

## Detailed Analysis of the given Payment Transactions

### Main objects used in Python:

**d1= data sorted by hr and success\_rate**

**d2= records having success rate less than 50%, sorted**

**d3= top 20 records having success rate less than 50%, sorted**

**d4= records having success rate more than 50%**

### Exploring given Data Set:

1. Total transactions are **19307**
2. Total number of **Unsuccessful Transactions** are **3390** and the rest **15917** are **Successful Transactions**
3. Total number of records where the **success rate** is **less than 50%** is **4905**
4. **19 unique payment gateways** + 1 NULL value
5. **5 unique payment types**
6. **318 unique banks**
7. **4 unique sub-types** + 1 NULL value
8. **8 unique merchants**
9. **72 unique hr values**

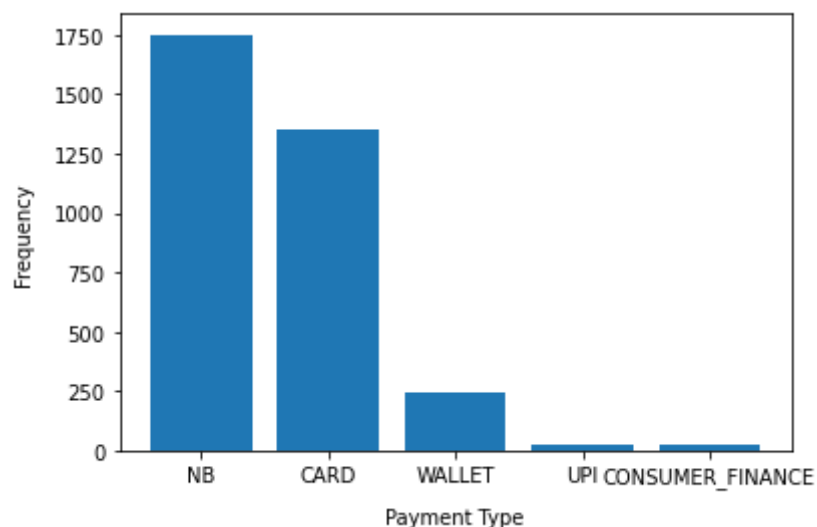
***Sub\_type** has NaN*

***Pg** is having NaN*

***Bank** is having NaN*

## Insights:

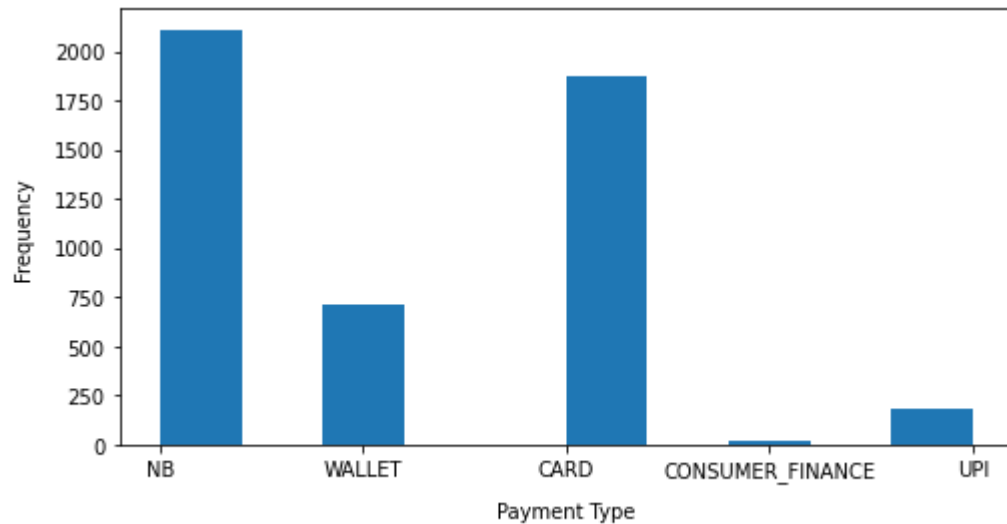
- While viewing the records with different **Payment Types** and **Success Rate= 0%**, 3390 unsuccessful transactions
  - A. WALLET~ 242
  - B. CARD~ 1348
  - C. NB~ 1751
  - D. UPI~ 27
  - E. CONSUMER\_FINANCE~ 22
- From the graph, it is evident that with payment type (**pmt= NB**), the **success rate is always 0**, followed by **Card & Wallet**
- Consumer Finance and UPI hold negligible importance here



**Fig. 1 Top 5 Payment Gateways when success rate is 0**

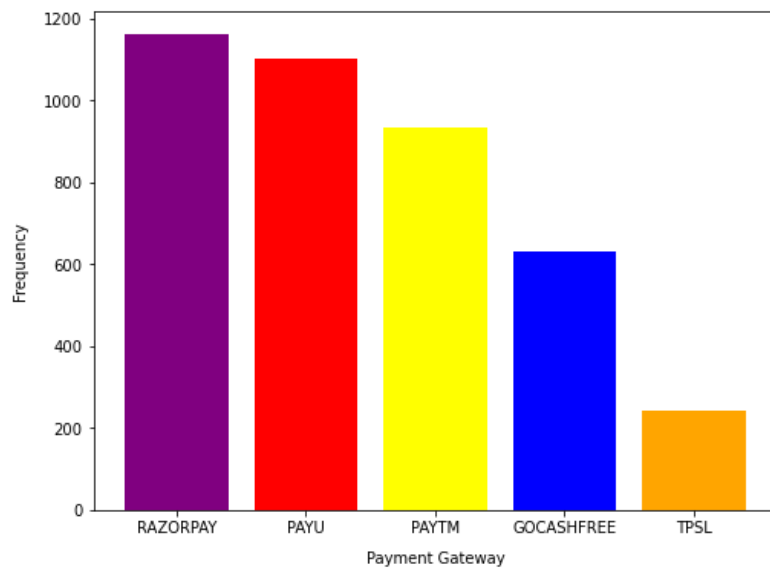
1. **UNSUCCESSFUL** transactions are highest when the Payment Type is **Net Banking (1751)** followed by **CARD (1348)**

2. While analysing the histogram (from d2) for the success rate less than 50%, Net Banking is the payment method which is used more often, followed by Card, Wallet, UPI & Consumer\_Finance



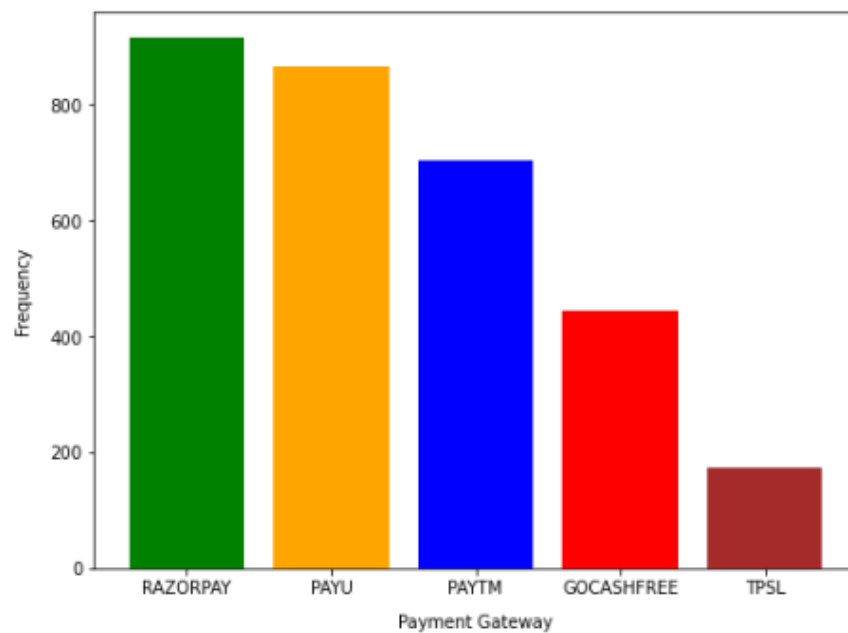
**Fig. 2 Payment Methods and their frequency when the success rate is less than 50%**

3. Graph between the top 5 **Payment Gateways** and their frequencies show that most used payment gateway is Razorpay followed by PAYU, PAYTM, GOCASHFREE, TPSL when the success rate is less than 50%



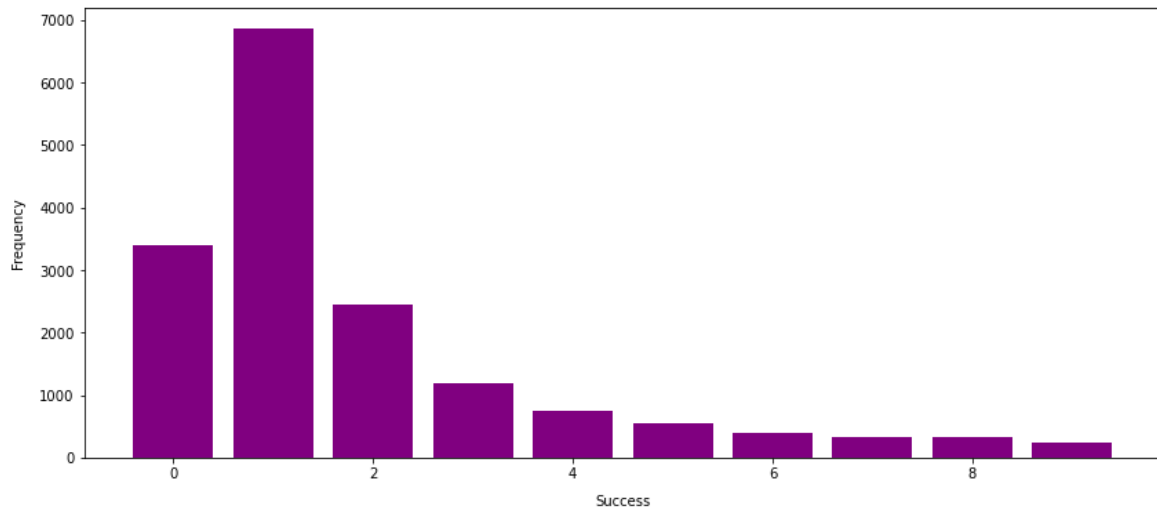
**Fig. 3 Top 5 Payment Gateways when success rate <50%**

4. Top 5 payment gateways (from d1) when success rate is 0, we can say that **Razorpay** is on the top

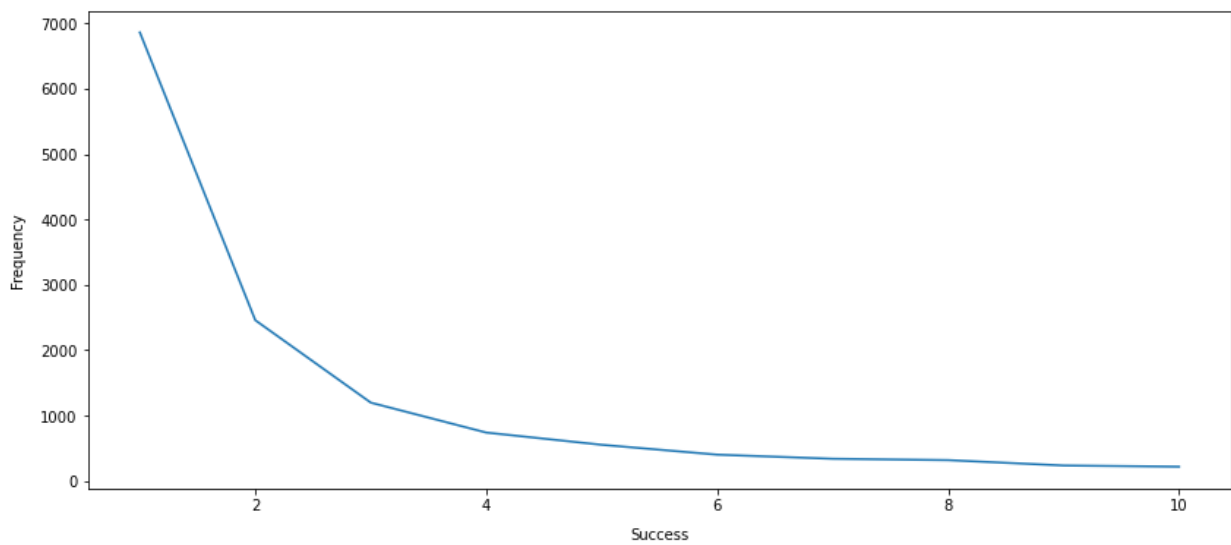


**Fig. 4 Top 5 Payment Gateways when success rate is 0**

5. Frequency of single transaction is more when success & its frequency is plotted



**Fig. 5 Frequency of top 10 transactions (both successful & unsuccessful)**



**Fig. 6 Frequency of top 10 successful transactions using Line Graph**

**Ans 2.** We could have detected this issue before anyone reporting, by applying the following practises:

- a) taking regular updates from the companies offering the payment gateway & payment processor services, to check if a successful payment can be made at a particular time or not
- b) as payment gateway is a tool which approves/declines the transaction, would make more sense updating the customers before they're making any transactions
- c) navigating the customer to that payment gateway which is being used more often as it will ensure reliability
- d) also, ensuring regular updates from various payment services (UPI, Wallets, Cards etc.) could be beneficial