Product Analysis

Error Breakdown

Data-Driven Insights for E-Wallet Product Growth

10th August, 2025

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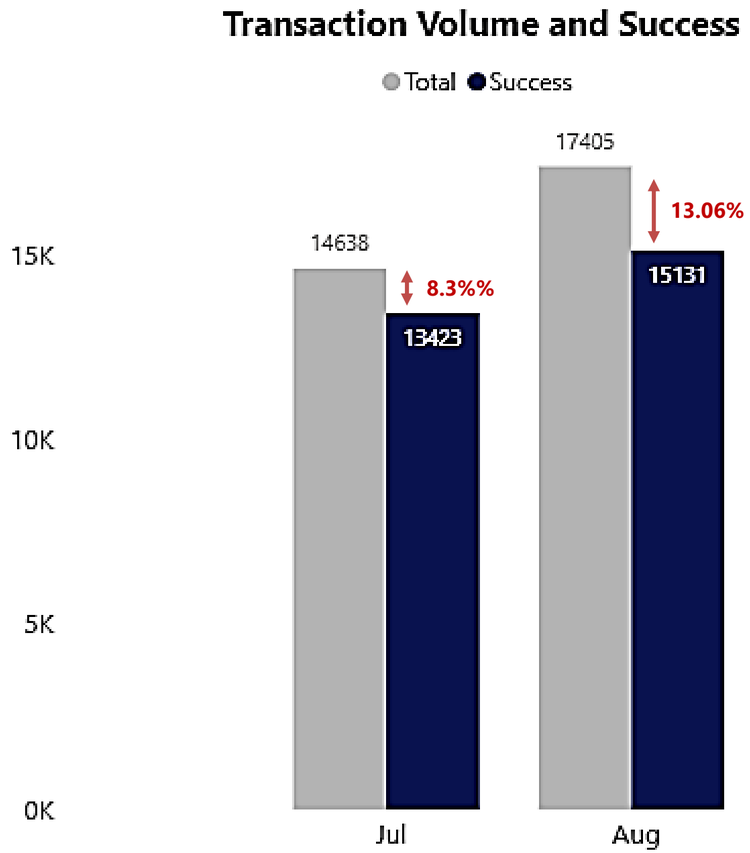
Content



The success rate declines by 4.76% during July-August

Even though the transaction volume increased 18.9% from July to August, the success rate dropped from **91.7% to 86.94%**

→ This drop in success rate could lead to revenue loss and harm customer experience and retention.

Objectives

Indentify Root Cause

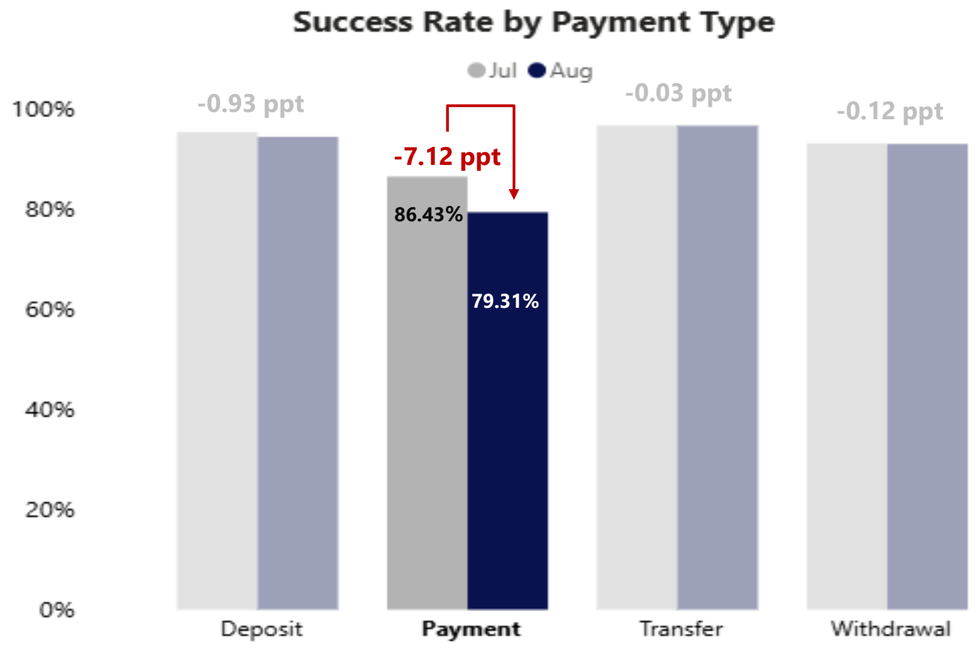
- Analyze transaction data to pinpoint the failure point
- Determine key factors affecting the failure rate.

Strategy Development

- Formulate immediate actions for the critical issue.
- Develop the short-term system reliability improvement

Payment transactions show a noticeable drop, with Billing—the highest volume category (36.65%)—experiencing the steepest decline (-14.6%), making it the key focus for investigation.

Payment transaction shows a marked **-7.12ppt** in success rate (86.43% to 79.31%), far exceeding minimal changes in other transaction types, indicating the issues specific to the payment processing flow



The billing category makes a substantial contribution to payment transactions (36.65%) but also experienced the **most significant 14.60% drop** in success rate, which had the greatest impact on the overall payment success rate **decline of 2.61%**

Payment Category Breakdown

category	% Success Jul	% Success Aug	% Change	% Share	% Impact
Billing	86.34%	71.74%	-14.60%	36.65%	-2.61%
Traveling	87.95%	80.75%	-7.20%	2.62%	-0.19%
Movies	85.38%	78.82%	-6.55%	2.47%	-0.18%
Telco	83.98%	78.57%	-5.41%	6.71%	-0.48%
FnB	86.27%	82.22%	-4.05%	10.76%	-0.77%
Transportation	86.09%	84.38%	-1.72%	2.21%	-0.16%
Marketplace	86.59%	84.93%	-1.66%	14.47%	-1.03%
Shopping	87.23%	85.84%	-1.40%	24.11%	-1.72%

Why is the billing category experiencing such a dramatic decline in success rate?

Hypothesis

Internal Issues

H1: Low success rate across different app versions

H2: API time out during peak hour

H3: Ineffective UX design causes users to drop off during the process

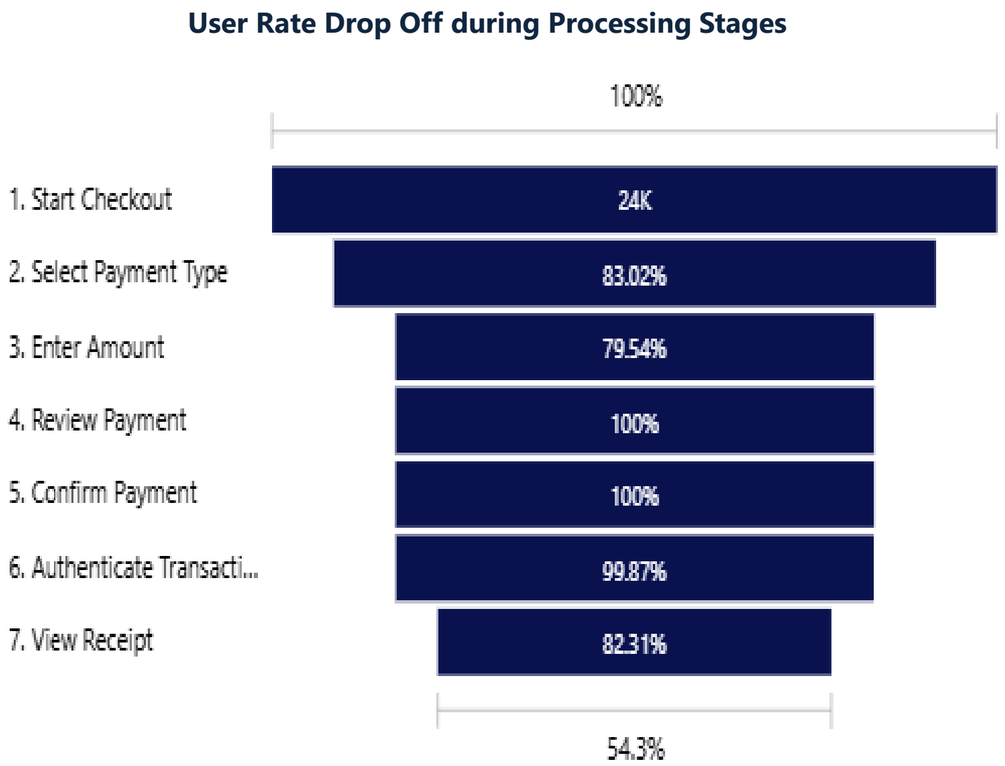
External Issues

H4: Issues from banking, low balance, or exceeding the limit set

H5: Payment Gateway downtime

H6: Authenticator Issue

Reducing overall conversion to 54.3%. The main checkout drop-off occurs at payment type selection

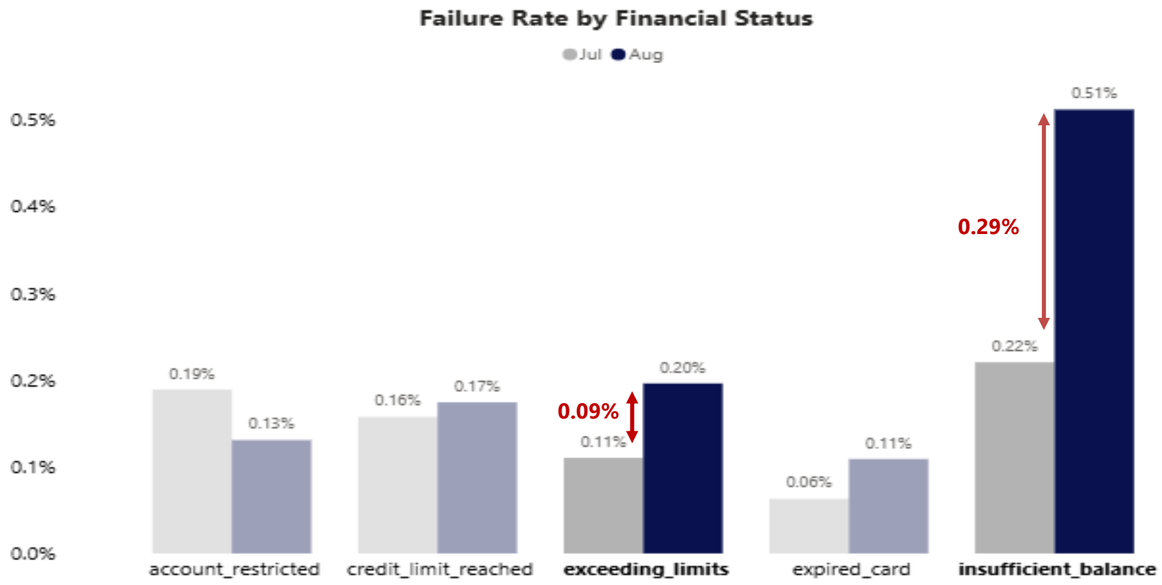


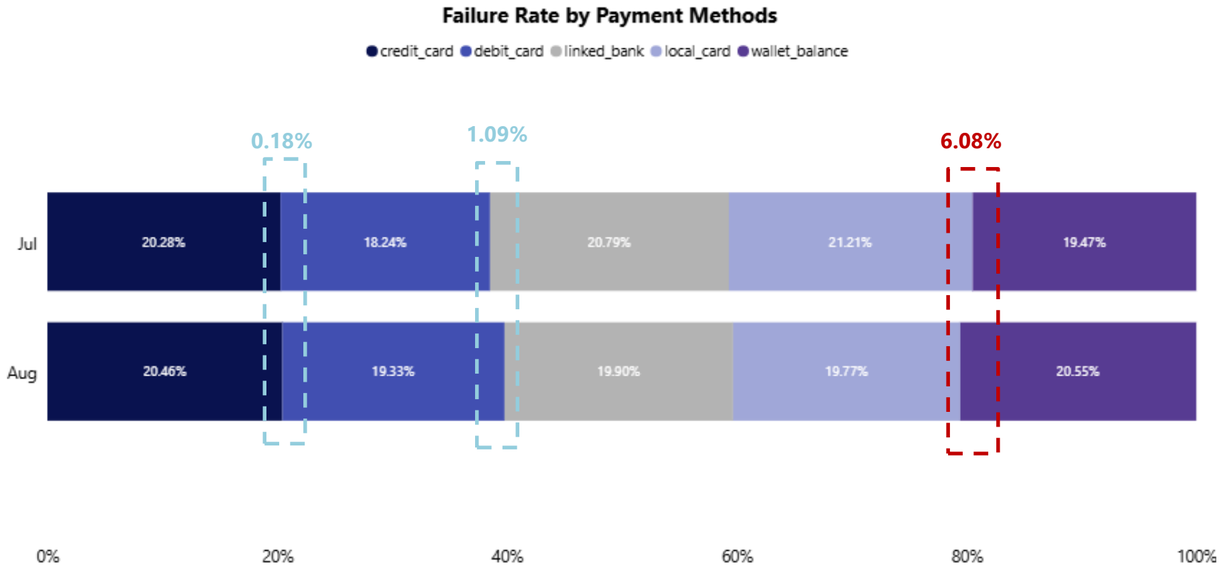
- **Start Checkout → Select Payment Type**: **Biggest drop (−17%)**
- Select Payment Type → Enter Amount: Moderate drop (−3.5%).
- Review & Confirm Payment: No drop
- Authentication: Minimal drop (−0.1%).
- View Receipt: Large drop (−17.6%) **not critical - payments already done**

The failure rate for the wallet-balance payment method rose sharply by 6.08%, primarily driven by an increase in transactions failing due to limit exceedance (+0.09%) and insufficient balance (+0.29%)

Insufficient balance error shows an abnormal increase **(+0.29%)**, **three times higher** than the next largest rise in failure type—exceeding limits **(0.09%)**. In contrast, account restricted error shows a decline.

The failure rate for wallet-balance payments increased from 19.47% to 20.55% **(+6.08%)**, a sharper rise compared to credit card **(+0.18%)** and debit card **(+1.09%)**, while linked bank and local card payments recorded a decline in failure rates.



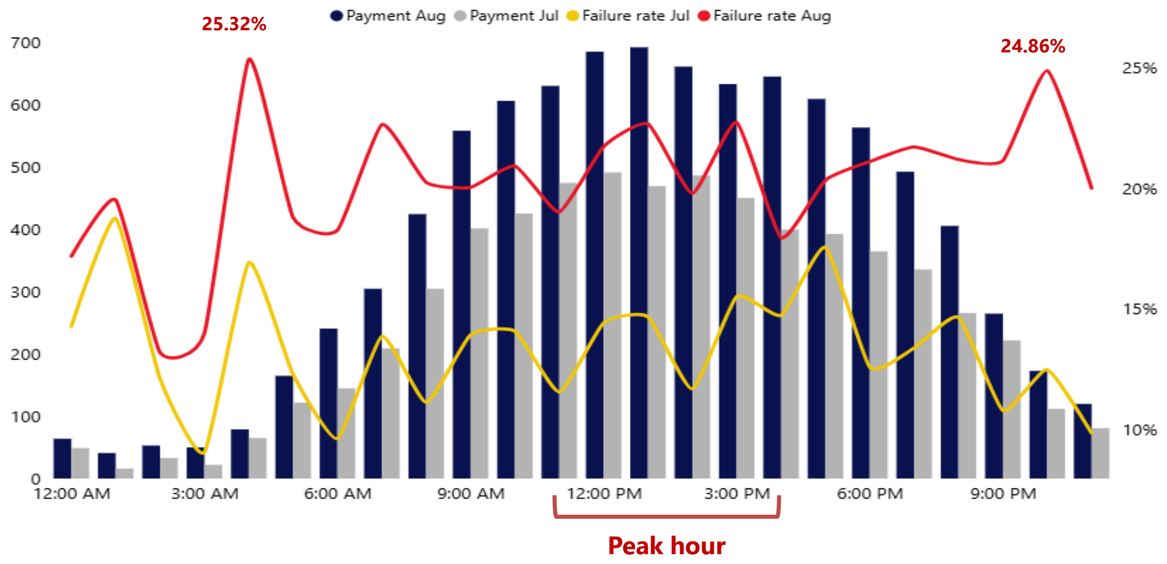


Failures are high during off-peak times; peak hours show lower failures. APT timeouts fluctuate, peaking above 0.8% at midnight, noon, and 9 PM.

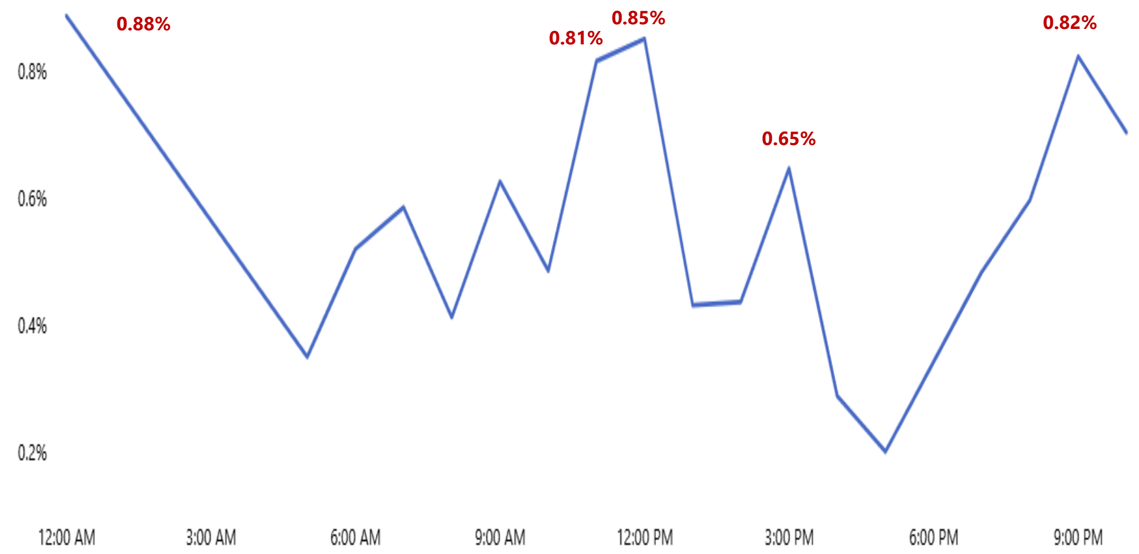
- Peak hour is from 11 am to 4 pm
- Failure rates are highest during low-volume periods, with August peaking at **25.32%** around 3 AM and **24.86%** near 11 PM. July's highest failure rate is 19.51% around 1 AM.

The failure rate due to APT timeouts varies significantly over the day. Peaks occur around **midnight, peak hour, and 9 PM**, each exceeding **0.8%**. The lowest failure rates are seen at 5 AM **(~0.35%)** and 5 PM **(~0.2%)**.

Failure Payment Rate by day time



Failure Rate by APT Timeout by Day Time



Following the release of app version 3.9.6, the successful transaction rate declined sharply, with user factors emerging as the primary cause of failures

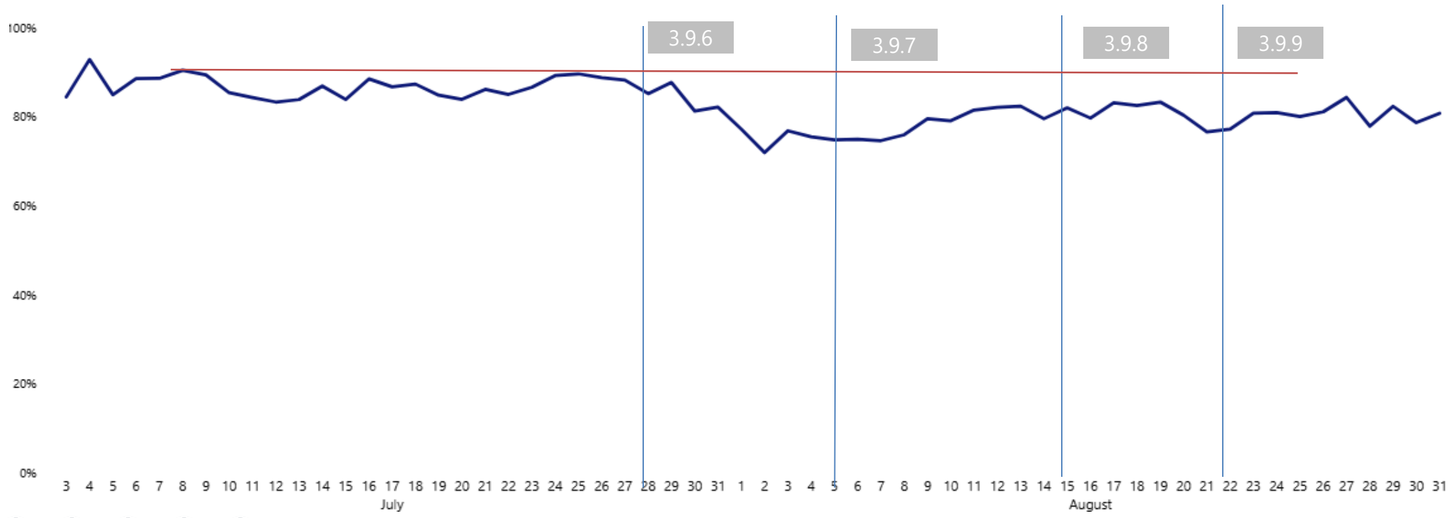
The transaction success rate dropped sharply following the **3.9.6 version** update.

Although it has slightly improved after subsequent updates, it remains below the pre-3.9.6 version.

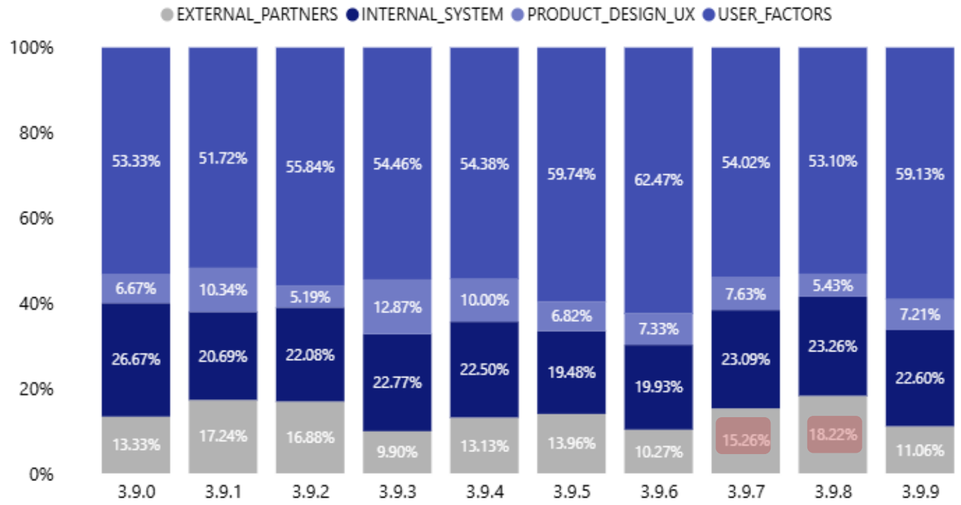
User factor is the main cause of the failed payment, accounting for **more than 50%** of the error categories.

version 3.9.7 displays **~5% higher** in error by the external partner than version 3.9.6 (from 10.27% to 15.26%), and this rate kept **rising ~3%** in version 3.9.8 (from 15.26% to 18.22%).

Success Rate by Billing Payment Overtime Jul-Aug

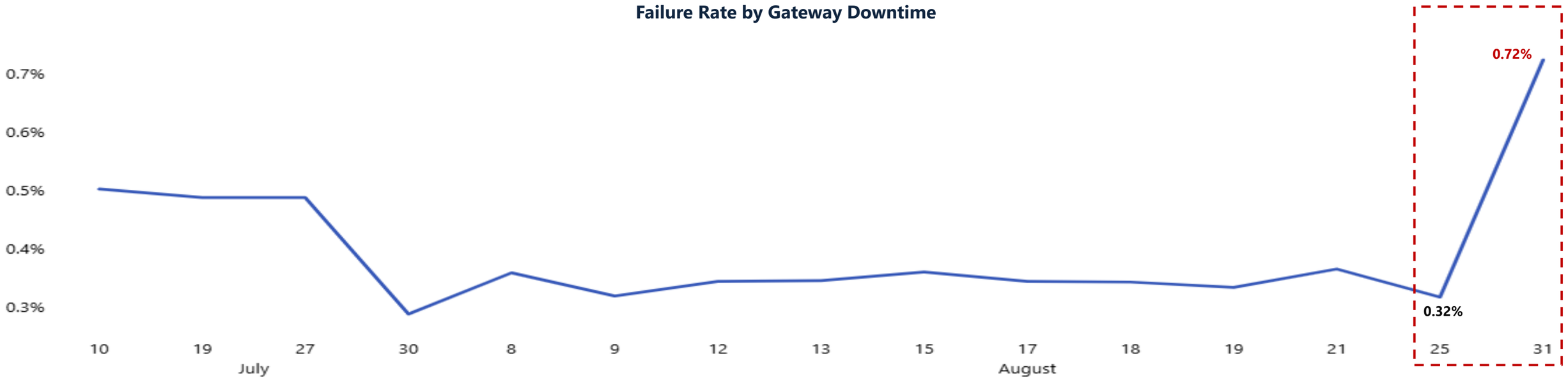


Failure Rate by App Version & Error Category



Gateway downtime errors escalated unusually in late August

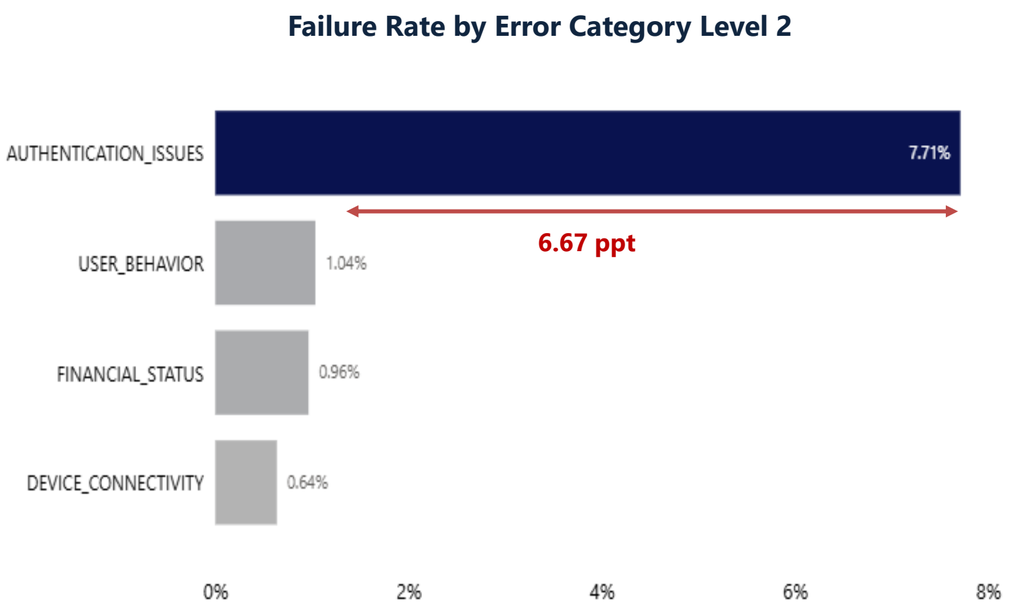
Gateway downtime errors first appeared on July 10 and remained relatively stable, before surging sharply between **August 25th –31st**, rising from 0.32% to 0.72% **(+0.40%)** .

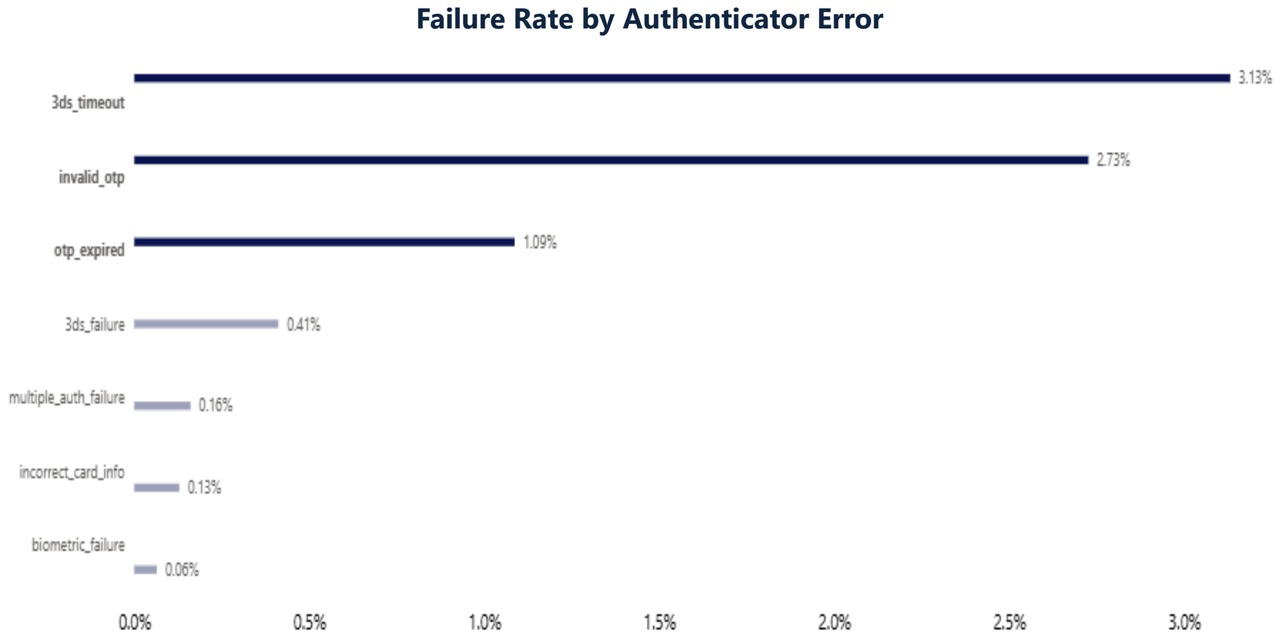


Authenticator Issue is the main cause of payment failure due to user factors. 3ds time out (40.62%) and invalid otp (35.36%) contributed to the highest failure rate by Authenticator

Authentication issues account for the highest failures at 7.71%, which is over 6.67 percentage points more than the second-largest cause, **user behavior** (1.04%).

The majority of authentication failures stem from 3D Secure timeouts and invalid OTP entries, and OTP expiration also contributes notably





Key Insights

H1 → Low success rate since the release of app version 3.9.6 till version 3.9.9

H2 → API time out not only during peak hours but also off-peak hours

H3 → The user retention strongly drops at the step of selecting the payment type and entering the amount, which causes the UX design, payment option issues, and inefficiency balance

H4 → Low balance and exceeding the limit set are key errors that increase the payment failure rate by the wallet balance method

H5 → Payment Gateway downtime suddenly rose at the end of August

H6 → Authenticator Issue (3D Secure timeouts and invalid OPT error) is the main cause of payment failure by user factor.

Short-term Solution

- Add **real-time balance checks** and **limit alerts** for wallet payments, sending **a reminder notification when the balance is under a specific amount** (e.g. $50)
- Simplify and streamline the payment type selection step
- **Extend the timeouts of the 3D's** authenticator or use **Email OTP** instead of mobile network, and apply the **smart OTP** to replace traditional OTP to reduce cost and third-party influence
- Strengthen the payment gateway to avoid downtime by **using backup servers** to avoid single points of failure

Thank you