REQUIREMENT ELICITATION

(PAYMENT GATEWAY)

For the requirement elicitation of payment gateway part of the platform, we used the following Elicitation Techniques:

1. Documentation Analysis
2. Survey Form/Questionnaire

➢ **Documentation Analysis:** In this part we reviewed the pre-existing systems similar to our project and analyzed the documentation of popular payment gateways for API integration like Razorpay and Paytm gateway.

- We have referred to the following sources for documentation analysis: -
  1. Razorpay Payment Documentation: https://razorpay.com/docs/payments/
  2. Razorpay API Reference Guide: https://razorpay.com/docs/api/
  3. Shopify Payment Flow Documentation: https://shopify.dev/docs/api/payments-apps
  4. Paytm Documentation: https://www.paytmpayments.com/docs

➔ After reviewing the above-mentioned documentation, the following is a brief report summarizing the contents studied:

The Razorpay API Reference provides detailed information about the various REST endpoints used to handle core payment operations such as creating orders, processing payments, issuing refunds, managing customers, and verifying settlements. It highlights the importance of secure authentication using API keys, communication over HTTPS, proper handling of error codes, and implementing webhooks for real-time payment status updates. The Quick Integration Guide outlines a streamlined approach to setting up Razorpay, starting from generating API keys, integrating the Checkout form, capturing and verifying payments, testing through the Sandbox environment, and finally switching to Live mode. This serves as a step-by-step process that is especially useful for beginners, as it includes both client-side and server-side code snippets for easy adoption. Furthermore, the Checkout.js (Standard Web Integration) documentation explains the use of Razorpay's hosted checkout interface that supports multiple payment methods including cards, UPI, wallets, and net banking, while also providing customization options such as branding and pre-filled customer details. It emphasizes embedding the Checkout script, securely passing order details, and ensuring a seamless transition from testing to production.

In parallel, the Shopify payments documentation was referred to in order to study how large-scale e-commerce platforms structure their payment flows. Shopify's guidelines illustrate the complete checkout journey from cart creation, order placement, and customer authentication to payment authorization, capture, and settlement. They emphasize how payment gateways must integrate seamlessly into the merchant's backend, maintain consistency of the order state, and notify both buyers and sellers with clear status updates. Additionally, Shopify highlights compliance with PCI-DSS standards, scalability for handling large transaction volumes, and providing fallback options when a chosen payment method fails. Collectively, the Razorpay and Shopify documentation provide comprehensive insights into both technical integration and operational considerations, ensuring that our project can align with industry standards of security, reliability, and usability. Based on this analysis, the functional and non-functional requirements for the payment gateway section were systematically derived to achieve the necessary goals concerning the payment module.

➢ **Survey/Questionnaire:** Here, we included certain questions related to payment experience of users in the Google forms designed to survey buyers and sellers separately.
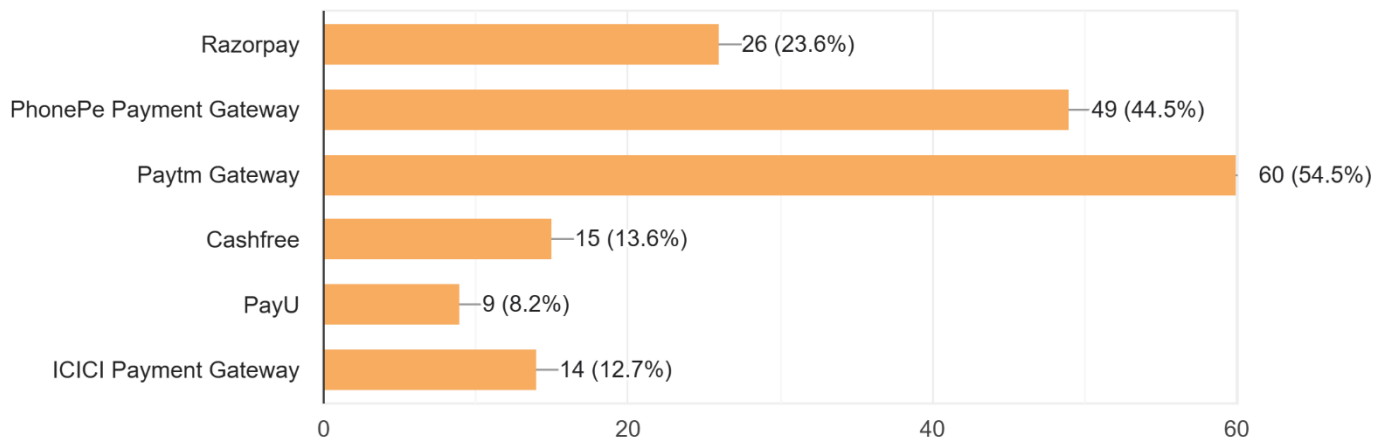
➔ Following are the results we observed in the Form responses:

For Sellers

1.

Which of the following payment gateways do you prefer for your business ?
110 responses

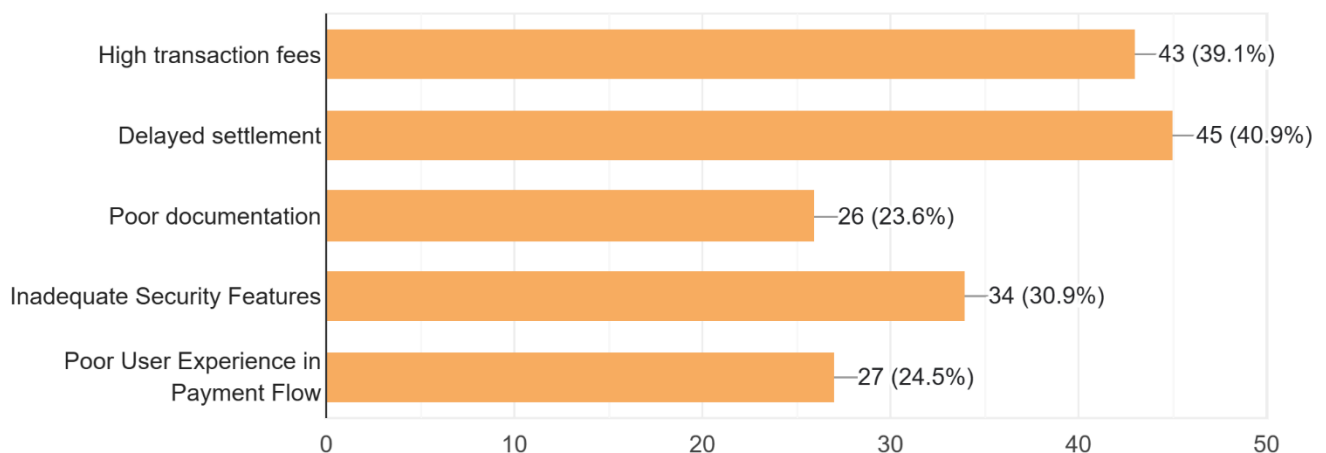| Gateway	Count (%)
Razorpay	26 (23.6%)
PhonePe Payment Gateway	49 (44.5%)
Paytm Gateway	60 (54.5%)
Cashfree	15 (13.6%)
PayU	9 (8.2%)
ICICI Payment Gateway	14 (12.7%)

➔ Here we can clearly notice that Paytm, PhonePe and Razorpay are the top 3 choices of the sellers.

2.

What is your most common/serious complaint with payment gateways?
110 responses
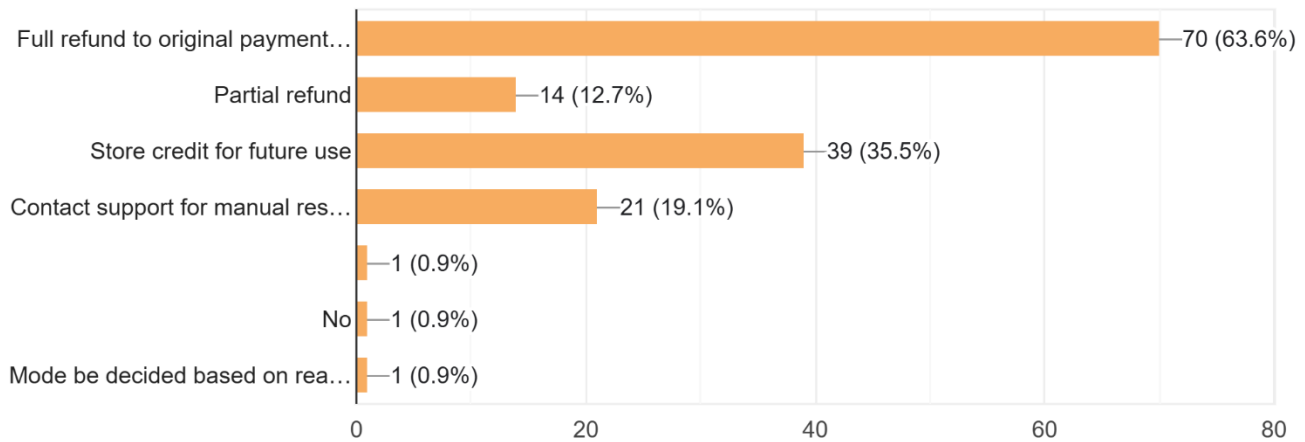
Complaint	Count (%)
High transaction fees	43 (39.1%)
Delayed settlement	45 (40.9%)
Poor documentation	26 (23.6%)
Inadequate Security Features	34 (30.9%)
Poor User Experience in Payment Flow	27 (24.5%)

3.

What refund options do you expect in case of a failed transaction or order cancellation?
110 responses

Full refund to original payment…	70 (63.6%)
Partial refund	14 (12.7%)
Store credit for future use	39 (35.5%)
Contact support for manual res…	21 (19.1%)
	1 (0.9%)
No	1 (0.9%)
Mode be decided based on rea…	1 (0.9%)

For Buyers

1.

Which of the following payment gateways do you like the most?
85 responses

- Razorpay
- PhonePe Payment Gateway
- Paytm Gateway
- ICICI Payment Gateway
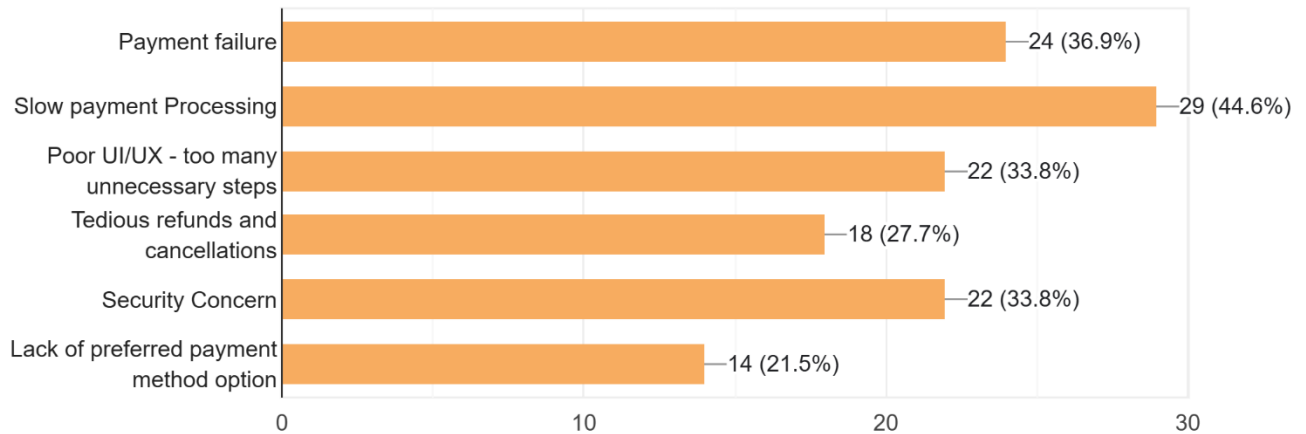- Cash on delivery
- UPI
- Credit or debit Cards
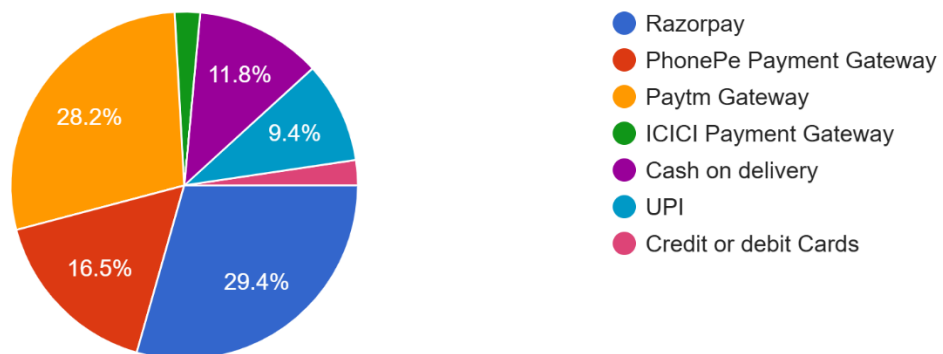
➔ Here, Razorpay seems to be the most popular choice among buyers.

2.

What is your most common complaint/concern with payment gateways?
65 responses

| Complaint/Concern	Count (%)
Payment failure	24 (36.9%)
Slow payment Processing	29 (44.6%)
Poor UI/UX - too many unnecessary steps	22 (33.8%)
Tedious refunds and cancellations	18 (27.7%)
Security Concern	22 (33.8%)
Lack of preferred payment method option	14 (21.5%)

➔ This response particularly helps us in shaping the Non-Functional requirements of our platform in particular.

3.

How confident are you about the security of third-party payment gateways in general (like Razorpay, PhonePe etc.)?
64 responses

Rating	Count (%)
1	4 (6.3%)
2	4 (6.3%)
3	18 (28.1%)
4	25 (39.1%)
5	13 (20.3%)
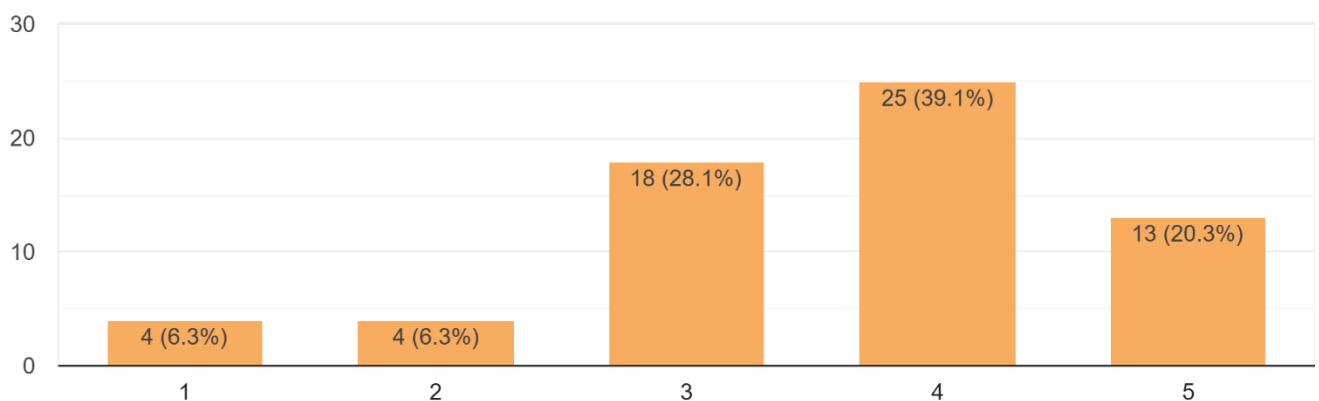
➔ Based on the thorough document analysis and an inclusive study of the user survey statistics, our group reached the decision of implementing the payment module by integrating the Razorpay Gateway API, since it is both – popular and comprehensive in all features.
➔ These elicitation techniques have proved quite useful in shortlisting the Functional and Non-Functional requirements of the system.