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Churn Analysis of App Users

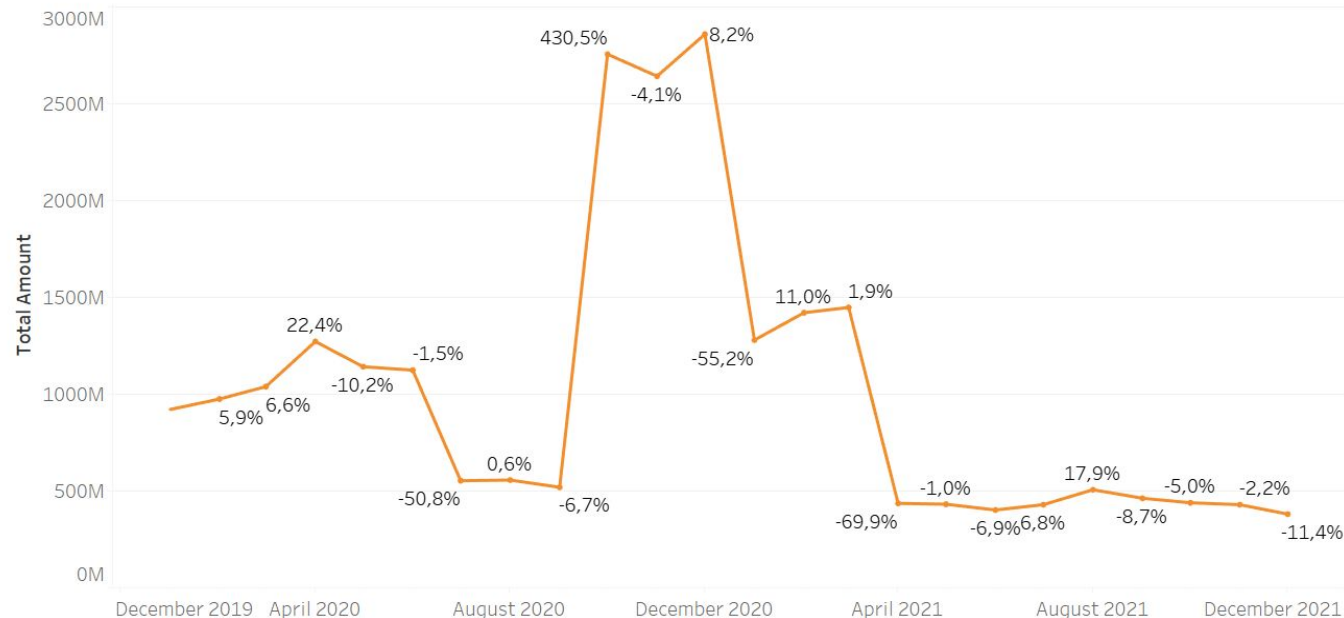
Revou Labs May 2022 Division 2 - Team 4

Business Problem



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Monthly Revenue



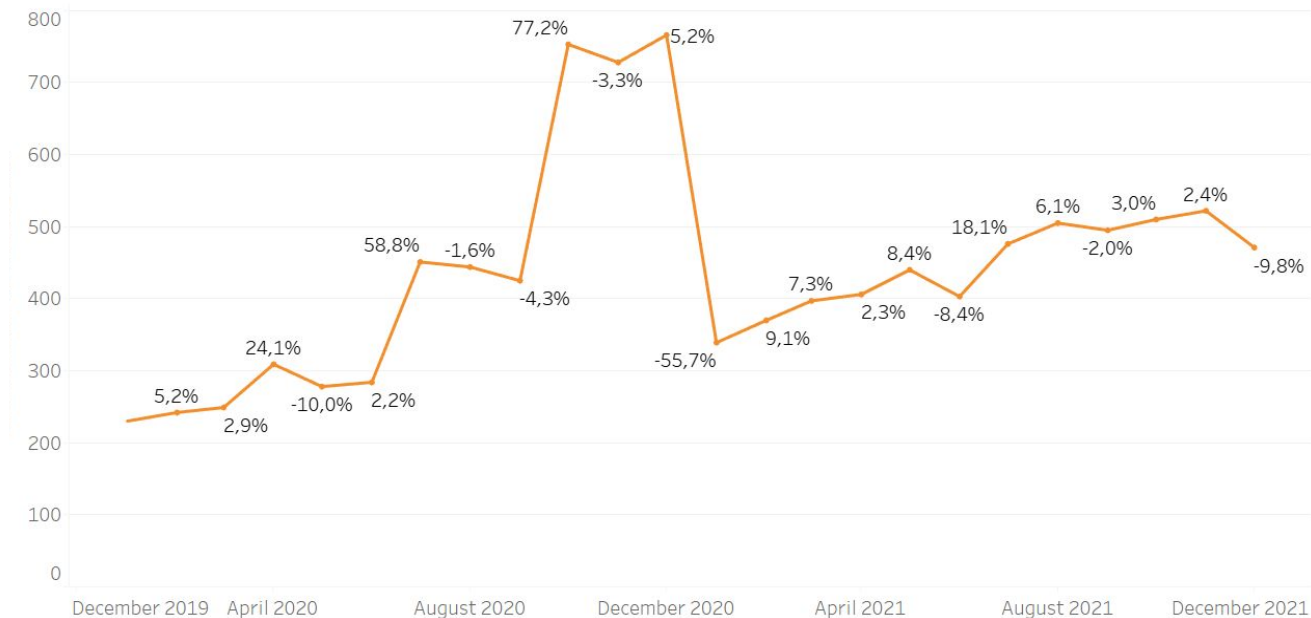
Significant decline in
December 2020 -
February 2021 (~50%)

Transaction Trend



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Transaction



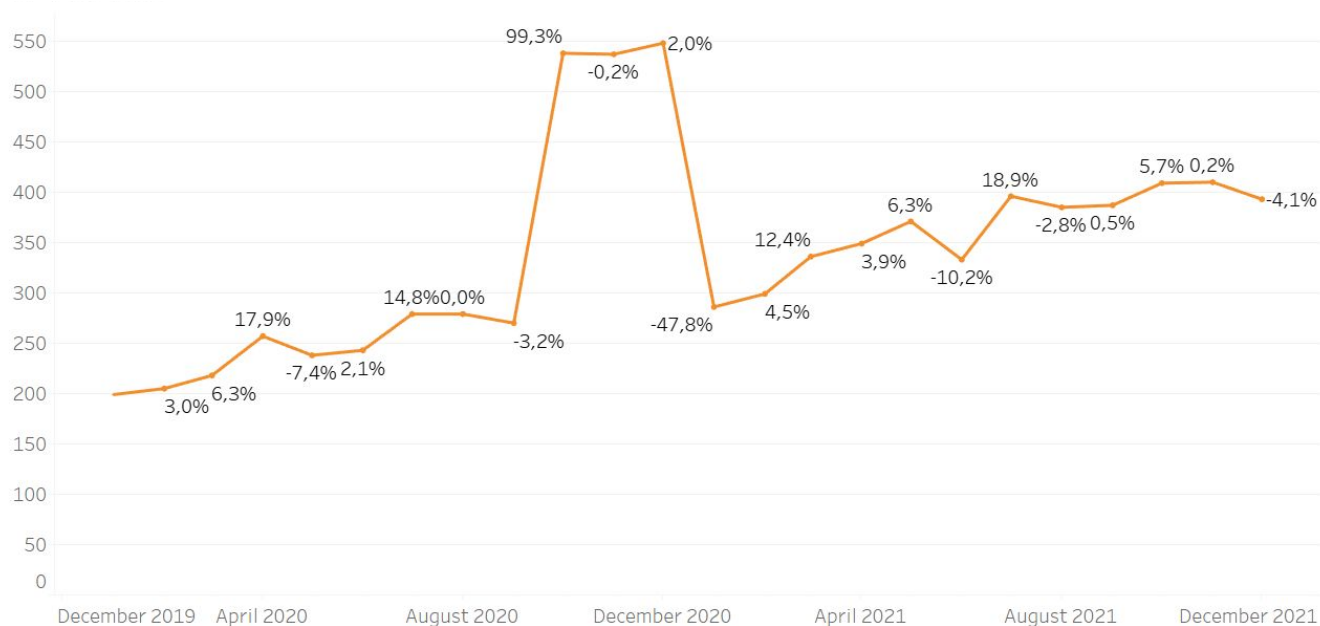
Sales Decline in Dec 2020
- Feb 2021 are affected
by monthly transaction

Customer Overview



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User Transaction

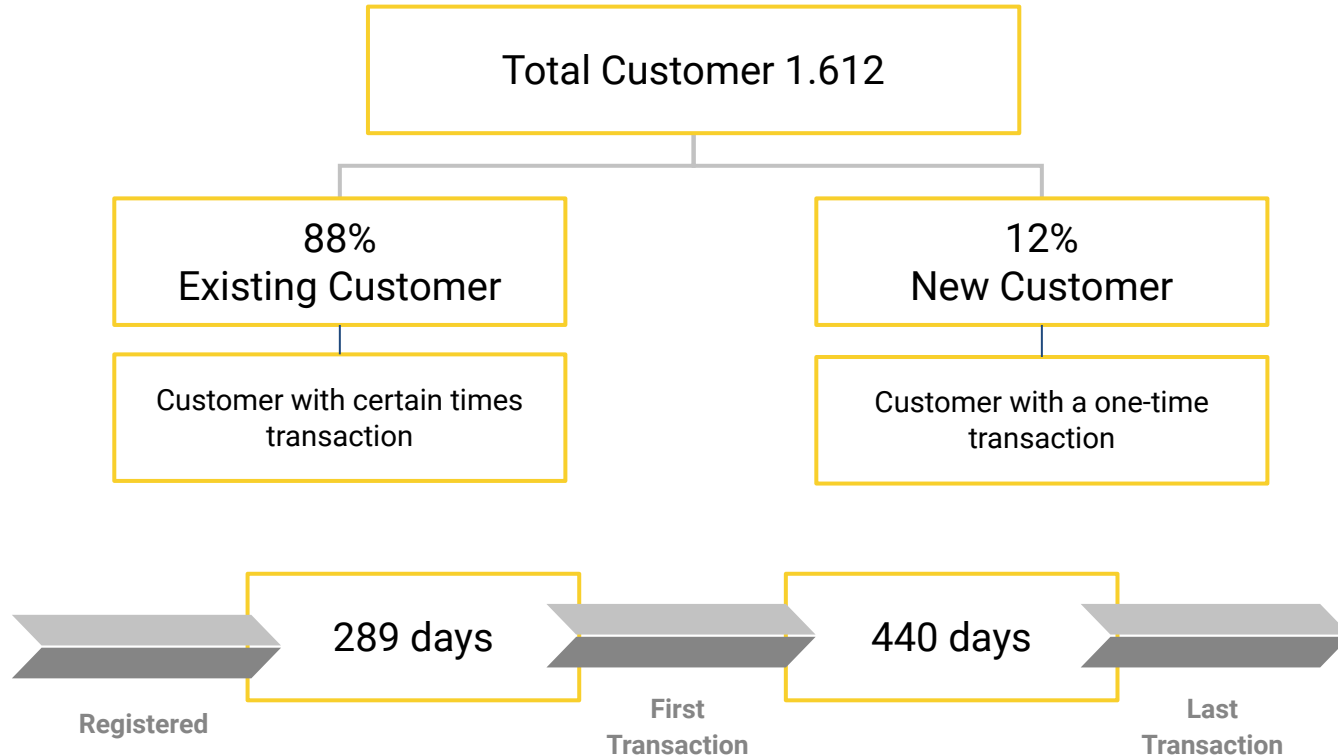


Decline of transaction amount are caused by the decline of number of user that doing transaction

Customer Overview



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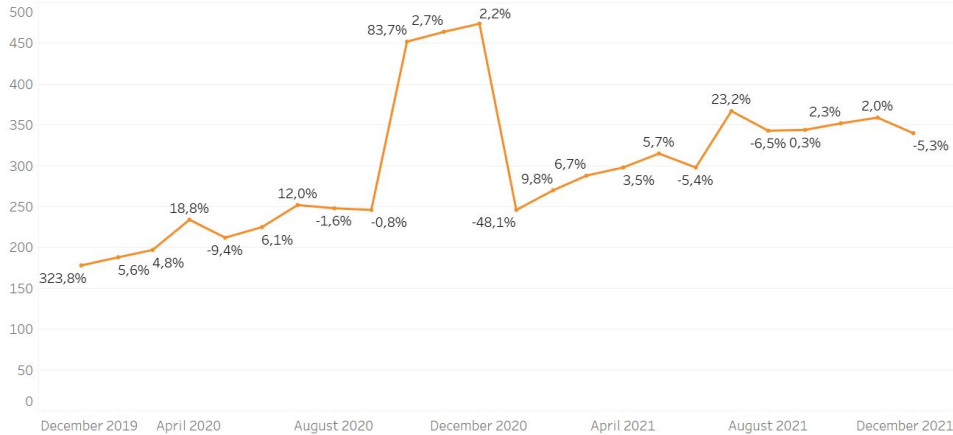


Customer Overview

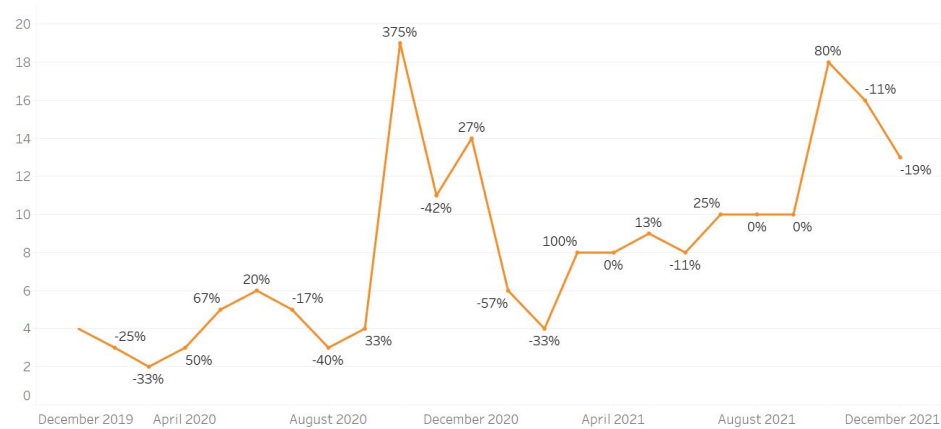


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Existing Customer



New Customer



Both Existing Customer and New Customer decline in December 2020-Februari 2021. But the analysis focuses on the more influential ones, which is Existing Customer with higher percentage than New Customer

Retention Cohort



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Cohort

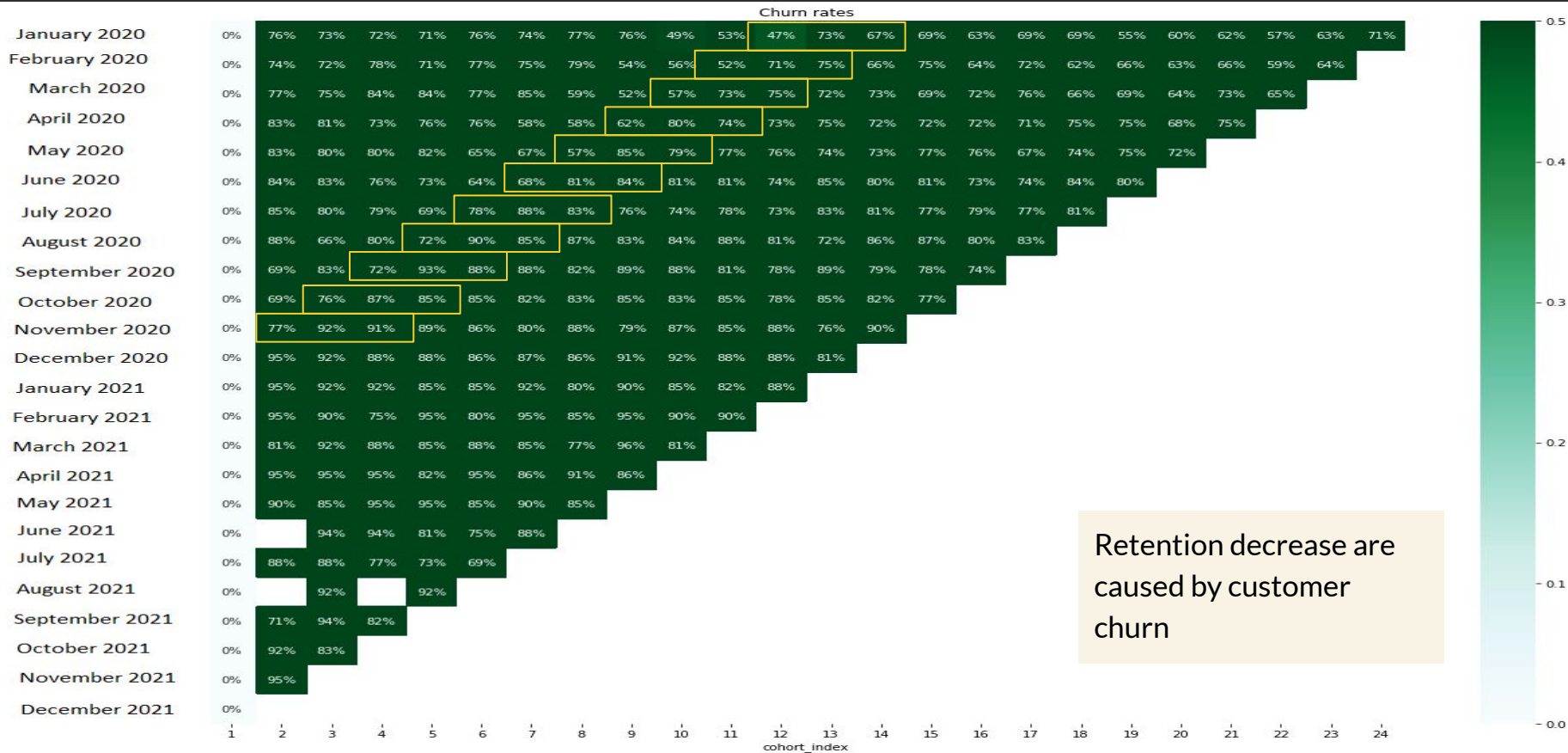
Month, Year of First_Order	Diff_month																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
January 2020	100.00%	24.12%	26.63%	27.64%	29.15%	24.12%	26.13%	23.12%	23.62%	50.75%	46.73%	52.76%	27.14%	32.66%	30.65%	36.68%	31.16%	31.16%	44.72%
February 2020	100.00%	26.11%	28.03%	22.29%	29.30%	22.93%	24.84%	21.02%	45.86%	43.95%	48.41%	28.66%	24.84%	33.76%	24.84%	35.67%	28.03%	38.22%	34.39%
March 2020	100.00%	22.58%	25.00%	16.13%	16.13%	22.58%	14.52%	41.13%	48.39%	42.74%	27.42%	25.00%	28.23%	26.61%	31.45%	28.23%	24.19%	33.87%	30.65%
April 2020	100.00%	16.92%	19.23%	26.92%	23.85%	23.85%	41.54%	42.31%	37.69%	20.00%	26.15%	26.92%	24.62%	27.69%	27.69%	27.69%	29.23%	25.38%	24.62%
May 2020	100.00%	17.39%	19.57%	19.57%	18.48%	34.78%	32.61%	43.48%	15.22%	20.65%	22.83%	23.91%	26.09%	27.17%	22.83%	23.91%	32.61%	26.09%	25.00%
June 2020	100.00%	15.91%	17.05%	23.86%	27.27%	36.36%	31.82%	19.32%	15.91%	19.32%	19.32%	26.14%	14.77%	20.45%	19.32%	27.27%	26.14%	15.91%	20.45%
July 2020	100.00%	15.38%	20.19%	21.15%	30.77%	22.12%	12.50%	17.31%	24.04%	25.96%	22.12%	26.92%	17.31%	19.23%	23.08%	21.15%	23.08%	19.23%	
August 2020	100.00%	11.63%	33.72%	19.77%	27.91%	10.47%	15.12%	12.79%	17.44%	16.28%	11.63%	18.60%	27.91%	13.95%	12.79%	19.77%	17.44%		
September 2020	100.00%	30.56%	16.67%	27.78%	6.94%	12.50%	12.50%	18.06%	11.11%	12.50%	19.44%	22.22%	11.11%	20.83%	22.22%	26.39%			
October 2020	100.00%	30.53%	23.66%	12.98%	15.27%	14.50%	17.56%	16.79%	15.27%	16.79%	15.27%	22.14%	14.50%	17.56%	22.90%				
November 2020	100.00%	22.68%	8.25%	9.28%	11.34%	14.43%	19.59%	12.37%	20.62%	13.40%	15.46%	12.37%	23.71%	10.31%					
December 2020	100.00%	5.19%	7.79%	11.69%	11.69%	14.29%	12.99%	14.29%	9.09%	7.79%	11.69%	11.69%	19.48%						
January 2021	100.00%	5.00%	7.50%	7.50%	15.00%	15.00%	7.50%	20.00%	10.00%	15.00%	17.50%	12.50%							
February 2021	100.00%	5.00%	10.00%	25.00%	5.00%	20.00%	5.00%	15.00%	5.00%	10.00%	10.00%								
March 2021	100.00%	19.23%	7.69%	11.54%	15.38%	11.54%	15.38%	23.08%	3.85%	19.23%									
April 2021	100.00%	4.55%	4.55%	4.55%	18.18%	4.55%	13.64%	9.09%	13.64%										
May 2021	100.00%	10.00%	15.00%	5.00%	5.00%	15.00%	10.00%	15.00%											
June 2021	100.00%		6.25%	6.25%	18.75%	25.00%	12.50%												
July 2021	100.00%	11.54%	11.54%	23.08%	26.92%	30.77%													
August 2021	100.00%		8.33%		8.33%														
September 2021	100.00%	29.41%	5.88%	17.65%															
October 2021	100.00%	8.33%	16.67%																
November 2021	100.00%	5.26%																	
December 2021	100.00%																		

The decline of transaction from existing users because they're not doing transaction again.
Decline in Dec 2020-Feb 2021 are caused by retention decrease up to half

Churn Overview

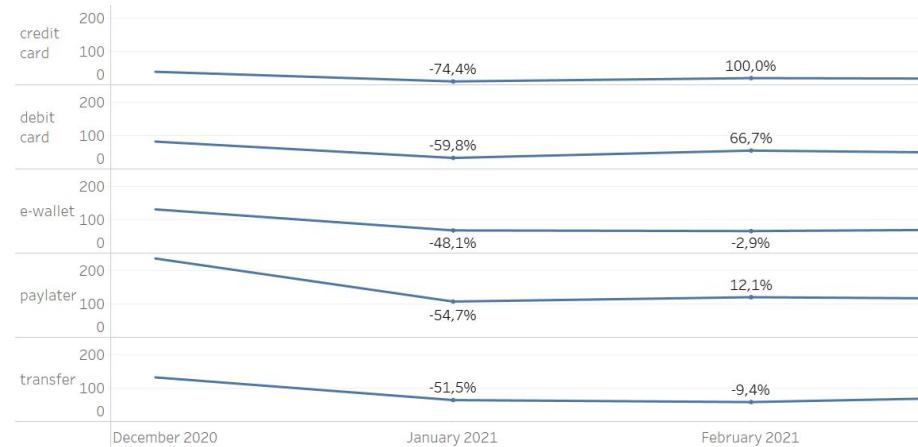
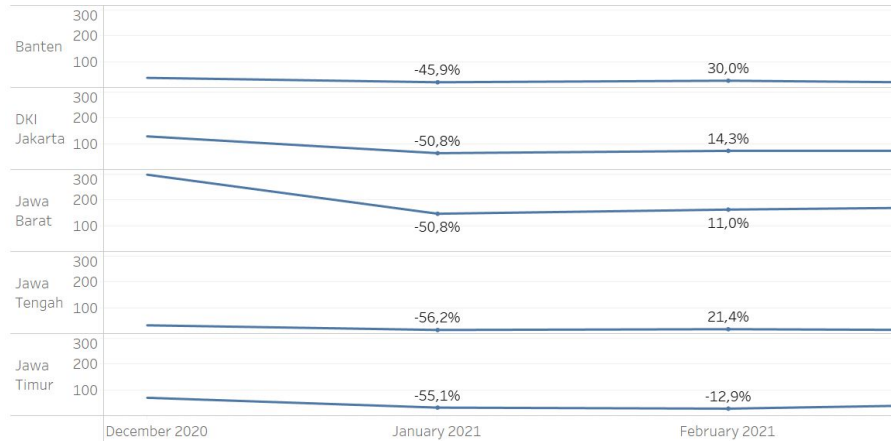


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Churn Trend

Users Transaction Trend based on Province & Payment method



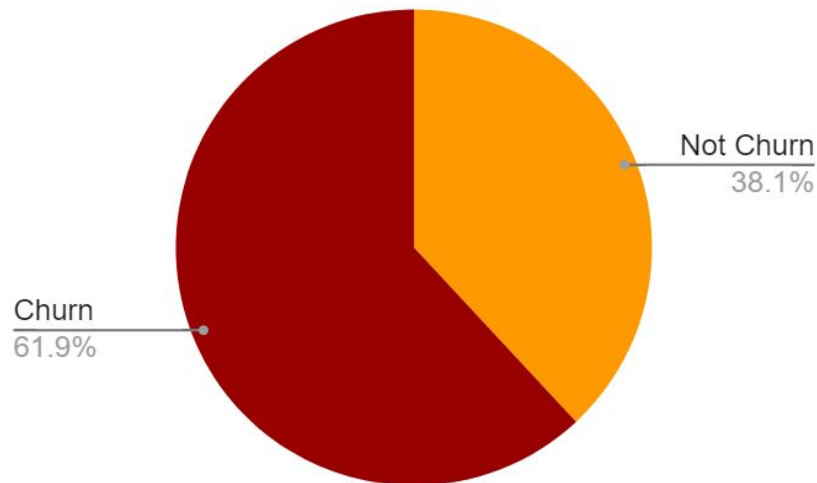
From the characteristic users, the decrease on Feb 2021 from Dec 2020, are same, but there's some province & payment method that seem have higher decrease than other

The next step are we need to analyze each customer characteristic to prevent this case in the future

Churn Overview



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1.413 Existing Customer
13 Months Churn Period

Average transaction period (first until last transaction) are 13 months, so that customers who do not transact more than this period are categorized as churn.

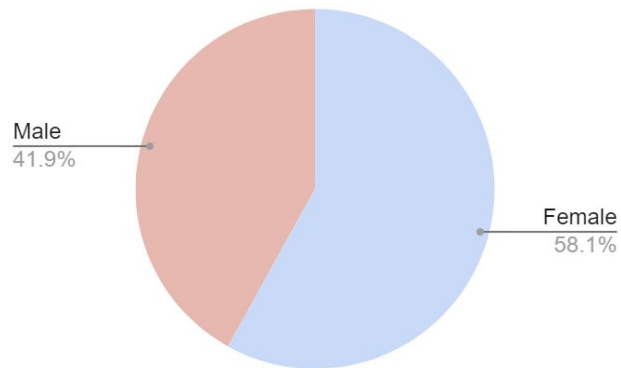
From total existing customers, there more than half customers who churn after this period (with 61,9% churn rate)

Customer Spread

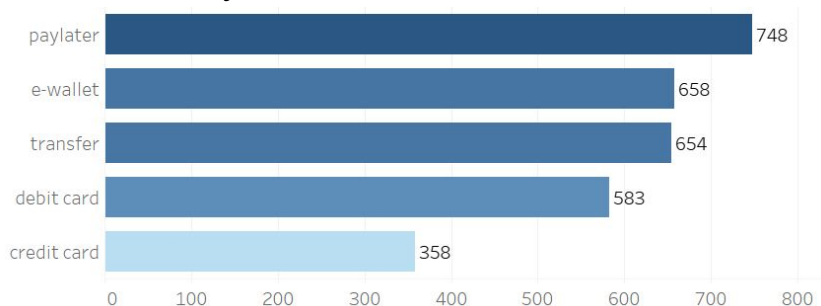


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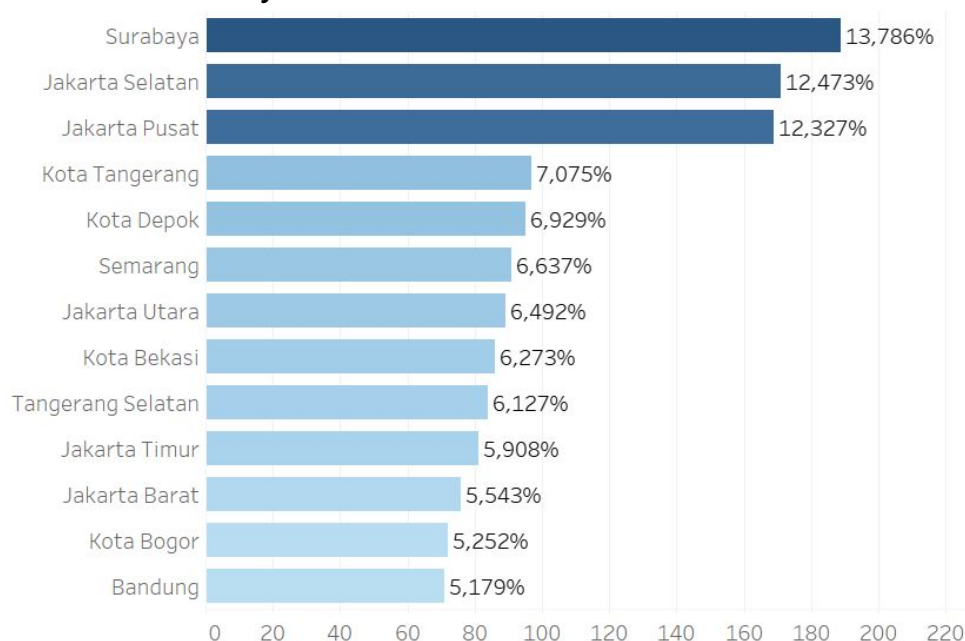
Based on Gender



Based on Payment Method



Based on City



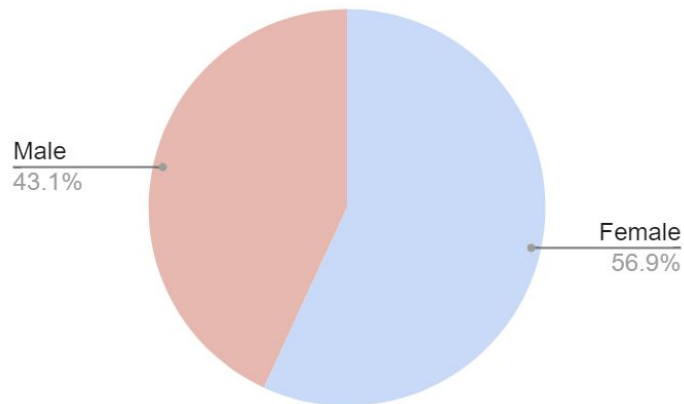
Existing Customer dominated by Female, paylater payment method and from Surabaya

Customer Churn based on Gender

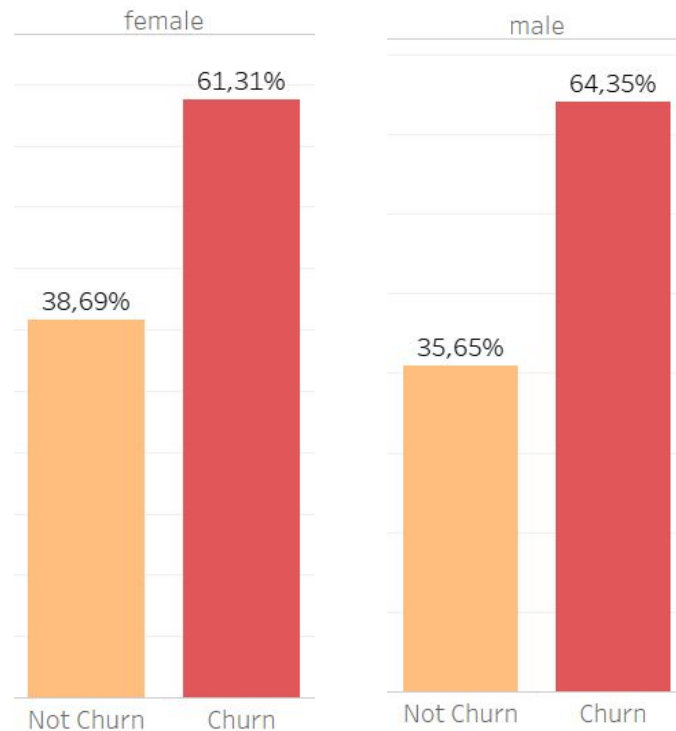


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Total Churn Percentage on Gender



Churn on Female > Churn on Male in accordance with the overall customer spread
But when viewed separately, % Churn for Male Customer higher than % Churn for Female

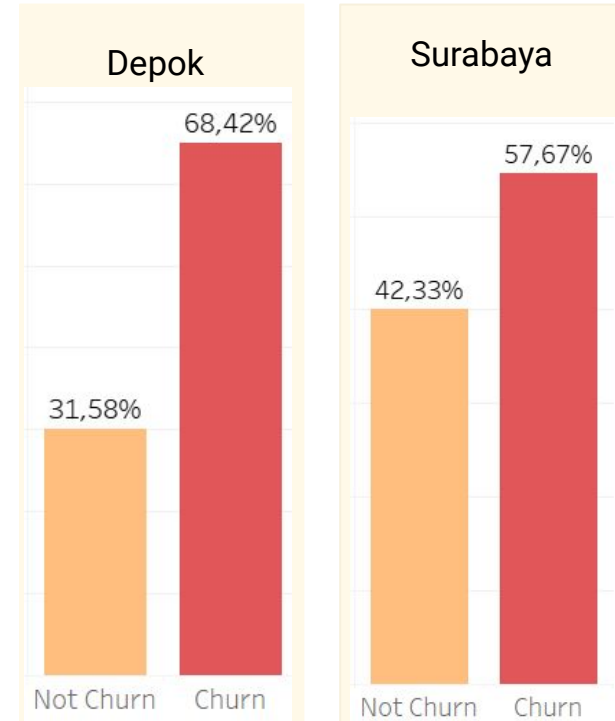
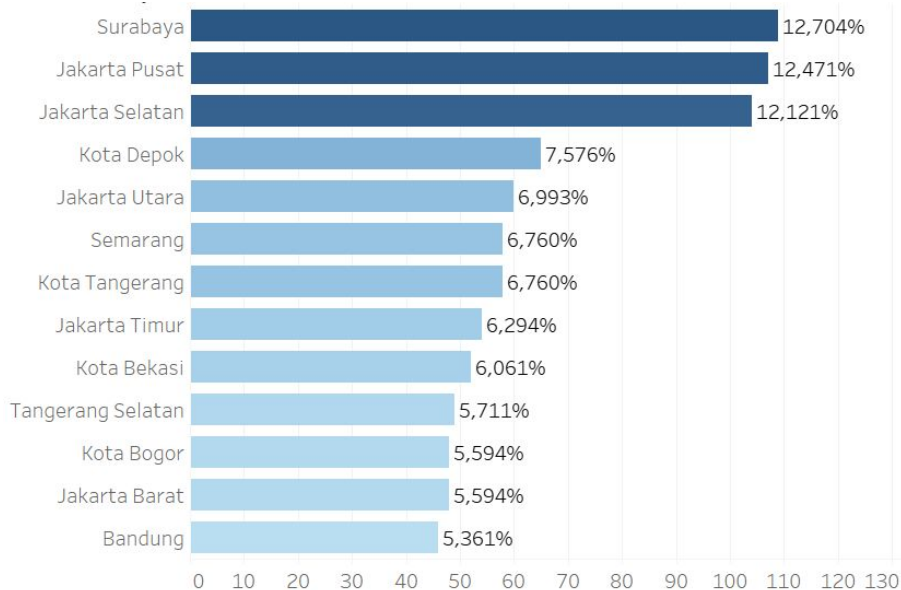


Customer Churn based on City



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Total Churn Percentage on City



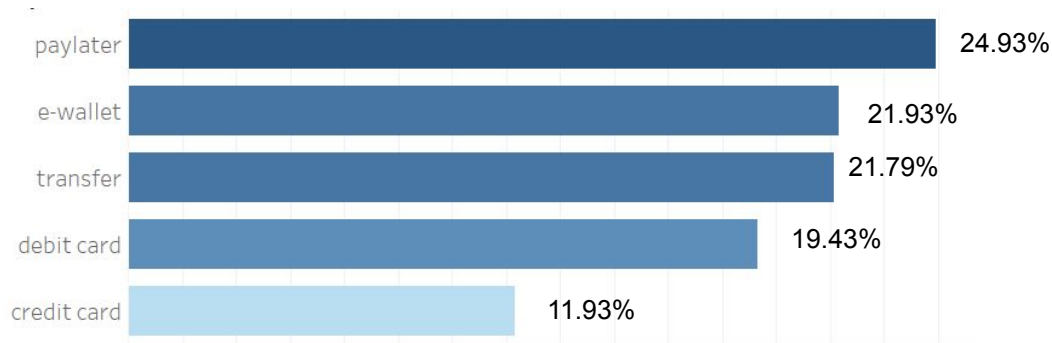
The highest churn % for overall are Surabaya in accordance with the customer spread. But when viewed separately, **Depok** have highest churn & **Surabaya** have lowest churn

Customer Churn based on Payment Method

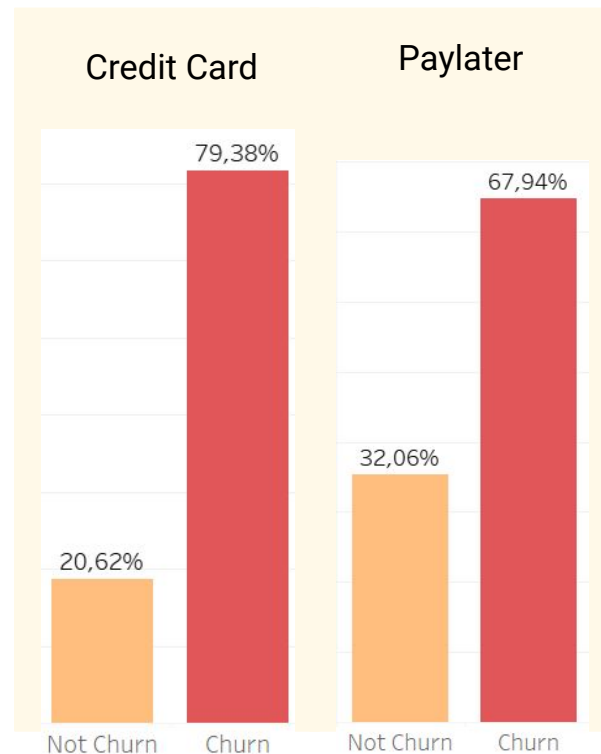


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Total Churn Percentage on Payment Method



The highest churn % for overall are Paylater in accordance with the customer spread. But when viewed separately, **Credit Card have highest churn & Paylater have lowest churn**



Customer Churn based on Segmentation



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Commoner

Lowest average of **spending** (780
K/ person)

Lowest average **frequency**
(3 times/ person)

Longest recency: 248 days



Noble

Quiet high average of **spending** (11
M/ person)

Quiet low average **frequency** (8,9
times/ person)

Medium recency: 84,4 days

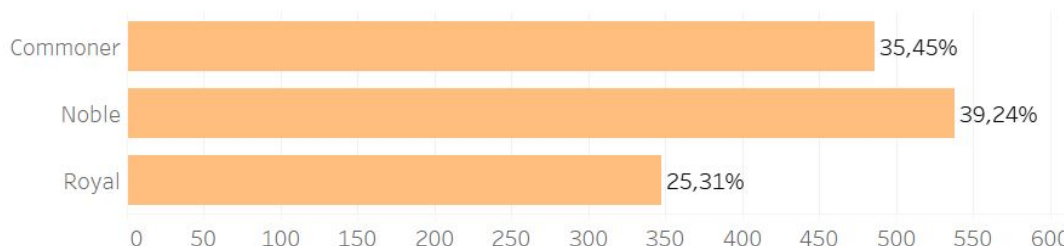


Royal

Highest average of **spending** (43
M/ person)

Highest average **frequency** (20,4
times/ person)

Quickest recency: 29,3 days

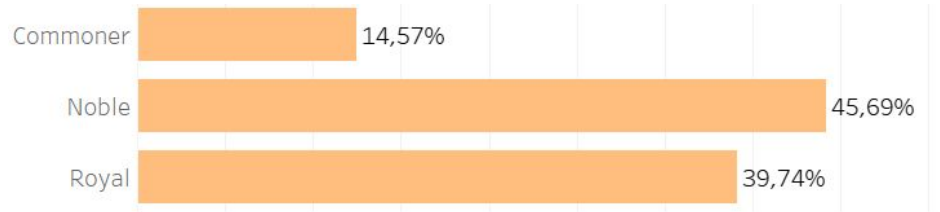


Customer Churn based on Segmentation



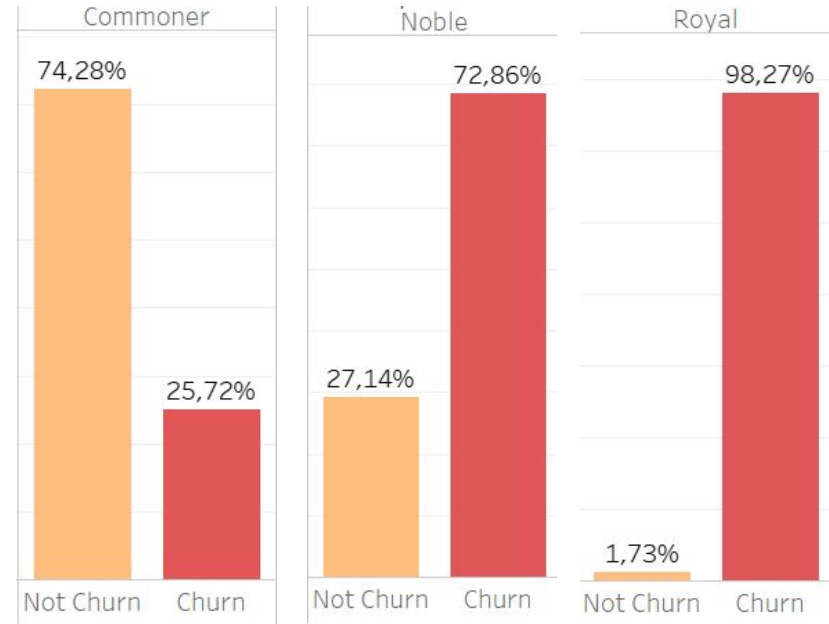
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Total Churn Percentage on Segmentation



Even though Royal have the quickest recency among others but they tend to churn after 13 months, with the highest churn among other.

Meanwhile Commoner still retain after 13 months, although they have the longest recency they're the most loyal with the lowest churn rate 25%



- **Based on Gender**

Provide recommendations for products that customers often buy for each gender to decrease churn. For male customers buy electronics the most

- **Based on Geography City**

For Depok city with the highest churn rate, we can find out the ongoing trend in the area, in Depok there is an OOTD fashion trend for Citayam Fashion Week, so we can maximize the marketing of fashion products from this opportunity.

Surabaya has very good potential, with the largest number of customers and a low churn rate, we can maintain it with a loyalty program.

Besides that, the difference in the churn rate of each city can be caused by the shipping factor, we can work with more accommodation services to provide more diverse shipping options in certain area

Recommendation



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- **Based on Payment Method**

Make sure the easiness of using credit card for payment method, so credit card users remain comfortable making transactions with their preferred payment method & offers special program to keep credit card user from churn. The most potential Pay later user, with the largest number of customers and a low churn rate, we can maintain it with the ease of payment method

- **Based on Segmentation**

The high churn rate in Royal Customer is a red flag that we're not maintain them well enough. Should be evaluate the loyalty program & our treatment based on their needs, and by offer a more attractive loyalty program so that Royal customers always keep transactions

Appendix

https://public.tableau.com/views/Churn_16590005209810/Cohort?:language=en-US&:display_count=n&:origin=viz_share_link

<https://colab.research.google.com/drive/1wn8LgaFp8pJdz3ar0DTuXz4zyh1rMgtw?hl=id#scrollTo=pTCuSVur5G-p>