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"Effect of Digital Payment Methods on Consumer Spending Habits."

Amruth Prakash Maladkar
MBA Student
mamruth7@gmail.com

Deepak Shyam
Mentor and Associate Professor
PES University
depaksham@pes.edu

Abstract

Digital Payments (Digital wallets) and UPI have gained rapid popularity and wider acceptability in the country. Internet and Smart phones have become common and most accessible ways for people to pay for things with their phones. This research highlights the shift in the Indian consumer spending towards spending on digital channels through digital payments which has emerged as the primary spending channel across Indian cities. The paper is on a survey of 500 urban and semi-urban stakeholders in order to comprehend their behaviour and attitudes. With digital payments becoming increasingly more convenient and fast for users to spend, the increasing results indicate the more often people make unplanned impulsive purchases as well. Among the age-related factors, higher income users were more likely to use these methods for shopping and everyday expenses, but it was harder for older users to keep a view on getting the money they need. The research indicates that financial education, improved budgeting tools in apps, and awareness programs are necessary to help consumers responsibly utilise the digital payments and avoid spending too much of money. Overall, digital payments have introduced a new range of advantageous and directionless situations affecting consumer behaviour in profound manners.

Keywords: *Digital payments, Consumer spending habit, Impulse buying, Behavioural finance, financial discipline.*

Introduction

It is the way that the individuals and the institutions transact with one another regarding monetary transactions which has radically shifted by the development of the financial technologies. Specifically, such approaches as digital payment are one of the biggest agents of change in the contemporary financial world. Digital payments have transformed the interaction of human existence in the money space with speed, convenience and accessibility through credit as well as debit cards, QR code-based aspect, and Unified Payments Interface (UPI). This is not just a change of a technological kind but a deeper level of change in the consumer in terms of ways they use their money, decision-making and behaviour. With the physical currencies increasingly becoming less visible in the daily existence of humanity, additional examination is required to determine how the digital payments impact on the consumer spending habits.

In today's world, where transactions done electronically are taking over the traditional money-based system, there is a thin line between what is necessary spending and what is impulsive spending. Before consumers were required to provide money physically, which created a sense of losing and knowledge of spending often called the pain of paying. However, with digital payments that moment of direct contact has been substituted with achievable level transactions, where money changes hands virtually

almost with the click of a finger which makes many transactions almost frictionless. Several researchers, in behavioural economics have underlined that the less painful the payments, the more consumers are likely to spend more, make unplanned purchases and even break their savings discipline. This helps to raise an important question - Is the convenience of Digital payments making people spend more? or are they just better ways of managing the money effectively?

The Global Context of Digital Payments.

Over the last ten years, the way payments are made for goods and services has transformed greatly in countries throughout the world. Cash and traditional banking practices are no longer the majority but are now being slowly switched out to timely, easy, and technology-focused practices. Economies are not just wherever cash flows, it is not an option anymore but essential to the lives of individuals in managing their money. According to the World Bank, more than 70% of all adults in the world now have some kind of digital financial account. This increase corresponds to a huge increase in financial inclusion with even people in the rural and low-income sections gaining access via cellular phones and internet-based platforms. The scale of this change is shown in the already attained figures. In 2014 alone, digital payments around the world were estimated to be worth around $1.7 trillion. In 2024, the latter already increased to $18.7 trillion, and experts believe that it will exceed $33.5 trillion by 2030. This, and the fact that the digital payments industry is enjoying a rather impressive growth as well (from approximately $114 billion in 2024 to about $361 billion by 2030), give it a figurative rocket propulsion in worldwide expansion over the upcoming years.

The different regions exhibit different patterns. In advanced economies such as in the United States and Europe, card payments, mobile banking, and payment through contactless practices are prevalent. On the one hand, in contrast, technologically advanced countries like China have graduated from conventional finance by means of platforms such as Alipay and Wechat Pay, which now account for the backbone of everyday transactions. In Africa, financial services such as M-Pesa in Kenya have brought financial services to millions of unbanked people, while in Latin America and Southeast Asia and all of Asia mobile wallets and QR-based financial systems are growing rapidly.

The effects of the pandemic on the time considered to be a period of acceleration in the world, since people and businesses turned to safer and contactless payments. Governments also adopted digital platforms for delivering subsidiaries and transparency. While the benefits are obvious - efficiency, speed, inclusion - the impact on consumer behaviour is various. For some, digital tools lead to greater tracking of expenses, whereas for others, the "invisible" nature of money leads to overspending and impulse buying. Looking ahead, we can expect that innovations such as block chain, central bank digital currencies (CBDCs), and artificial intelligence (AI)-enabled services will drive this further to the extent that digital payments are one of the defining characteristics at the forefront of the global financial system.

The Indian Digital Payment Landscape

The journey of India with digital payments is one of the most remarkable one in the world. For long, India had been a cash heavy economy, where majority of day-to-day purchases ranging from groceries and transport needs were made through physical currency. Before 2016, cash was a dominant force in the system - almost 12% of India's GDP was in currency in circulation, much higher than that in many other countries. These people were inclined to use the cash because it was convenient for them since it seemed dependable for them when handling the cash as well as allow them to have a feeling on spending it. The dependence on money had its many downsides, however. It caused high costs in

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printing and handling money; it encouraged the shadow economy and also made tax evasion and corruption more prevalent.

The turning point came in November of 2016, when the Indian government announced demonetization and suddenly withdrew notes of high denominations of rupees e.g. Rs500 and Rs1000. Since these notes accounted for almost 87% of the currency in circulation, amounting to this meant the cash crunch came with immediate effect. People and businesses that made almost his or her whole life in cash had no methods of selecting but to seek other options. This "shock" event had the effect of pushing millions to begin using digital methods of payments, including mobile wallets, cards, as well as bank transfers.

At the same time, India had already planted the seed of digital finance with what is commonly known as the "JAM Trinity" - Jan Dhan bank accounts, Aadhaar digital identity, and ubiquity of Mobile phone usage. This meant that there were large numbers of people who already had access to a bank account, an ID and a mobile device, even if they weren't using them regularly. Demonetization played the role of triggering this infrastructure causing people to turn over to digital. The most significant development occurred in 2016 with the issue of the Unified payments interface (UPI). UPI money transfers were made simple, instant, and free, with the use of only a mobile phone. It linked hundreds of banks together in a system in which anyone could send or receive money without problems. Within a few years, UPI expanded at phenomenal levels. By 2025, it was processing more than 20 billion transactions a month, representing anything between large payments, or small daily transactions for tea, rickshaw rides or grocery

Government programs such as Digital India along with the RBI & NPCI further increased the trust, infrastructure, and adoption. Today, India is actually not just playing catch-up but is globally leading the real-time digital payments. This journey from being one of the most cash-dependent countries to being a leader in digital finance demonstrates how through the combination of policy, technological progress and consumer behaviour can create massive change in spending habits.

Consumer Psychology and Spending Habits.

Paying with cash has a more 'real' feel, reminding people of money loss, and digital payments are easier to pay so people are likely to increase their spending amount or purchase impulse buys. Digital payment is accompanied by rewards such as the cashback, discount, and point. These work like trying to shove people into buying more which in fact causes them to buy more often, or more than they seem to plan for. At the same time, digital payments provide tools such as transaction history and spending alerts that can assist in enabling people to better budget if used wisely. So, it seems that the effect is dependent on a balance between self-control and impulse

Demographic Dimensions of Digital Payment Usage

The younger generation (digital natives) makes more impulse purchases and uses digital payments more frequently as compared to the older generations which are more cautious in their spending habits. Income and education are relevant: on the one hand, indices are published that indicate wealthier, and better-educated people using digital payments more extensively, and the other end being the poor who use it for certain purposes. Gender differences also exist where men and women have different spending and decision-making styles.

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Advantages and Challenges of Digital Payments.

Advantages: Digital payments are fast, convenient, transparent, and help governments track money flows. They also support financial institutions and give businesses new opportunities.

Challenges: Easy spending can make people lose track of expenses. Risks like fraud, technical issues, and constant offers can lead to overspending or even debt.

Literature Review

1. The Effect of Payment Mechanisms on Consumption Behaviour (Shu & Xia, 2018)

Key Contributions: This study investigates how different payment modes, such as cash and digital methods, influence consumer spending. It finds that consumers spend more when using digital or card-based payments due to the abstract nature of money in non-cash transactions.

Relevance to My Paper: This paper establishes the foundational behavioural concept that digital payment methods reduce the perceived pain of paying, leading to higher spending a key psychological mechanism for my study.

2. Cashless Payment and Consumer Spending: Evidence from India's UPI Adoption (Gupta & Ranjan, 2020)

Key Contributions: The study analyses India's Unified Payments Interface (UPI) and finds that UPI adoption promotes higher transaction frequency and value, especially among tech-savvy consumers.

Relevance to My Paper: This research is directly relevant as it provides Indian evidence of how digital payment adoption increases consumer spending and supports my paper's context-specific findings.

3. Mobile Wallets and Impulse Buying Behaviour (Thomas & Ramaswamy, 2019)

Key Contributions: The study shows that mobile wallets enhance impulse buying due to ease of transactions and reduced friction in payments.

Relevance to My Paper: This study highlights the behavioural impact of mobile wallets, supporting my analysis of impulsive spending caused by digital convenience.

The Role of Digital Payments in Household Financial Management (Banerjee, 2021)

Key Contributions: Banerjee finds that digital payment systems improve household budgeting and record-keeping but also encourage overspending due to ease of payment.

Relevance to My Paper: It connects digital payment adoption with both positive (control) and negative (overspending) outcomes, providing a balanced behavioural framework for my research.

. **Digital Payments and Consumer Spending Patterns in China (Li & Zhang, 2019)**

Key Contributions: The study concludes that digital payment systems in China have led to higher consumption and economic growth through increased spending frequency.

Relevance to My Paper: It provides cross-country evidence supporting the idea that digital payments enhance consumption reinforcing the universality of this behavioural trend.

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Impact of Contactless Payments on Consumer Behaviour in Europe (Wright & Martin, 2018)

Key Contributions: The paper finds that tap-and-pay methods lead to more frequent and higher-value transactions, although concerns about security persist.

Relevance to My Paper: This study validates that contactless technologies encourage impulsive and convenient spending, like Indian digital payment systems.

. **Digital Finance and Household Spending in Emerging Markets (Kumar & Patel, 2020)**

Key Contributions: This research shows that digital finance users in emerging economies tend to spend more and save less due to accessibility and convenience.

Relevance to My Paper: It highlights financial discipline concerns associated with digital payment adoption aligning with my paper's exploration of behavioural spending shifts.

Behavioural Effects of Mobile Payments in the United States (Cohen & Nelson, 2017)

Key Contributions: The paper examines how mobile apps influence spending and finds that users spend more frequently when digital payment tools reduce friction.

Relevance to My Paper: It supports the behavioural explanation for increased spending habits in digital ecosystems, applicable to Indian consumers as well.

9. E-Wallet Adoption and Spending Behaviour Among Students (Mehra & Singh, 2021)

Key Contributions: The study finds that students using e-wallets make more frequent, small-value purchases and are less aware of their total spending.

Relevance to My Paper: It provides insight into young consumers' spending habits a key demographic in my analysis of digital payment users.

10. The Digitalization of Money and Its Influence on Consumer Choices (Brown & Smith, 2019)

Key Contributions: The paper identifies that digital payments lower psychological barriers to spending, leading to faster and less cost-conscious purchases.

Relevance to My Paper: It adds to the understanding of how payment methods alter decision-making speed and rationality in consumption.

Digital Payments and Consumption Growth in India (Sharma & Nair, 2022)

Key Contributions: This research links UPI and card payments with overall consumption growth in India, especially among urban consumers.

Relevance to My Paper: It provides direct evidence from India showing that digital payments drive national-level consumption increases, supporting the macroeconomic importance of my topic.

Mobile Banking and Consumer Expenditure Patterns (Adeyemi & Johnson, 2018)

Key Contributions: The study finds that mobile banking increases expenditure by simplifying transactions and improving access to financial tools.

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Relevance to My Paper: It demonstrates the broader financial impact of digital channels on spending extending to similar behaviours in India.

The Impact of Fintech on Consumer Spending Behaviour (Lee & Park, 2020)

Key Contributions: The study shows that fintech apps encourage frequent spending through convenience features like notifications and rewards.

Relevance to My Paper: It reinforces the behavioural drivers (ease, gamification, and instant gratification) that influence consumer spending in digital contexts.

Consumer Perception of Security and Its Effect on Digital Spending (Verma & Desai, 2019)

Key Contributions: The paper reveals that consumer trust and perceived security directly influence willingness to spend digitally.

Relevance to My Paper: It identifies security perception as a moderating factor in spending habits, helping contextualize barriers to digital adoption in India.

Impulse Buying in the Age of Digital Payments (Hassan & Ali, 2021)

Key Contributions: This study confirms that digital payments encourage impulse buying by lowering transaction friction.

Relevance to My Paper: It directly supports my paper's behavioural dimension linking convenience to unplanned spending.

Spendception: The Psychological Impact of Digital Payments (Faraz & Anjum, 2025)

Key Contributions: The authors introduce the concept of "spendception," showing how digital payments create a psychological disconnect from real money, increasing overspending.

Relevance to My Paper: It offers a theoretical lens for understanding why digital payments lead to greater expenditure central to my paper's argument.

From Cash to Cashless: UPI's Impact on Spending Behaviour in India (Dev et al., 2024)

Key Contributions: The study finds that UPI increases small, frequent transactions and proposes designing financially responsible user interfaces.

Relevance to My Paper: It contributes to understanding the behavioural shifts caused by UPI and aligns with my study's exploration of responsible digital consumption.

The Impact of Digital Payment Systems on Consumer Behaviour in India (Huggi et al., 2024)

Key Contributions: This research confirms that digital payment systems increase convenience and frequency of purchases while influencing consumption habits.

Relevance to My Paper: It offers direct Indian evidence on how digital systems shape everyday spending highly aligned with my topic.

Spending Behaviour of Gen Z Consumers Using Digital Payment Systems (Lamichhane, 2025)

Key Contributions: The paper shows that Gen Z consumers exhibit impulsive buying behaviour driven by convenience and technological familiarity.

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Relevance to My Paper: It provides generational insights, supporting my segmentation of consumer groups in analysing spending habits.

Digital Payment Patterns in India: A Cross-Sectional Study (Invalli et al., 2025)

Key Contributions: The study compares UPI, credit, and debit card usage and finds a shift toward higher online spending and convenience-driven behaviour.

Relevance to My Paper: It strengthens my research with comparative data across multiple payment platforms in the Indian context.

Digital Wallets: Influence of Consumer Attitude on Impulsive Spending (Underdown et al., 2025)

Key Contributions: The paper reveals that positive attitudes toward digital wallets correlate with higher impulsive spending frequency.

Relevance to My Paper: It links consumer perception with behaviour, supporting my investigation of attitudinal factors influencing spending.

Digital Payment Adoption: A Revisit on the Theory of Planned Behaviour (Usman, 2025)

Key Contributions: This study applies behavioural theory to digital payment adoption and finds that attitude, norms, and ease of use predict spending patterns.

Relevance to My Paper: It provides theoretical grounding for understanding how behavioural intentions translate into actual digital spending habits.

Impact of Digital Payment Adoption on Household Spending Behaviour in Urban and Rural India (Various Authors, 2025)

Key Contributions: The paper finds that digital adoption increases convenience and frequency of spending, with urban areas benefiting more.

Relevance to My Paper: It offers comparative insight into rural–urban differences, complementing my paper's demographic analysis.

Digital Payments and GDP Growth: A Behavioural Perspective (Birigozzi et al., 2025)

Key Contributions: This study connects digital payment adoption with macroeconomic growth through enhanced consumption.

Relevance to My Paper: It broadens the relevance of my topic by linking micro-level consumer behaviour with macroeconomic outcomes.

Opaque Payments, Open Wallets: Digital Payment Methods and Overspending (Sjam et al., 2025)

Key Contributions: The study reveals that the invisible nature of digital payments promotes overspending and weakens budgetary control.

Relevance to My Paper: It supports my investigation into how reduced payment transparency affects responsible spending behaviour

Methodology

This study adopts a quantitative and explanatory research design to analyse the impact of digital payment methods on consumer spending habits. The quantitative approach allows for the measurement and statistical evaluation of relationships among key constructs such

as impulse buying, expense tracking difficulty, and promotional sensitivity. The objective of this design is to establish causal relationships between the use of digital payment systems and variations in consumer behaviour.

A cross-sectional survey design was employed, as it enables data collection from a large sample at a single point in time, making it suitable for identifying behavioural trends and associations within the population. The primary data collection instrument was a structured, self-administered questionnaire, which facilitated extensive data collection across diverse demographic segments. This method provided a robust empirical foundation for subsequent statistical and inferential analyses, ensuring that the findings are both reliable and generalizable.

Research Gap

Existing literature has established that digital payments enhance convenience and often lead to higher spending. However, it lacks a comprehensive behavioural framework explaining how and why spending habits change, especially within India's diverse socio-economic landscape. Most studies emphasise adoption rather than post-adoption behaviour, and few assess long-term or demographic differences in spending outcomes.

Objectives

To study consumer adoption levels of digital payments (UPI, wallets, cards, etc.).

To analyse the relationship between digital payment, use and spending habits.

To examine whether digital payments encourage impulse buying and reduce savings discipline.

To assess demographic differences (age, income, gender) in digital payment usage and spending patterns.

To identify challenges consumers face (tracking expenses, self-control).

Survey Instrument

The questionnaire was designed after reviewing prior academic work on consumer psychology and digital payments (Shu & Xia, 2018; Gupta & Ranjan, 2020). It consisted of three major sections:

Demographics: Age, gender, educational qualification, and household monthly income were included to capture differences in digital payment adoption and behavioural outcomes across consumer segments.

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Adoption and Usage: Questions focused on the extent of digital payment adoption, frequency of use, and percentage of monthly spending conducted via digital payments such as UPI, digital wallets, debit cards, and credit cards.

Behavioural Constructs:

Impulse Buying: Items measured through statements such as "I often end up buying products online impulsively while using UPI/wallets".

Expense Tracking Difficulty: Statements like "I find it difficult to track my expenses when using multiple payment apps."

Promotional Sensitivity: Questions such as "Cashbacks and promotional offers encourage me to spend more."

Savings/Discipline: Questions assessing whether digital payments make consumers cautious about their spending.

Most behavioural questions were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). This scaling method was chosen because it allows measurement of consumer attitudes and provides sufficient variance for statistical testing.

Sampling and Data Collection:

The survey was conducted through Google Forms, ensuring wide accessibility and cost-effectiveness. Data was collected over a one-month period, targeting digitally active consumers in urban and semi-urban areas.

Sample Size: 500 valid responses were collected. A sample of this size was considered adequate to run regression analyses and generate statistically robust results.

Sampling Technique: Non-probability convenience sampling was used due to accessibility considerations. While this may limit generalizability, it allowed for efficient targeting of consumers familiar with digital payments.

Target Group: Active users of UPI, wallets, and digital cards. Respondents were required to have made at least one digital transaction per week in the past three months.

Reliability and Validity

To ensure quality of measurement, the study undertook multiple validation steps

Reliability Testing: Cronbach's Alpha Test was computed for the behavioural constructs. The value of 0.90885 indicated excellent internal consistency, confirming that the items designed to measure constructs such as impulse buying and promotional sensitivity were reliable.

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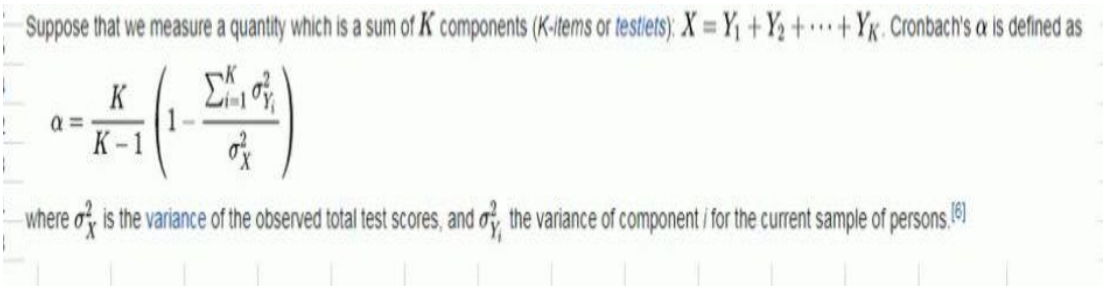
Suppose that we measure a quantity which is a sum of K components (*K-items* or *testlets*): $X = Y_1 + Y_2 + \cdots + Y_K$. Cronbach's α is defined as

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K} \sigma_{Y_i}^2}{\sigma_X^2}\right)$$

where σ_X^2 is the variance of the observed total test scores, and $\sigma_{Y_i}^2$ the variance of component *i* for the current sample of persons.[6]

Content Validity: Items were adapted from prior peer-reviewed studies on digital payments and consumer psychology, ensuring alignment with established theoretical constructs.

Construct Validity: Behavioural constructs were grouped based on conceptual foundations. Factor-based grouping (Impulse Buying = average of Q9, Q10, Q19) confirmed that items loaded logically together.

The variables used in the study were as follows

Dependent Variable: Consumer Spending Habits (measured through monthly spending share and behavioural patterns).

Independent Variables:

Percentage of monthly spending via digital payments.

Impulse Buying Score.

Expense Tracking Difficulty.

Sensitivity to Promotional Offers.

Control Variables: Demographics (age, gender, income, education).

Data Analysis Procedures

The data analysis followed a structured approach, beginning with reliability checks and descriptive statistics, then moving to inferential analysis. The following steps were carried out:

Data Cleaning: Responses were screened for missing values and inconsistencies. Likert-scale responses were coded from 1–5.

Descriptive Statistics: Mean, standard deviation, and frequency distribution were computed for demographics and digital payment adoption. This provided a clear understanding of usage levels and consumer diversity.

Reliability Testing: Cronbach's Alpha was computed for multi-item constructs, yielding 0.90. This ensured that subsequent analysis was based on reliable measures.

Correlation Analysis: Conducted to explore preliminary relationships between variables and check for multicollinearity before regression.

Multiple Linear Regression: The primary analysis method, used to test the relationship between digital payment-related factors and consumer spending habits.

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Regression Model

The regression equation tested was:

$$Y = \beta_0 + \beta_1(\text{Average Monthly Spending via Digital Payments}) + \beta_2(\text{Impulse Buying}) + \beta_3(\text{Expense Tracking Difficulty}) + \beta_4(\text{Promotional Offers}) + \epsilon$$

Where

Y= Consumer Spending Habit (dependent variable)

β_0= Constant term

$\beta_1 \ldots \beta_4$= Coefficients of predictors

ϵ= Error term

The model was tested at a 95% confidence level ($\alpha = 0.05$).

Ethical Considerations

Participation in the survey was voluntary. Respondents were informed about the academic nature of the research and assured that their responses would remain confidential and used only for analysis. No personally identifiable information was collected.

Data Analysis

Descriptive Analysis :

Statement	Mean	Median	Mode	SD	Skewness
Using digital payments makes it easier for me to spend money.	3.85	4	5	1.21	-0.71
I tend to spend more when using UPI or mobile wallets compared to cash.	3.81	4	5	1.18	-0.62
I often make unplanned/impulse purchases when paying digitally.	3.71	4	5	1.18	-0.53
I feel less “pain of paying” when I swipe/tap instead of cash.	3.77	4	5	1.19	-0.57

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I find it difficult to track expenses when using multiple apps.	3.64	4	5	1.25	-0.58
Promotional offers/cashbacks encourage me to spend more.	3.58	4	5	1.19	-0.37
I feel in control of my finances when using digital payment methods.	3.06	3	3	1.26	+0.05
Since adopting digital payments, my monthly spending has increased.	3.77	4	5	1.12	-0.49
My savings discipline has reduced after adopting digital payments.	3.69	4	5	1.17	-0.58

Interpretation: The descriptive analysis shows that based on the digital payment effect on consumer spending, there are several important trends. The statement with the highest mean score was the following: "Using digital payments helps me spend money easily, (Mean = 3.85, Median = 4, Mode = 5), as most of the respondents said that electronic transactions do not create friction in money spending. In the same way, the increased expenditure with UPI or mobile wallets than with cash also received a substantial agreement (Mean = 3.81).

There were tendencies to impulse buying, as the "I often make unplanned purchases when paying digitally has a mean of 3.71 and I feel less pain of paying when swiping/tapping has a mean of 3.77. This is an indication that the decrease of psychological salience of online payments promotes discretionary spending.

Surveillance costs is also a problem to most users (Mean = 3.64) and promotions or cashbacks also motivate the spending behaviours (Mean = 3.58). Financial control responses were however split with the lowest mean of 3.06 having a neutral median (3). This implies that, a high number of consumers do not hold on to the fact that digital payments enhance their management of money.

Notably, the data demonstrates that the digital payments are associated with increased general expenditures and decreased saving discipline. The average of Since adopting digital payments, my monthly spending has increased was 3.77, whereas 3.69 was the score of My savings discipline has reduced. These two values emphasize the fact that convenience and accessibility of online transactions can stimulate an increase in spending and undermine fiscal discipline.

Overall, the results indicate that digital payments have led to convenience as well as promoted the facilitation of spending, raised monthly spending, and undermined saving behaviour among consumers.

Findings

Reliability Analysis (Cronbach's Alpha Test) :

The Cronbach's Alpha value of responses is **0.90885** indicates **excellent internal consistency reliability** for the 9 items in your questionnaire. In social science research, a Cronbach's Alpha value:

Above **0.9** = Excellent reliability

0.8 – 0.9 = Good reliability

0.7 – 0.8 = Acceptable reliability

Below **0.7** = Weak reliability

Since my value is **greater than 0.9**, it shows that the items on my Likert scale are **highly consistent in measuring the same underlying construct** in this case, *the effect of digital payments on consumer spending habits*.

This means respondents answered the questions in a way that suggests the items are closely related and collectively reliable. Therefore, I confidently used these items to test hypotheses, run factor analysis, and conduct regression or correlation analysis.

Correlation Matrix :

	On average, what percentage of your monthly spending	s makes it easier fo	using UPI or mobile	impulse purchase	on digital payments	as reduced after adop
On average, what percentage of your mo	1					
Using digital payments makes it easier fo	0.508760988	1				
I tend to spend more when using UPI or m	0.463495195	0.708423977	1			
I often make unplanned/impulse purchas	0.434093084	0.621157339	0.774816951	1		
Promotional offers/cash backs on digital	0.379249968	0.59371426	0.600172925	0.699075756	1	
My savings discipline has reduced after a	0.322447902	0.568934699	0.656155895	0.712623194	0.682821101	1

The correlation matrix gives a strong positive association between using digital payments (as UPI) and spending habits changes. The result of the analysis shows that individuals more likely to spend with the help of UPI also have high chances of making frequent unplanned or impulse purchases (correlation of 0.77). This behaviour, in its turn, has a strong correlation with a reduction of savings discipline (0.71). Moreover, the perceived ease of paying using digital means and the impact of promotion rates also correlate with these trends greatly, indicating that they help to raise impulse purchases and decrease financial restraint.

Regression Analysis :

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9240921
R Square	0.853946209
Adjusted R Square	0.852765977
Standard Error	0.346758048
Observations	500

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	347.9973838	86.99934596	723.5405723	3.4993E-205
Residual	495	59.51936615	0.120241144		
Total	499	407.51675			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.708653492	0.058514394	12.11075505	9.4857E-30	0.593686283	0.8236207	0.593686283	0.8236207
On average, what percenta	0.019037271	0.018839133	1.010517331	0.312741193	-0.017977255	0.056051797	-0.017977255	0.056051797
Impulse Buying Score (Avg	0.324421517	0.023339086	13.90035241	2.54308E-37	0.278565628	0.370277406	0.278565628	0.370277406
I find it difficult to track m	0.247100722	0.018211765	13.56819215	7.03704E-36	0.21131883	0.282882614	0.21131883	0.282882614
Promotional offers/cash ba	0.246945278	0.020066025	12.30663647	1.49134E-30	0.207520194	0.286370362	0.207520194	0.286370362

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The core of the analysis was a multiple linear regression model that tested the impact of digital payment-related factors on consumer spending habits.

Interpretation: The regression model demonstrated a strong explanatory power with an R^2 value of 0.8539, indicating that approximately 85.39% of the variance in consumer spending behaviour can be explained by the independent variables included in the model. The adjusted R^2 value of 0.8528 confirms that even after accounting for the sample size and number of predictors, the model maintains a high level of explanatory strength. Furthermore, the F-statistic ($F = 723.54$, $p < 0.001$) indicates that the overall model is statistically significant, suggesting that the predictors jointly have a substantial impact on consumer spending behaviour. These results confirm the robustness and reliability of the model in explaining variations in spending patterns associated with digital payment usage.

This confirms that digital payment related behavioural variables have a strong and measurable influence on consumer spending.

Coefficients and Significance

Impulse Buying ($\beta = 0.324$, $p < 0.001$) :

This was the strongest predictor of consumer spending habits. Consumers who scored higher on impulse buying tended to spend significantly more when using digital payments. The ease of clicking to pay, coupled with app-based purchase prompts, appears to encourage unplanned spending. This finding is consistent with psychological theories that reduced "pain of paying" leads to impulsive purchases.

Expense Tracking Difficulty ($\beta = 0.247$, $p < 0.001$):

The second strongest predictor was the difficulty of tracking expenses. Respondents who reported challenges in monitoring their outflows when using multiple payment apps tended to overspend. This reflects the fragmented nature of digital payments, where consumers may lose sight of cumulative expenses.

Promotional Offers ($\beta = 0.247$, $p < 0.001$):

Promotional offers such as cashbacks, discounts, and reward points were another significant driver. Consumers indicated that such offers encouraged them to spend more than they normally would, often making purchases they did not initially intend.

Percentage of Monthly Spending Digitally ($\beta = 0.019$, $p = 0.31$) :

Interestingly, the sheer proportion of expenses conducted via digital payments was not statistically significant. This means that it is not the extent of digital payment adoption that drives spending changes, but rather the behavioural triggers associated with digital usage (impulsiveness, difficulty tracking, and promotions).

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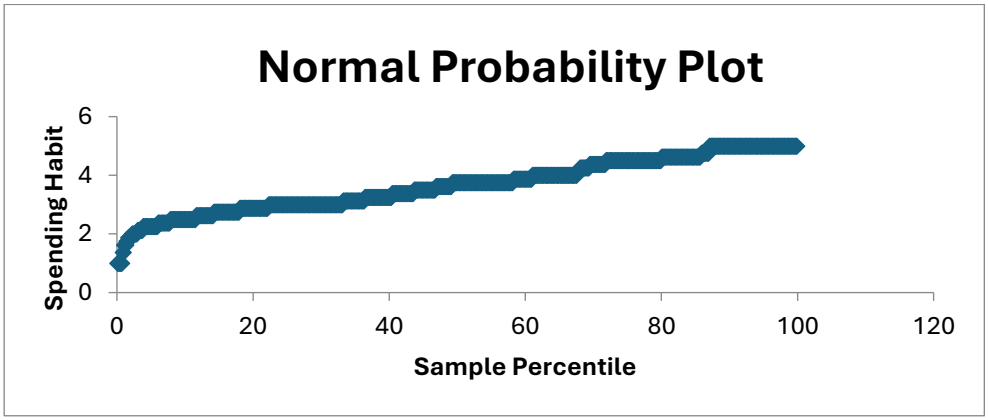
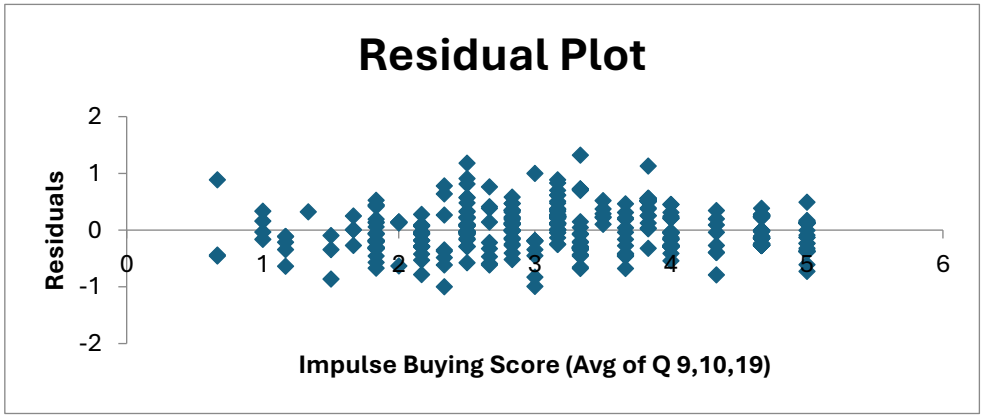


This plot checks if the data (ideally the residuals, but here plotted for the dependent variable) follows a normal distribution. For normality, the points should fall closely along a straight line.

The normal probability plot (P–P plot) of the regression standardized residuals displays a slight S-shaped curvature, particularly at the tails, indicating a minor deviation from perfect linearity. This pattern suggests a slight departure from the assumption of normality in the residual distribution. However, considering the large sample size, the Central Limit Theorem (CLT) ensures that the sampling distribution of the residuals approximates normality even in the presence of such minor deviations. Therefore, this departure is not considered a serious concern, and the regression model can be regarded as robust with respect to the normality assumption.



This plot graphs the residuals (the prediction errors) against one of the independent variables. We are looking for a random scatter of points.

The scatter plot of the standardized residuals against the predicted values reveals that the residuals are **randomly dispersed around the horizontal axis at zero**, with **no visible systematic pattern**, curvature, or funnel shape. This random distribution indicates that the **assumptions of linearity and homoscedasticity** are satisfied. Specifically, the relationship between the independent variables and the dependent variable appears to be **linear**, and the **variance of the residuals remains constant** across all levels of predicted values. Hence, the model demonstrates **no evidence of heteroskedasticity or non-linearity**, confirming its suitability for regression analysis.

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Hypothesis Testing

The hypotheses set at the start of the study were:

H_o: Digital payment methods have no significant effect on consumer spending habits.

H_1: Digital payment methods have a significant effect on consumer spending habits.

Given that Impulse Buying, Expense Tracking Difficulty, and Promotional Offers were all statistically significant predictors with p-values < 0.001, the null hypothesis (H_o) is rejected. The alternative hypothesis (H_1) is accepted, indicating that digital payment methods do significantly affect consumer spending habits.

Behavioural Findings

The findings from both the descriptive statistics and regression analysis reveal several notable behavioural patterns associated with digital payment usage:

Impulse Buying and Reduced Spending Control: The results suggest that digital payment systems lower the psychological barriers to purchase, thereby encouraging **impulsive buying behaviour**. The frictionless nature of such transactions reduces the perceived pain of payment compared to cash, leading consumers to make purchases they might otherwise reconsider.

Fragmented Expense Tracking: The proliferation of multiple digital payment platforms (e.g., UPI, wallets, cards) has led to fragmentation in expense monitoring. This dispersion of financial activity across various channels makes it challenging for users to maintain a consolidated view of their spending, thereby weakening financial discipline and budgeting control.

Promotions as Spending Triggers: The study identifies that **promotional offers, cashback schemes, and discounts** serve as significant psychological triggers that nudge consumers toward unplanned expenditures. These incentives not only enhance digital payment adoption but also subtly alter spending intentions and behaviour.

Adoption Level Alone is Insufficient: The analysis further reveals that **mere frequency of digital payment usage** does not inherently cause overspending. Instead, **behavioural mediators** such as impulsivity, perceived convenience, and financial self-control—play a more critical role in determining whether digital payment adoption translates into excessive consumption.

Demographic Insights from Behavioural Findings

The analysis further reveals distinct behavioural patterns across demographic segments, indicating that consumer responses to digital payment systems are not homogeneous:

Age-Based Differences**:** Younger respondents displayed the highest levels of impulsivity, being strongly influenced by the speed and convenience of digital transactions. In contrast, older consumers exhibited greater caution, emphasizing the importance of expense tracking and expressing concerns about maintaining financial discipline through digital platforms. This highlights a clear generational gap in financial behaviour and adaptability to digital tools.

Income-Based Differences**:** Respondents from higher-income brackets were found to be more responsive to promotional offers and incentives such as cashback and rewards. Their spending appears to be strategically motivated by value maximization, suggesting that promotional mechanisms play a key role in shaping consumption patterns among affluent users.

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Gender-Based Differences**:** The study identifies that women tend to be more promotion-sensitive, responding more actively to marketing incentives and discounts, whereas men demonstrate slightly higher overall adoption levels of digital payment methods. This distinction reflects underlying behavioural motivations and marketing responsiveness across genders.

Overall, these demographic differences suggest that digital payment service providers should adopt differentiated engagement strategies that cater to specific consumer groups emphasizing convenience and rewards for younger and high-income users, while offering stronger financial tracking and security features for older consumers.

Conclusion

The research aimed at examining the impact of the digital payment methods on consumer spending behaviours, and the impact of the behavioural influences on consumer spending behaviours through impulse buying, expense difficult to monitor, and supplier promotions. Digital payments are highly convenient and efficient, but at the same time, introduce new behavioural trends that contribute to the increased chances of spending intensively.

The descriptive analysis revealed that most of the respondents responded that digital payments would make spending easier, the pain of paying would be lower and will make the respondents purchase a product on impulse. Regression analysis also supported the claim that changing the consumer spending habits are most likely to be predicted by impulse buying, expense tracking difficulty and the offers made. Interestingly, the amount of expenditure by any means, except the digital ones, alone were not substantial. This underscores the fact that adoption alone does not determine such people, but the interaction of people with online mediums that influence their financial behaviour.

It was also shown that there was demographic variation in the study. The younger age bracket and the better earnings group was more prone to overspending and use of promotional offers whilst the older users of the product found it more difficult to keep track of the expenditure. It illustrates that not all people receive the same benefit of digital payments, and policies to facilitate responsible use need to be made depending on various groups of people.

The findings are against the notion that digital payments are a dispassionate instrument. Rather they explicitly affect behaviour, lowering friction, enhancing impulsiveness and having spending impetus via promotional nudges. This not only has significant effects on an individual scale, but in terms of household and financial wellbeing and the economy in general.

Nevertheless, the research also recognises the limitation. The sample was largely urban and digitally engaged and research was carried out at a point of time. The future study needs to broaden respondents to rural setting, low scale households and follow up behaviours with more durations. Further, some emerging technologies, such as CBDCs and blockchain, can change the spending behaviour, which should be explored more.

To sum up, digital payments are not only an extremely strong force that causes financial inclusion but also a delicate manipulation of consumer psychology. They ease the burden but could loosen the disciplined aspect of savings when held irresponsibly. The Indian society and the history of the world is shifting towards becoming cashless, and it is evident that we require financial literacy, accountable and responsible development of apps and policy guarantees that the positive upsides of digital payment have no impact on the financial standing of consumers.

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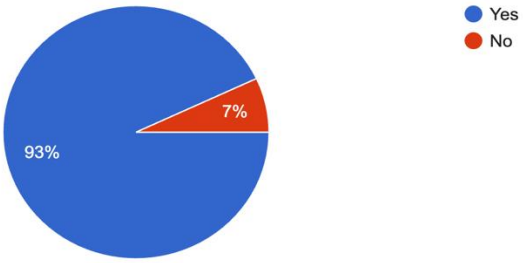
Annexures

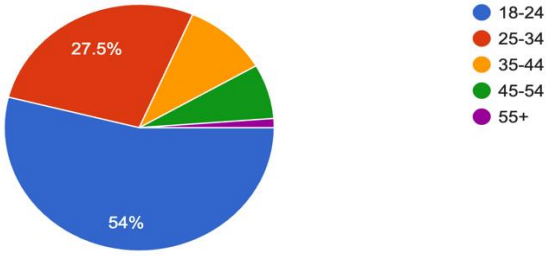
1.

Do you regularly use digital payment methods such as UPI, mobile wallets, debit/credit cards?
502 responses



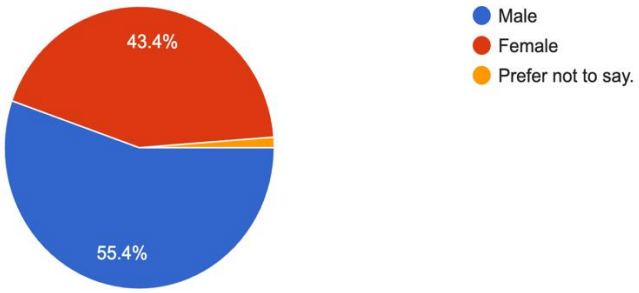
2.

Age group
502 responses



3.

Gender
502 responses



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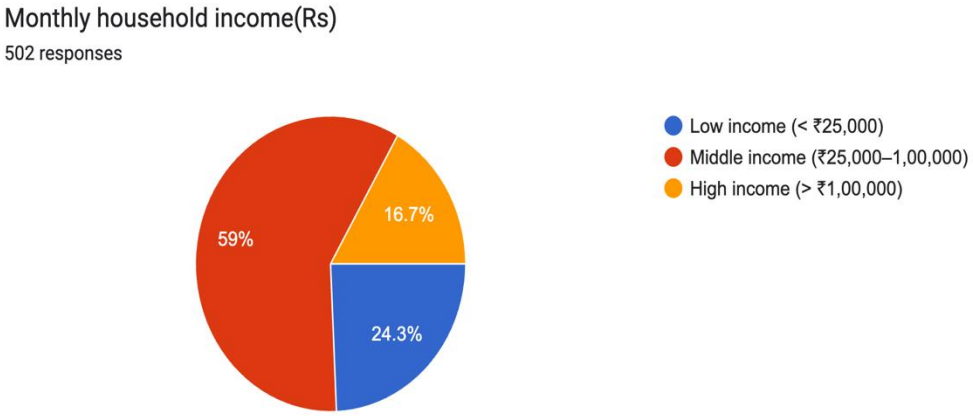

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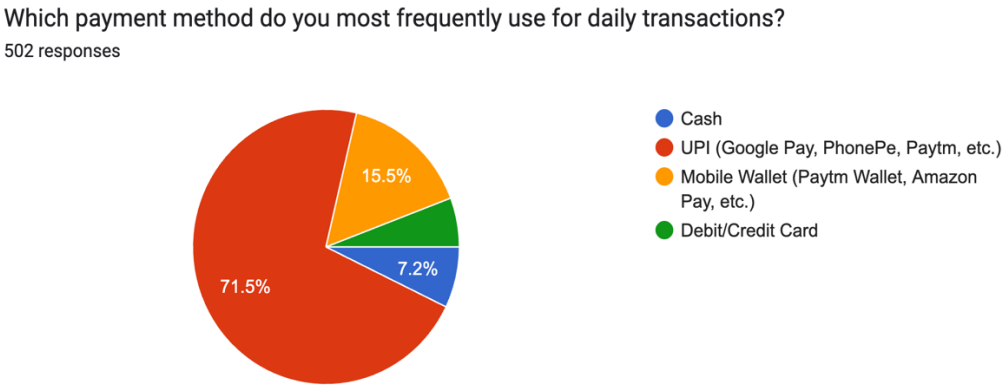

6.

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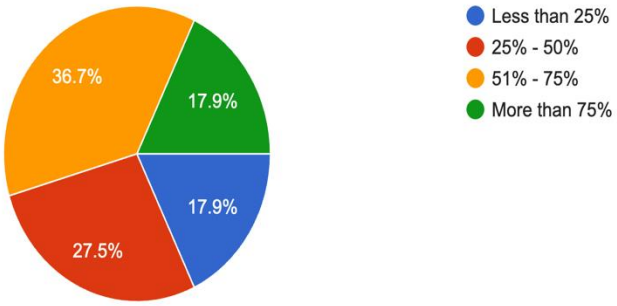
Which payment method do you most frequently use for daily transactions?
502 responses

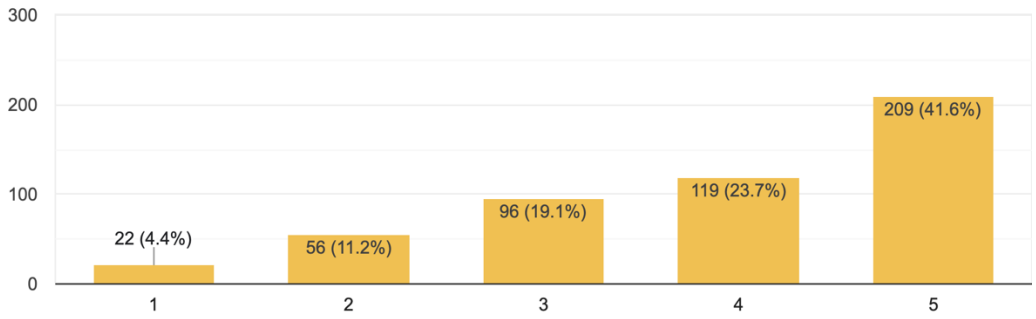
7.

On average, what percentage of your monthly spending do you make using digital payments?
502 responses



8.

Using digital payments makes it easier for me to spend money.
502 responses



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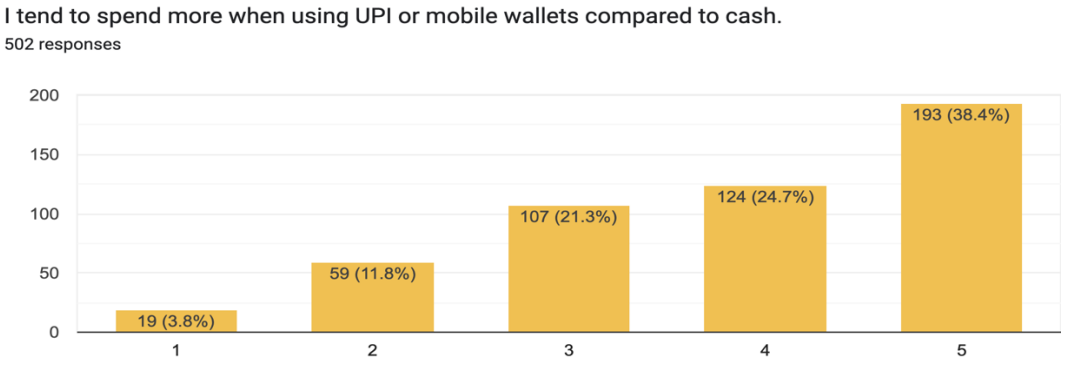
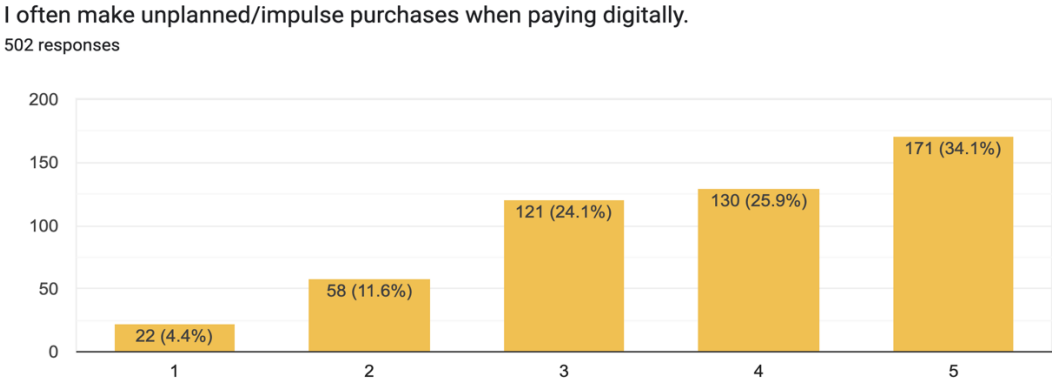
9.



10.



11.

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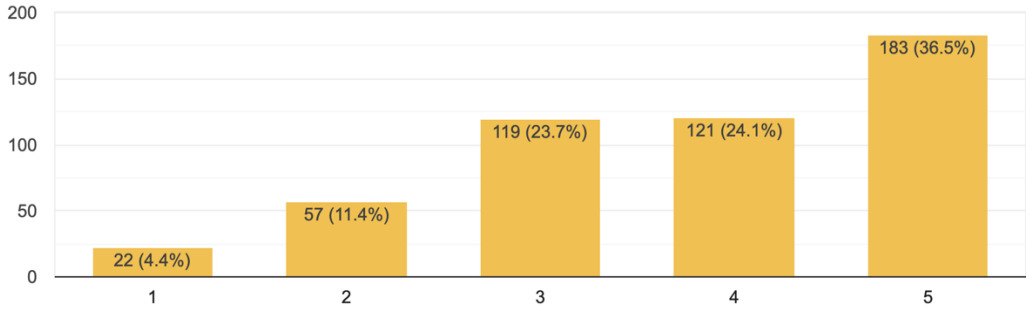
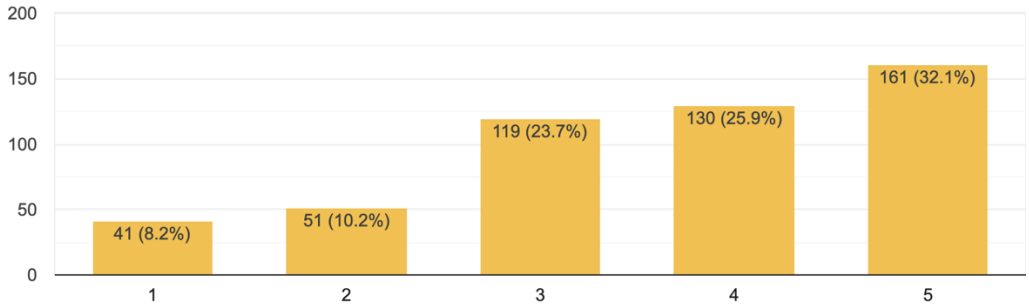
I feel less "pain of paying" when I swipe/tap instead of paying with cash.
502 responses



12.

I find it difficult to track my expenses when using multiple digital payment apps.
502 responses



13.

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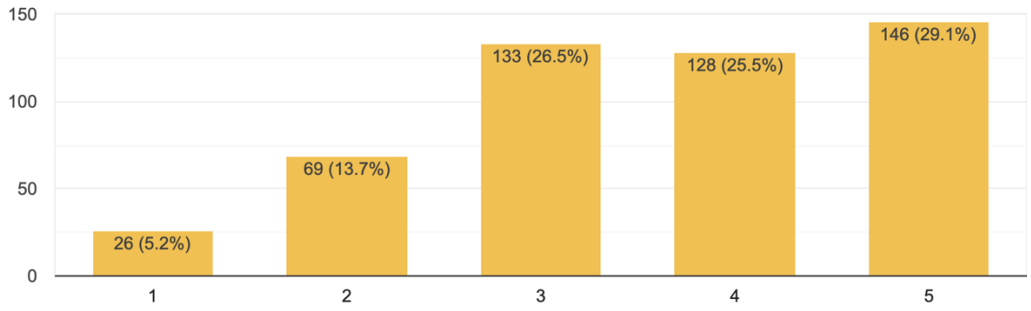
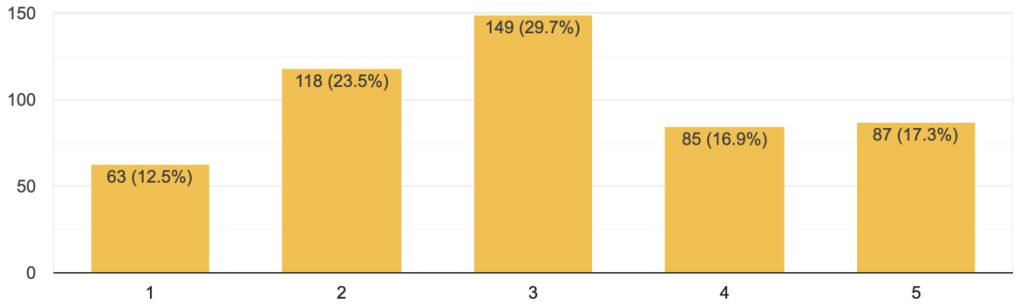
Promotional offers/cash backs on digital payments encourage me to spend more.
502 responses



14.

I feel in control of my finances when using digital payment methods.
502 responses



15.

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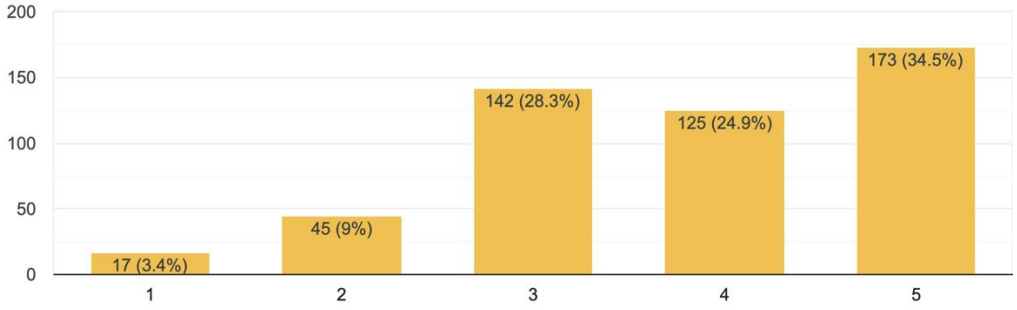
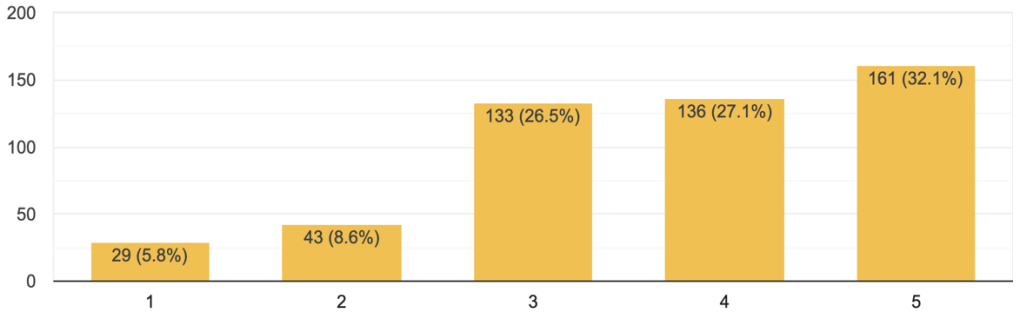
Since adopting digital payments, my monthly spending has increased.
502 responses



16.

My savings discipline has reduced after adopting digital payments.
502 responses



17.

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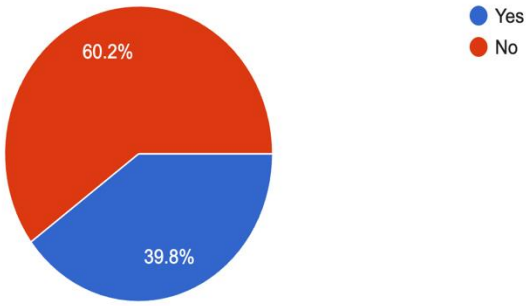
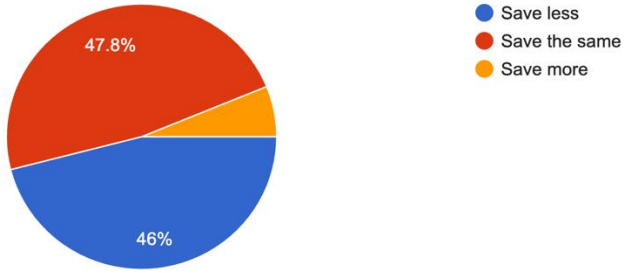
I set limits on my monthly digital spending.
502 responses



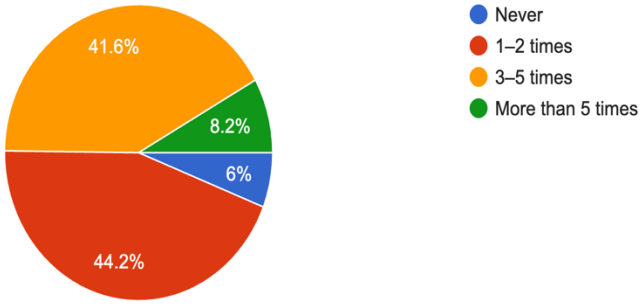
18.

Compared to cash, digital payments make me:
502 responses



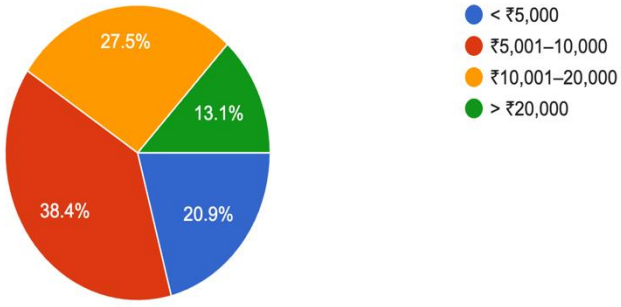
19.

In the last month, how often did you make purchases you had not planned in advance (impulse buys)?
502 responses



20.

Average monthly spending using digital payments:
502 responses



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