes to purchase consumable items; cash users are 21.72 per cent and 43.31 per cent in rural and urban areas, respectively, and UPI users are 5.2 per cent and 20.9 per cent in rural and urban areas. But in the case of durable assets, UPI users are more in urban areas, and cash users are more in rural. Other modes of payment are used, but they are negligible in both regions.

**Table 5: Mean & S.D. Value of Total Expenditure on Different Products**

Item Group	Cash		Debit Card		Credit Card		UPI		Net Banking	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Vegetable/ non-Veg	26352	17987	0.00	0.00	0.00	0.00	19852	14560	0.00	0.00
Dairy Products	10539	12413	0.00	0.00	0.00	0.00	12200	10811	0.00	0.00
Snacks/ Tiffin	7317	6790	0.00	0.00	0.00	0.00	10466	8314	0.00	0.00
Beverages	4784	5380	0.00	0.00	0.00	0.00	7500	9113	0.00	0.00
Grocery Items	27403	21125	48000	25171	0.00	0.00	24672	28904	0.00	0.00
Foods	63518	40043	48000	25171	0.00	0.00	38978	40364	0.00	0.00
Petrol	18060	18557	22150	21120	29400	16840	19600	18020	0.00	0.00
Saloon/ Parlor	3702	692	0.00	0.00	0.00	0.00	4868	5828	0.00	0.00
Mobile & T.V. recharge	7337	7467	17600	17027	25200	20187	14139	13162	0.00	0.00
News Paper	4008	2051	0.00	0.00	0.00	0.00	4800	3146	0.00	0.00
Bills & Premiums	13382	19525	8700	3304	14566	4717	23534	21870	18360	11937
House Service Payment	14973	11611	0.00	0.00	0.00	0.00	30000	6000	0.00	0.00
LPG	15658	5242	0.00	0.00	0.00	0.00	14837	3625	15975	5200
Rent	53815	32834	0.00	0.00	0.00	0.00	66240	28464	0.00	0.00

Fees	7701	15516	0.00	0.00	0.00	0.00	15891	31922	0.00	0.00
Books & office stationery	1529	2505	3250	3329	0.00	0.00	3063	4279	0.00	0.00
Foot Ware	1991	1561	3550	2753	3375	4423	2135	1962	750	353
Cosmetics	552	1032	0.00	0.00	2833	2255	1357	1481	667	289
Dress Materials	5455	5527	10412	8515	13000	10208	4952	5199	4375	2056
Repairing Service	2031	3051	0.00	0.00	0.00	0.00	3103	3789	0.00	0.00
Children Product	1111	1154	2250	2255	750	354	1237	1154	0.00	0.00
Medical Service	1689	2639	6311	8306	2667	2082	1389	2203	0.00	0.00
Diagnostic Centre	3545	5195	7500	7397	10500	6364	7120	6571	0.00	0.00
Medicine	1729	2292	4900	4219	6250	8132	1786	1548	0.00	0.00
Construction Materials	43363	59830	61250	37053	0.00	0.00	36100	40725	0.00	0.00
Restaurant	1835	2364	2767	1640	5667	8083	2529	3078	0.00	0.00
Travel	4850	5799	6091	6457	0.00	0.00	5110	5147	0.00	0.00
Payment to friends& relatives	6747	8613	0.00	0.00	0.00	0.00	7169	8577	6500	4950
Gift & Donation	10954	13331	6500	4950	0.00	0.00	12253	15511	0.00	0.00
Consumables & Services	66703	55701	27878	29821	41294	46144	54310	58325	13347	11420
Electronic Product	5099	9208	21943	16692	19000	13856	12741	15399	27500	3536
Purchase of Vehicle	131785	140090	85000	22688	108500	26162	271667	287504	374000	333623
Durable	22215	67625	60155	42993	44571	46360	27924	84711	258500	314327
Non-Food: Total	72054	69259	39441	43810	50699	53765	60722	75964	78460	190378

Source: Authors' Compilation

Table 5 reveals that households choose to spend more by using cash mode, followed by debit cards and UPI, for food items. However, no households use credit cards or net banking for the same purpose. Some households reveal that they started using these two modes for food items during COVID-19, particularly in urban areas. The standard deviation value shows a high variation in the use of UPI followed by cash.

In the second category, consumables and services, the mean value reveals that households also prefer to use cash. They prefer UPI, credit cards, debit cards, and net banking, among the different digital modes. There is a high standard deviation value in the case of UPI, followed by cash, credit card, debit card and net banking. In the case of the durable category, households spend money using net banking; the mean value is very high, Rs. 258500.00, which is higher than any other value. The second choice of the household is a debit card, followed by a credit card, UPI, and cash. Households have the least preference for using cash to buy durable assets. The standard deviation value shows a high variation in net banking followed by UPI, cash, credit, and debit cards.

**Table 6: Mean & Standard Deviation Value of Total Expenditure in Rural and Urban**

Item Group		Cash		Debit Card		Credit Card		UPI		Net Banking	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Rural	Foods	57938	36803	0.00	0.00	0.00	0.00	32498	41367	0.00	0.00
	Consumable & Services	6621	39399	11071	31789	3143	8315	9319	56622	10429	9844
	Durable: Total	24571	73247	64643	44951	22000	0.00	39457	109784	0.00	0.00
	Non-Food: Total	6621	39399	12230	31553	3143	8315	9783	56617	10429	9844
Urban	Foods	76945	44281	48000	25171	0.00	0.00	46281	38183	0.00	0.00



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	Consumable & Services	85360	61896	26753	26445	33310	46914	62008	70659	15050	12327
	Durable: Total	13717	41633	56666	43807	48333	49601	12198	18284	258500	314327
	Non-Food: Total	2390	17843	39143	43581	47930	57050	64775	74518	108225	223639
Source: Authors' Compilation											

Table 6 shows the mean and standard deviation values of different items used by survey households by using different modes of payment in different regions. It reveals that households in rural areas usually prefer cash, followed by UPI. The mean value of cash use is Rs. 57938, and UPI is Rs. 32498 for food. The standard deviation value shows there is high variation in the case of UPI followed by cash for food items. Households in rural areas are using these two modes only to buy food items like vegetables, non-vegetables, dairy products, beverages, etc.

The mean expenditure of debit cards is Rs. 11071, which is preferred the most, and Rs. 3143.00, the mean value of expenditure using credit cards, which is the least preferred. In the case of durable assets, the households prefer debit cards (Rs. 64643) the most to buy durable goods like home appliances, vehicles etc. followed by UPI (Rs. 39457), cash (Rs. 24571), and credit card (Rs. 22000). The standard deviation value reveals that the variation is very high in case of UPI (109784) followed by cash (73247) and debit card (44951). The variation is zero in the case of credit cards, which means almost all households are spending the same amount by using a credit card. In rural areas, households are not using net banking to make payments to purchase durable assets due to a lack of internet facilities.

Further, the table reveals the mean and standard deviation values of different items used by survey households using different modes of payment in urban areas. It reveals that households in urban areas also prefer cash, followed by debit cards and UPI, to buy food items. The average amount of spending in cash is Rs. 76945, followed by debit cards Rs. 48000 and Rs. 46248 in UPI. No households use credit cards and net banking for the same purpose, but from the discussion, it is found that during COVID-19, they used these two modes to buy food items. The variation is very high in the case of cash use, followed by UPI and debit cards. The consumables and services are purchased using cash the most, followed by UPI, credit cards, debit cards, and net banking. In the case of durable assets, the preferable mode is net banking (Rs. 258500), followed by debit card (Rs. 56666), credit card (Rs. 48333), cash (Rs. 13717), and UPI (Rs. 12198). The variability of data from standard deviation shows that there is high variation in the case of net banking (314327) followed by UPI (18284), credit card (49601), debit card (43807) and cash (41633).

From the above analysis, we found that, the UPI is the most preferable mode of payment among different alternatives by the households in Odisha. Therefore, study tried to find out the factors that influencing the use of UPI.

**Table 7: Descriptive Statistics**

	N	Minimum	Maximum	Mean	S.D.	Skewness	Kurtosis
UPI Amount	218	250	606200	29152.50	54560.27	6.71	61.18
No. of Members	218	2	17	4.97	1.91	2.01	7.95
Education Level	218	2	96	14.55	14.21	5.21	27.66
Income	218	1500	200000	25789.91	26180.11	2.71	11.41
Age	218	21	77	43.24	11.54	0.15	-0.69
Marital Status	218	1	4	1.42	1.03	2.08	2.38
Users of Mobile & Computers	218	0	2	1.32	0.49	0.53	-1.12
Average Distance	218	0.15	250.5	4.279	17.26	13.52	193.25
Source: The Authors' Calculation							

In our data set, 218 individuals are using the UPI mode of payment for their transactions, corresponding to all variables. In Table 7, marital status and mobile and computer users are denoted as categorical variables, while others are nominal. In a household, the minimum member is two, and the maximum is 17, so the average number of members in a family is 4.97, which is equal to 5. The average income of households is 25789.91 rupees. The average distance from residence to banks and ATMs is 4.28 Kilometers. The standard deviation is high in value of UPI amount and income level. The skewness results show that all variables are positively skewed.

**Table 8: Correlation Result**

Variables	LUPI	Mbrs	LEDU	LIncome	LAge	Marital	MobCom User	AvgDistance
LUPI	1							
Mbrs	-0.009	1						
LEDU	0.056	-0.010	1					
LIncome	0.272*	-0.037	0.202*	1				
LAge	0.145**	0.012	-0.006	0.125	1			
Marital	-0.034	-0.113	0.110	-0.022	-0.463*	1		
MobCom User	0.275*	-0.060	0.221*	0.345*	0.123	0.032	1	
Avg Distance	0.089	-0.067	0.070	0.042	-0.094	-0.024	0.076	1

Source: Authors' Calculation  
 Note: \* & \*\* denote 1% and 5% level of significance

The table 8 depicts the correlation among the variables. The level of log income is statistically correlated with log UPI and log education at a 1% level respectively. The log age is statistically associated with log UPI at 5%. Marital status is statistically and negatively correlated with age. The users of mobile and computer is statistically associated with log UPI, education and log income. The association between education and age are very least (-0.006) followed by the correlation between members of family and log UPI (-0.009). The highest correlation exists between marital status and age (-0.463).

**Table 9: Analysis of Variance (ANOVA)**

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	9.072	7	1.296	4.380	0.000
Residual	62.134	210	0.296		
Total	71.206	217			

Source: Authors' Calculation

Table 9 shows the independent variables significantly predict the value of UPI Payment,  $F(7,210)=4.380$ ,  $p<.001$ , which indicates that the factors under study significantly impact the value of UPI payment.

**Table 10: Model Summary**

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.357	0.127	0.098	0.544

Source: Authors' Calculation

The table 10 displays the model summary, representing the adjusted  $R^2$  of 0.098 with a standard error estimate of 0.544. The independent variables, number of members, marital status, mobile and computer users, average distance, income level, and education level, account for an estimated 12.7% of the value of UPI(R square= 0.127). The very low adjusted R-square shows that socioeconomic factors do not significantly impact the value of UPI payments.

**Table 11: Regression Result**

Model	Coefficient	Std. Error	t-statistics
Constant	1.768**	0.705	2.506
No. of Members	0.005	0.020	0.253
Marital Status	0.014	0.041	0.340
MobCom Dummy	0.230*	0.083	2.776
Avg Distance	0.003	0.002	1.224

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LIncome	0.286*	0.102	2.793
LAGE	0.543	0.352	1.541
LEDU	-0.090	0.176	-0.508
Source: Authors' Calculation			
Note: * & ** denote 1% and 5% level of significance			

Table 11 shows that the two variables, income and use of mobile and computer, significantly affect the value of UPI payment (p-value < 0.01). These variables have a positive impact. Of the two significant factors, income strongly influences the dependent variable more than using computers and mobile phones. An individual with higher incomes has a higher tendency to deposit money and receive their salary in the bank. At the same time, using mobile and computers provides access to UPI payment. The other factors are not statistically significant and have a very low impact, except age. Unlike other variables, education is negatively related. The number of members and average distance from banks and ATMs have an eligible impact on the dependent variable. Hence, income and the use of mobile phones and computers are the main socioeconomic factors that affect the value of UPI payments.

### 6. Result and Discussion

From the surveyed households, it is found that, despite the development of payment systems, i.e., digital modes of payment, traditional payment plays a vital role in payment methods (Swiecka et al., 2021). Cash has its unique features for which, after many technological payment evolutions, it is still an important mode of payment not only in rural areas but also in urban areas for buying different articles. It is convenient for individuals to use, as it is high liquidity, and is widely acceptable (Aurazo & Vega, 2021; Shree et al., 2021). It is also accepted by everyone in each transaction. It is also revealed from the analysis that, every household prefers to use cash to purchase goods and services.

Further, in an underdeveloped economy like India, informal sectors prefer to pay wages and salaries in cash. Therefore, cash is dominated in both geographical areas for payment against buying different goods and services because of its acceptance nature and ease of use, which is supported by Simatele & Mbedzi (2021) in their study. Particularly in the case of beverages, both soft and hard drinks bids are substantially higher for the cards than for cash (Runnemark et al., 2015), but in our study, for the beverages, households are using both cash and UPI, not any card. These two modes are used for beverages or food items due to their ease-of-use nature. A study by Swiecka et al. (2021) reveals that households use cash for low-value products and cards for high-value products.

### 7. Conclusion

Cash is preferable for food items, and digital modes are preferable for durable assets. The association between education and age are very least followed by members of family and log UPI. The highest correlation exists between marital status and age. Among the variables, only two factors are statistically influencing the value of UPI, namely use of smartphones and computers and income of the respondents. Study may educate people from different sectors to access and use digital payment modes to enhance the payment efficiency that ultimately influencing the growth of the economy. In estimation of regression model the only digital mode of payment that is UPI taken for the study. Study would have considered other modes of digital payment like debit cards, credit cards, NEFT, RTGS, net banking etc. Study would have taken other socio-economic factors like savings, access of credit, occupation, experience on use of digital payments etc. Policy makers need to initiate the infrastructural development and awareness on confidence of the public to use more to more of digital modes of payment to accelerate the pace of economic growth.

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