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Data Mining and Analytics Mini Project

Currency Usage Patterns – A Survey-Based Analysis

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Introduction

- In today's digital era, the way people handle money is rapidly evolving.
- This study focuses on understanding spending habits, saving behavior, and the growing shift toward digital payments.

Motivation:

- Digital payments are now part of everyday life.
- Understanding these trends helps improve **financial awareness** and **digital safety**.
- To study how people spend, save, and make payments.
- To analyze the shift from **cash** to **digital transactions**.

Data Set Overview

Currency Usage Patterns Dataset

	Timestamp	Email address	Age Range ?
1	07-09-2025 18:51	anjalibanothu6@gmail.com	18 - 25
2	07-09-2025 18:52	vskr.cs.23@nitj.ac.in	18 - 25

Google form link

Total responses: 198

Attributes: 17

Key columns:

- Age
- Gender
- Payment Method
- Savings %
- Fraud, etc.

Preprocessing Steps

1

Data Cleaning

Removed irrelevant columns, handled missing values, fixed inconsistencies.

2

Standardization

Unified text case, merged duplicate spellings like *“Phone pay” → “PhonePe”*.

3

Encoding Categorical Data

Converted categorical data (like gender, payment type) into numeric dummy variables.

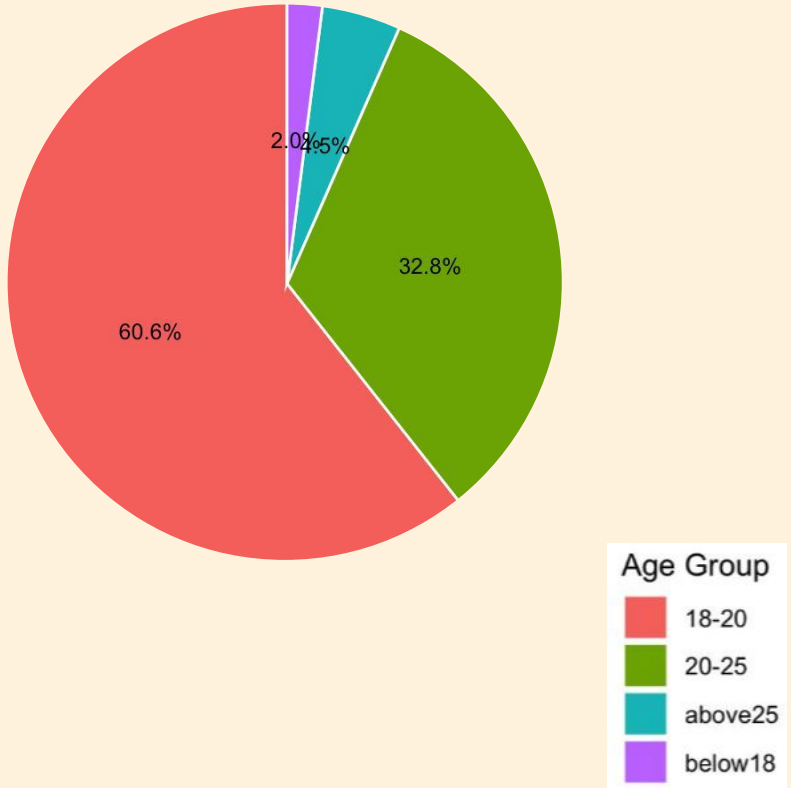
4

Data Transformation/ Normalization

Scaled all values between 0–1 using Min–Max normalization for uniformity.

Aspect	Before Preprocessing	v/s	After Preprocessing
Columns	17		49
Missing Values	Present		None
Data Type	Mixed(Text+Numeric)		Fully Numeric
Range	Irregular		0–1 (Normalized)
Consistency	Inconsistent text entries		Standardized, clean data

After preprocessing, the dataset became clean, consistent, and machine-readable ready for visualization and modeling.

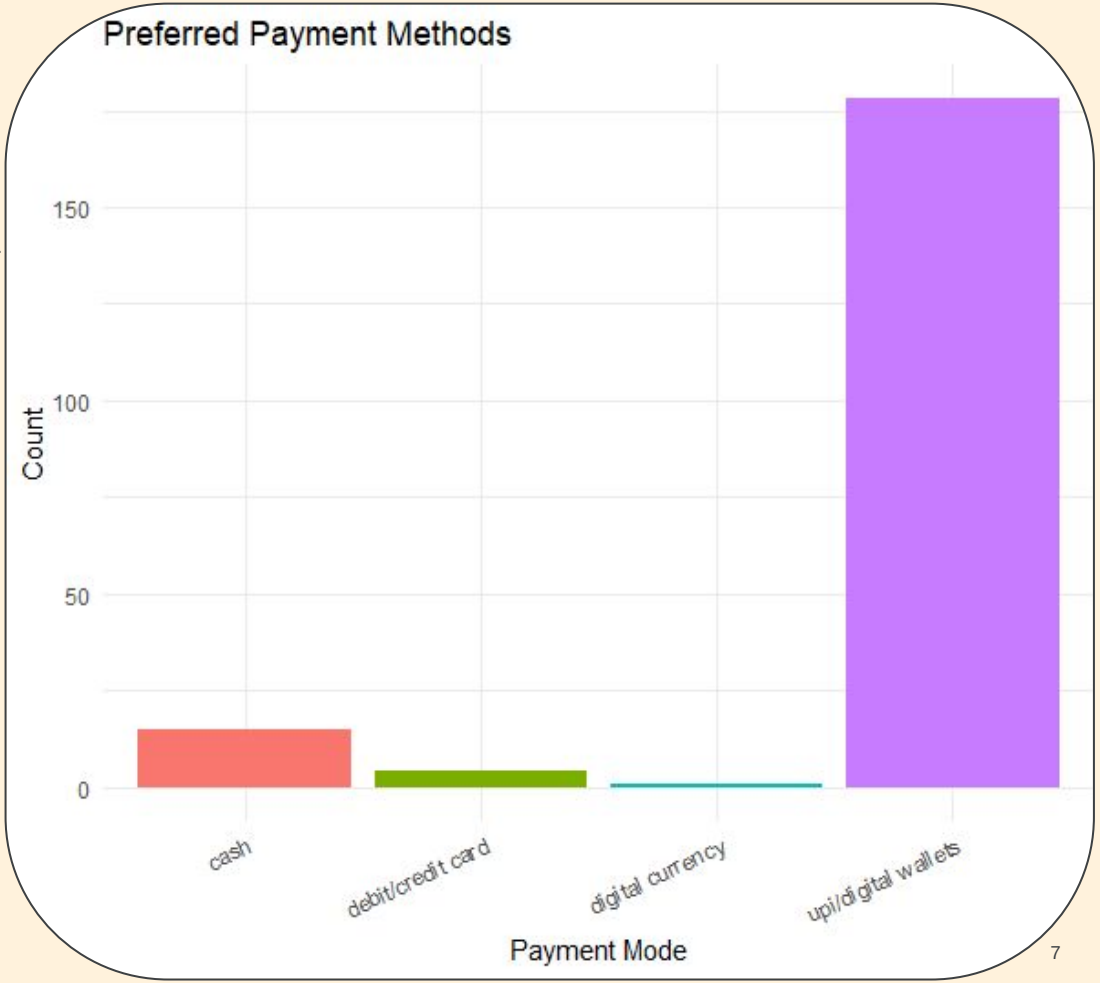


Demographic Insights

- **Majority** of respondents (≈92%) belong to the **18–25 age group.**
- **71%** respondents are male, and most are **college students.**
- Working professionals form about 12% of the total.

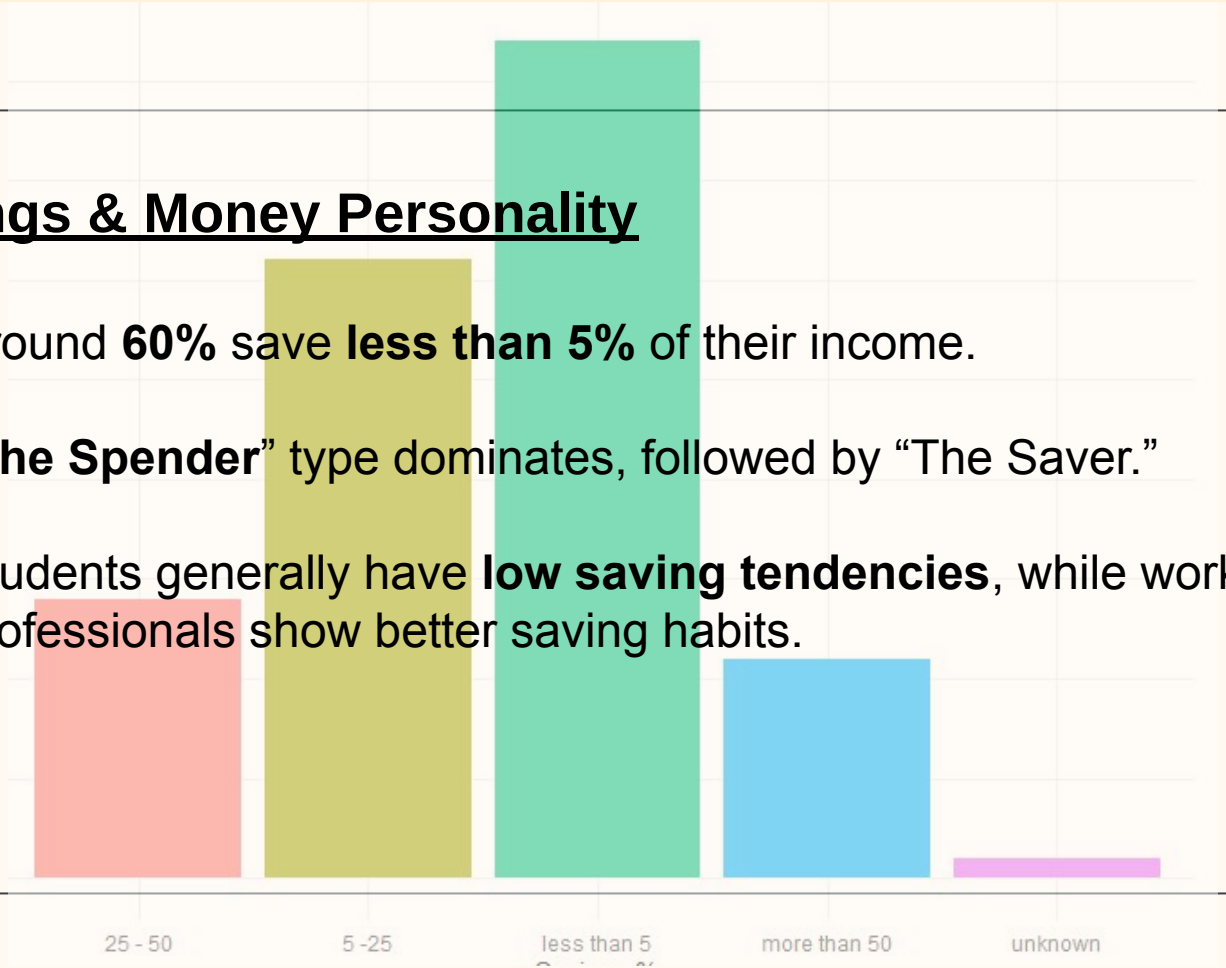
Spending & Payment Behavior

- **UPI/Digital Wallets** are used by ~90% of respondents.
- **Cash** and **Cards** are used occasionally (<10%).
- The most common monthly spend range is **₹500–₹2000**.
- **PhonePe** and **Google Pay** are the dominant UPI apps.



Savings & Money Personality

- Around **60%** save **less than 5%** of their income.
- “**The Spender**” type dominates, followed by “The Saver.”
- Students generally have **low saving tendencies**, while working professionals show better saving habits.



Digital Awareness & Cryptocurrency

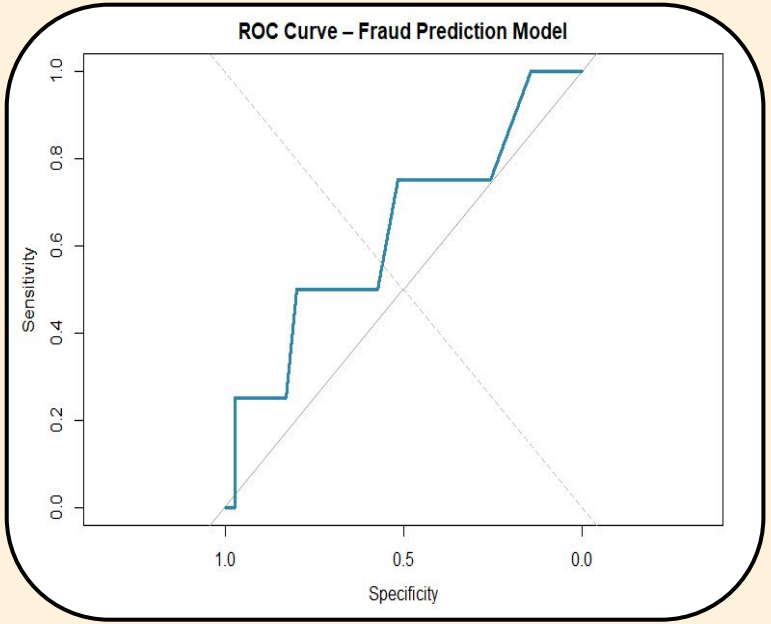
- ~55% are **slightly familiar** with digital currencies.
- Only **15%** have **ever used or purchased** cryptocurrency.
- Users with **higher familiarity** tend to give **better security ratings**.

Fraud & Security Analysis

- Only **10%** of respondents have **faced financial fraud**.
- Those users generally report **lower trust** in online banking.
- Correlation shows a weak negative link between **fraud experience** and **security perception** (AUC = 0.63).

Predictive Modeling

Model Used: Logistic Regression
Target Variable: Fraud Experience (Yes/No)
Accuracy: 89.74%
AUC: 0.63
Key Predictors: Security rating, UPI usage, crypto familiarity, savings %
Interpretation: Model predicts non-fraud cases accurately, limited by data imbalance.



Key Inferences

1. Youth (18–25) dominate digital payments and prefer UPI over cash.
2. Most users save less than 5% — impulsive spending is common.
3. Limited cryptocurrency awareness but growing interest.
4. Trust and digital literacy influence fraud risk.
5. Logistic regression achieved 89.7% accuracy (AUC = 0.63).

This study reflects the financial evolution of India's digital generation — highlighting trends, awareness, and risk behaviors shaping our cashless future.

Thank you