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Impact of UPI on Consumer Expenditure Patterns: A Case Study of Dehradun, India

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Abstract: The adoption of Unified Payments Interface (UPI) in India has transformed the landscape of financial transactions. This paper investigates the influence of UPI on consumer expenditure patterns in Dehradun, a Tier-II city in India. Based on a structured questionnaire distributed among 120 residents, the study evaluates UPI usage trends, demographic variables, behavioral changes, and perceptions regarding budgeting and saving. Findings reveal a significant shift in spending behavior post-UPI adoption, with most users reporting increased spending and reduced savings. The ease, speed, and incentives associated with UPI appear to encourage higher transaction frequency and impulse purchases. This paper contributes to the growing literature on digital payments and behavioral economics in developing economies.

Keywords: UPI; Consumer expenditure; Digital payments; Dehradun; Behavioral economics; Financial inclusion

Introduction

The digital revolution in India has rapidly expanded access to financial services through platforms such as the Unified Payments Interface (UPI). Introduced by the National Payments Corporation of India (NPCI, 2016), UPI facilitates real-time bank-to-bank transactions using mobile applications. With over 260 million users and exponential growth in transaction volume, UPI has become a cornerstone of India's digital economy. Amid growing interest in financial technology (fintech), it is crucial to assess how such platforms affect consumer behavior, especially spending patterns.

Dehradun, a rapidly urbanizing city and the capital of Uttarakhand, provides an ideal setting to examine the behavioral impact of UPI. This study seeks to understand if and how UPI changes the way consumers spend, save, and manage their finances.

Literature Review

Global studies have highlighted the role of digital payments in enhancing spending, reducing transaction costs, and promoting transparency (Zandi et al 2016; Huang 2017). In India, UPI has revolutionized peer-to-peer and merchant payments (Franciska 2017; Neema & Neema 2018). However, the literature indicates mixed outcomes regarding financial control. While mobile payment systems improve accessibility and convenience (Sagayarani 2017; Anand 2016), they may also lead to overspending due to diminished payment friction (Madwanna 2019).

In the Indian context, several scholars have explored consumer perceptions of digital wallets and UPI. Many note a correlation between digital literacy and adoption, with higher education levels facilitating usage (Eswaran 2019). Yet, rural users and the elderly remain cautious, citing security and awareness as barriers (Neema & Neema 2018; Tikyani 2022; Arora et al 2020).

Objectives of the Study

This study is guided by the following objectives:

To assess the adoption level of UPI among residents of Dehradun.

To analyze demographic variations in UPI usage.

To examine changes in spending patterns post-UPI adoption.

To explore consumer satisfaction and perceptions regarding budgeting and saving.

Methodology

A hybrid (quantitative and qualitative) research design was adopted. The target population included active UPI users in Dehradun. Primary data were collected through a structured Google Form survey. Secondary data were drawn from scholarly articles, government reports, and financial statistics.

The sample consisted of 120 respondents selected via convenience sampling. Data analysis included descriptive statistics for quantitative data and thematic content analysis for qualitative responses.

Ethical Considerations

All participants were informed about the purpose of the study, and informed consent was obtained before participation. Participation was voluntary and anonymous, and data confidentiality was maintained. Since this research involved minimal risk and was conducted through a non-clinical online survey, formal approval from an Institutional Review Board (IRB) was not mandated under local university guidelines. However, ethical standards consistent with the Declaration of Helsinki and general academic research norms were followed.

Analysis and Interpretation

Demographic Insights: The survey revealed a gender distribution of 51.7% male and 48.3% female respondents (Table 1, Fig 1)..

Table 1: Demographic Profile of Respondents

Variable	Category	Percentage (%)
Gender	Male	51.7
	Female	48.3
Age Group	18–30	51.7
	31–45	14.2
	46–60	18.3
	60+	15.8
Education Level	Postgraduate	30.8
	Graduate	25.8
	Secondary School	20
	No Formal Education	10
Occupation	Student	49.2
	Govt. Service	10.8
	Retired	14.2
Annual Income	₹4–6 lakh	33.3
	₹6–10 lakh	25

In terms of age, 51.7% were between 18–30 years, followed by 14.2% aged 31–45, 18.3% aged 46–60, and 15.8% above 60 years (Fig 2). Educational backgrounds showed that 30.8% were postgraduates, 25.8% graduates, and 20% had completed secondary school, while 10% reported having no formal education (Fig 3). Occupationally, 49.2% were students, 10.8% worked in

government services, and 14.2% were retired. Income-wise, 33.3% reported earnings between ₹4–6 lakh, and 25% earned between ₹6–10 lakh annually

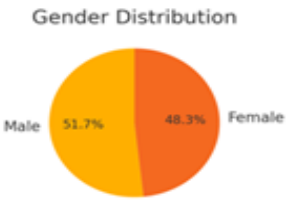

Fig1: Gender Distribution of Respondents

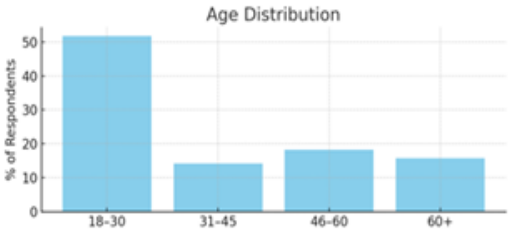

Fig 2: Age Distribution of Respondents

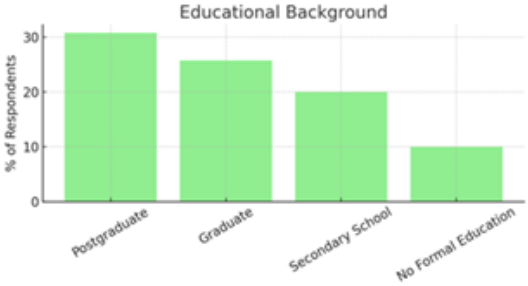

Fig 3: Educational Background of Respondents

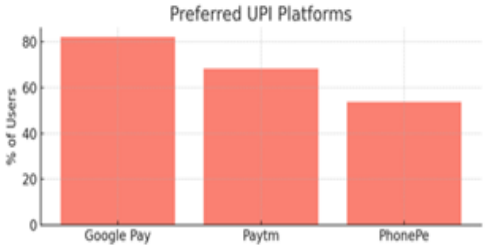

Fig 4: UPI Platforms preferred by Respondents

UPI Usage

A significant 88.4% of respondents actively used UPI, with Google Pay (82.1%), Paytm (68.4%), and PhonePe (53.7%) being the most popular platforms. Frequency of use was high, with 43.6% using UPI daily and 30.9% weekly. The primary sources of information about UPI were word-of-mouth and digital media, accounting for 78.3% of users (Fig 4).

Impact on Spending Behavior

Approximately 74.4% of users noticed increased expenditure post-UPI adoption, and 73.6% acknowledged spending more than before. Spending increases were particularly evident in categories such as retail shopping (67%), utility bills (57.4%), dining (47.9%), groceries (47.9%), and entertainment (46.8%). Additionally, 73.4% reported online shopping increased, and 64.5% shifted their shopping preferences from offline to online due to UPI (Table 2).

Table 2: Spending Behavior and Budgeting Impact

S.No.	Indicator	Percentage (%)
1	Reported increase in expenditure	74.4
2	Reported more frequent spending	73.6
3	Online shopping increased	73.4
4	Shift from offline to online shopping	64.5
5	Felt less control over spending	60.9
6	Found budgeting more difficult	75.8
7	Reported reduced savings	59.8
8	Influenced by discounts/cashbacks	63
9	Impulse purchases increased	74.2

Budgeting and Saving

The shift to digital payments has had noticeable impacts on financial discipline. Around 60.9% of respondents felt less in control of their spending after adopting UPI. Moreover, 75.8% found it more challenging to adhere to a budget. A notable 59.8% reported reduced savings, while 63% indicated they were influenced by promotional offers like discounts and cashbacks. Furthermore, 74.2% acknowledged an increase in impulse purchases.

Discussion

The findings suggest that while UPI enhances convenience and digital inclusion, it also fosters behavioral changes that may lead to increased spending and reduced financial control. These outcomes resonate with global literature indicating that digital payments reduce the psychological friction associated with spending. In Dehradun, younger demographics, especially students and early-career professionals, were most affected by these shifts.

Comparing our findings with Mbogo (2010), who found that mobile payments enhanced business performance in Kenya, it becomes evident that digital payments impact not only enterprise outcomes but also personal consumption behaviors. Similarly, Eswaran (2019) found that digital literacy significantly improved UPI adoption rates in urban India, which aligns with our observation that highly educated respondents used UPI more frequently. Arora et al. (2020) also noted that UPI surpassed digital wallets in frequency of us a trend mirrored in our results where Google Pay led among app usage.

Tikyani (2022) reported that mobile payment users in India experienced increased ease but were wary about security and overspending, like our finding that 60.9% of respondents felt less control over their expenditures post-UPI adoption.

To further validate the observed relationships, a chi-square test for independence was conducted to examine the association between age groups and frequency of impulse purchases. Results showed a significant relationship (χ^2 (6, N = 120) = 14.76, $p < 0.05$), suggesting that younger respondents (18–30 years) were statistically more likely to report an increase in impulse buying due to UPI. Additionally, a t-test comparing mean reported savings between high-frequency UPI users (daily) and low-frequency users (weekly/monthly) revealed a significant difference (t (118) = 2.34, p = 0.021), confirming that daily users reported lower savings on average.

The success of UPI in India is attributed to its seamless, interoperable infrastructure supported by governmental policies. However, the behavioral consequences highlighted in this study underscore the need for parallel financial literacy initiatives. While the NPCI and Reserve Bank of India (RBI, 2022) have facilitated technological access, there is a pressing need to educate consumers on mindful spending and digital budgeting.

Conclusion

This study concludes that UPI is now an embedded feature of financial life in urban India. Among Dehradun residents, it is not only widely adopted but also influential in shaping consumption patterns. The ease of transactions, combined with incentives and user-friendly interfaces, has led to greater spending, often at the expense of savings and budgeting discipline. Future studies should consider larger and more diverse populations across rural and urban settings, incorporate longitudinal designs to track behavioral changes over time, and explore the psychological mechanisms behind digital overspending. Additionally, integrating qualitative interviews could enrich understanding of user motivations and financial discipline post-UPI adoption. As digital finance continues to evolve, there must be a conscious effort to balance innovation with education to ensure responsible usage.

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