



4MULA DATA

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Safiye GÜNDÖĞDU
Ayça Rabia YILDIRIM

Büşra ONAY
Enver Hakan DEMİR



OVERVIEW

1. Genel Information
2. RFM Segmentation
3. CLTV Analysis
4. Basket Analysis
5. Insights
6. Strategies



ATILLAOGULLARI
supermarket

OVERVIEW



 **18K**

Customer

 **60,3K**

Invoice Number

 **49**

Count of Shop

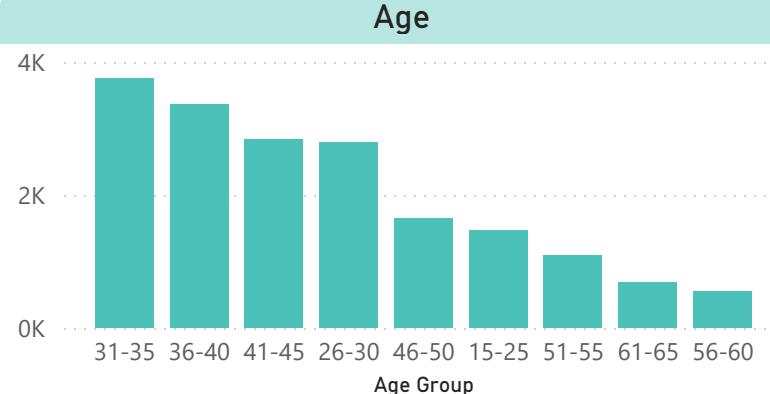
 **₺18M**

Sum of SubTotal

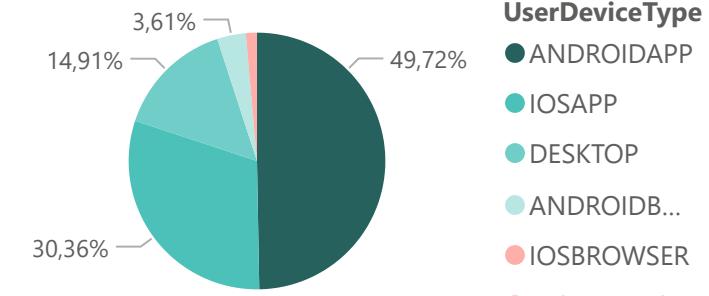
Gender



Age



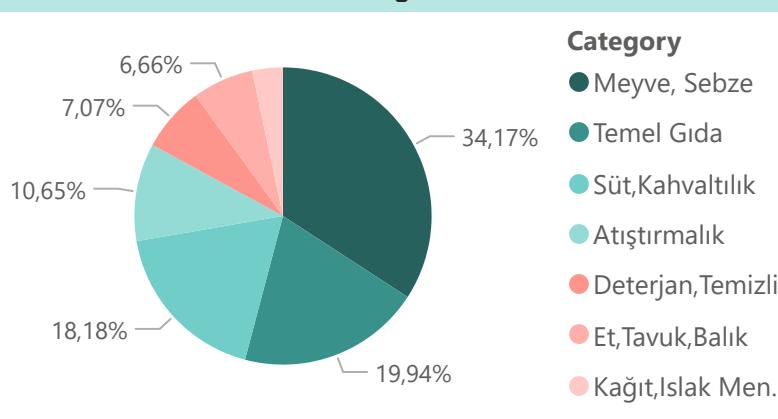
Device Type



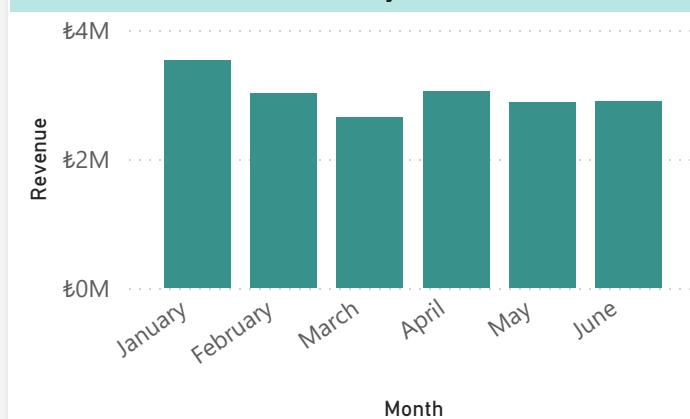
Orders by Month



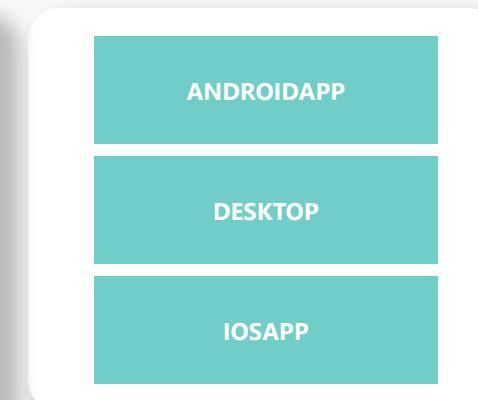
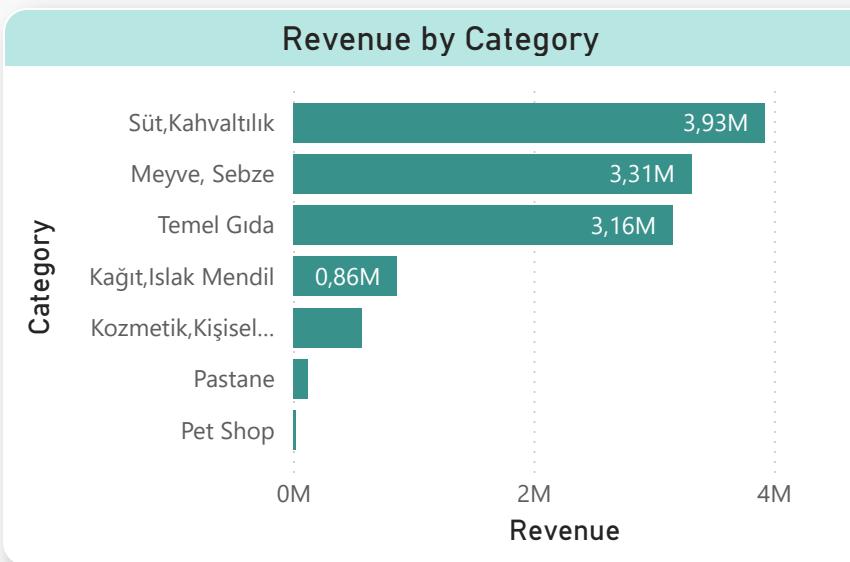
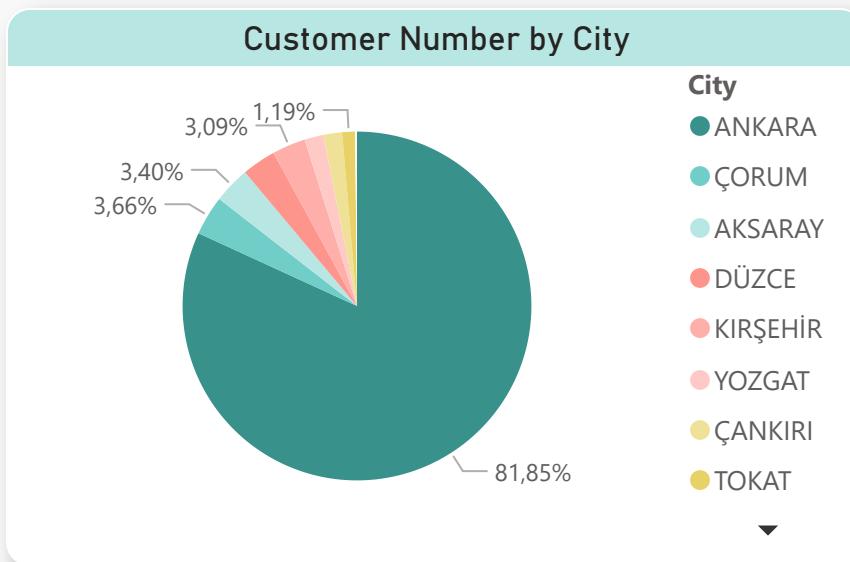
Categories



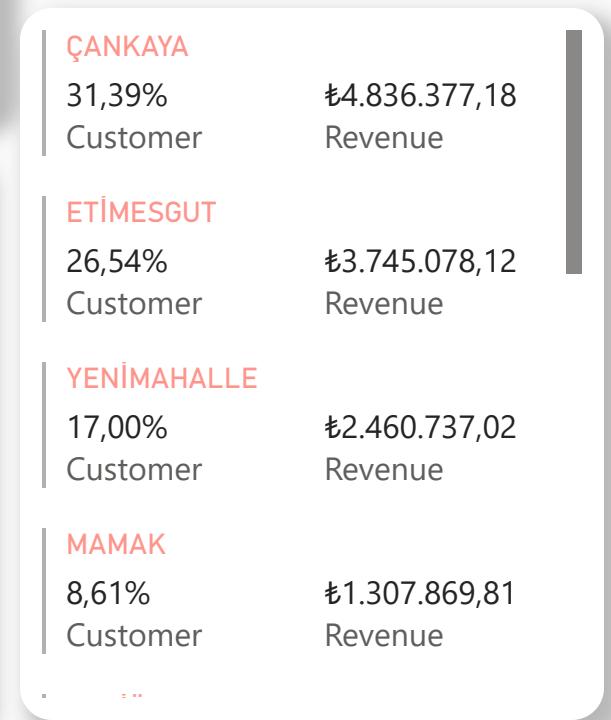
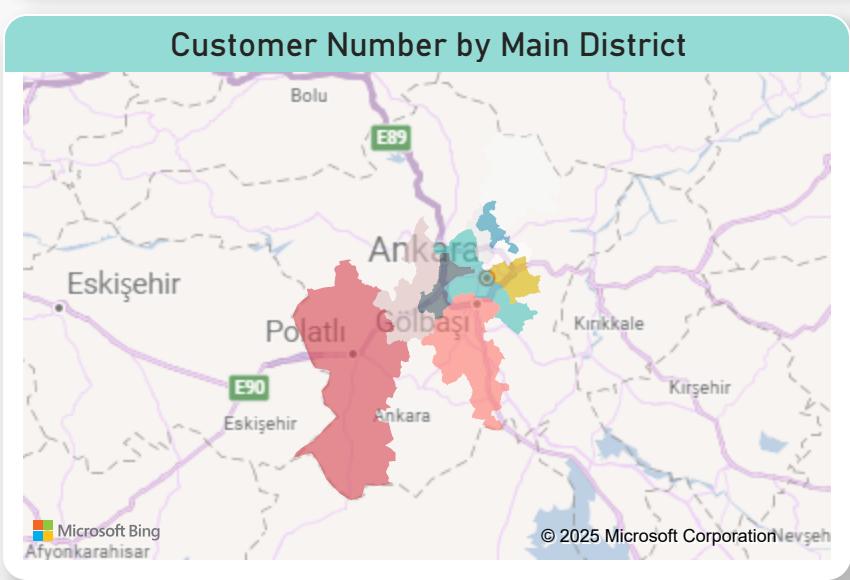
Revenue by Month



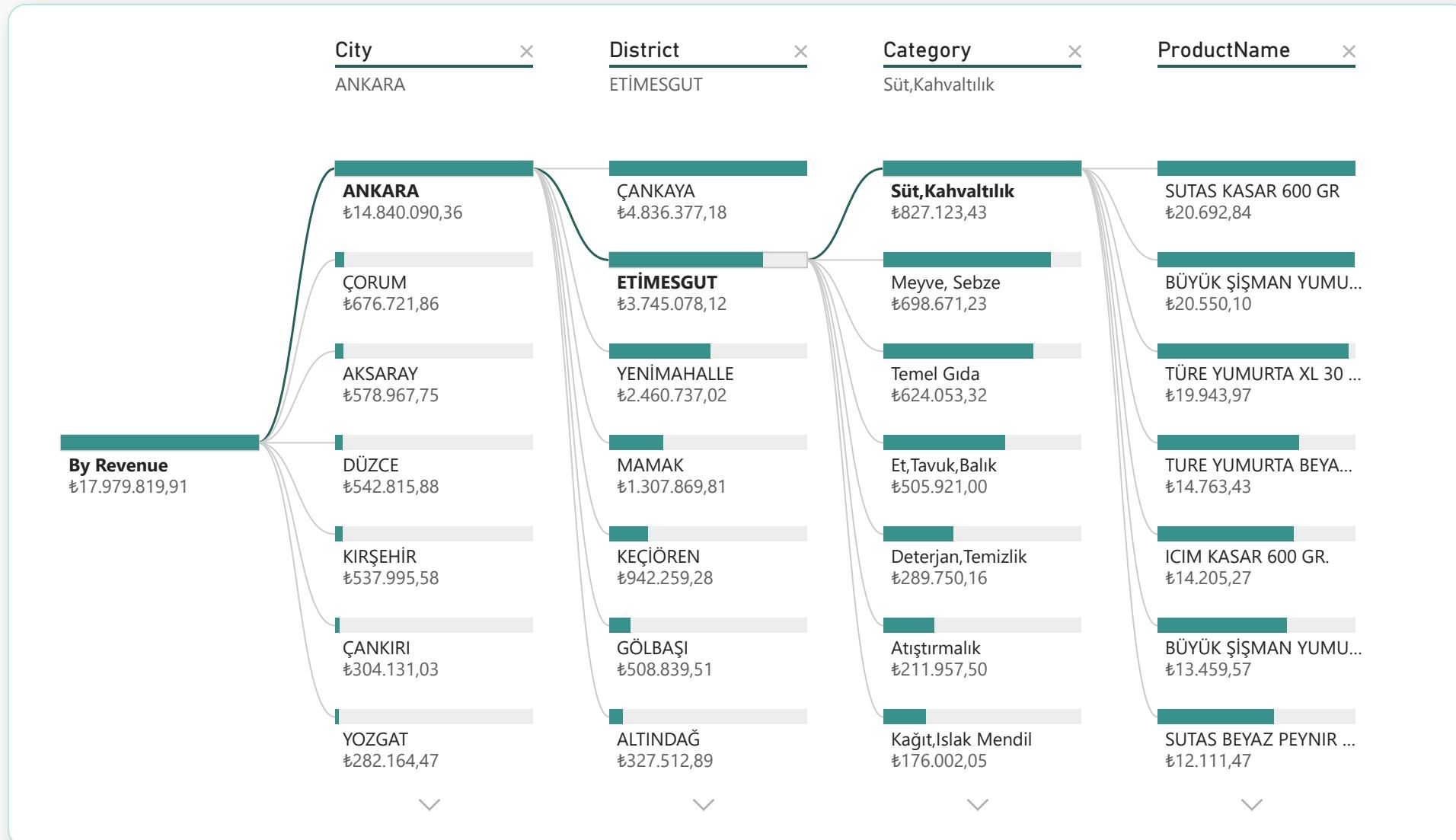
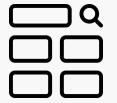
LOCATION ANALYSIS



City	Revenue	% GT Revenue	Count of Shop
ANKARA	14.881.428,84	82,54%	37
ÇORUM	678.138,43	3,76%	2
AKSARAY	580.372,53	3,22%	1
DÜZCE	544.007,02	3,02%	3
KİRŞEHİR	539.523,64	2,99%	1
ÇANKIRI	304.953,75	1,69%	2
YOZGAT	283.161,77	1,57%	1
TOKAT	183.763,96	1,02%	1
SAKARYA	33.660,14	0,19%	1
Total	18.029.010,09	100,00%	49



GENDER, CITY AND CATEGORY ANALYSIS



Gender

- Female
- Male

Insight

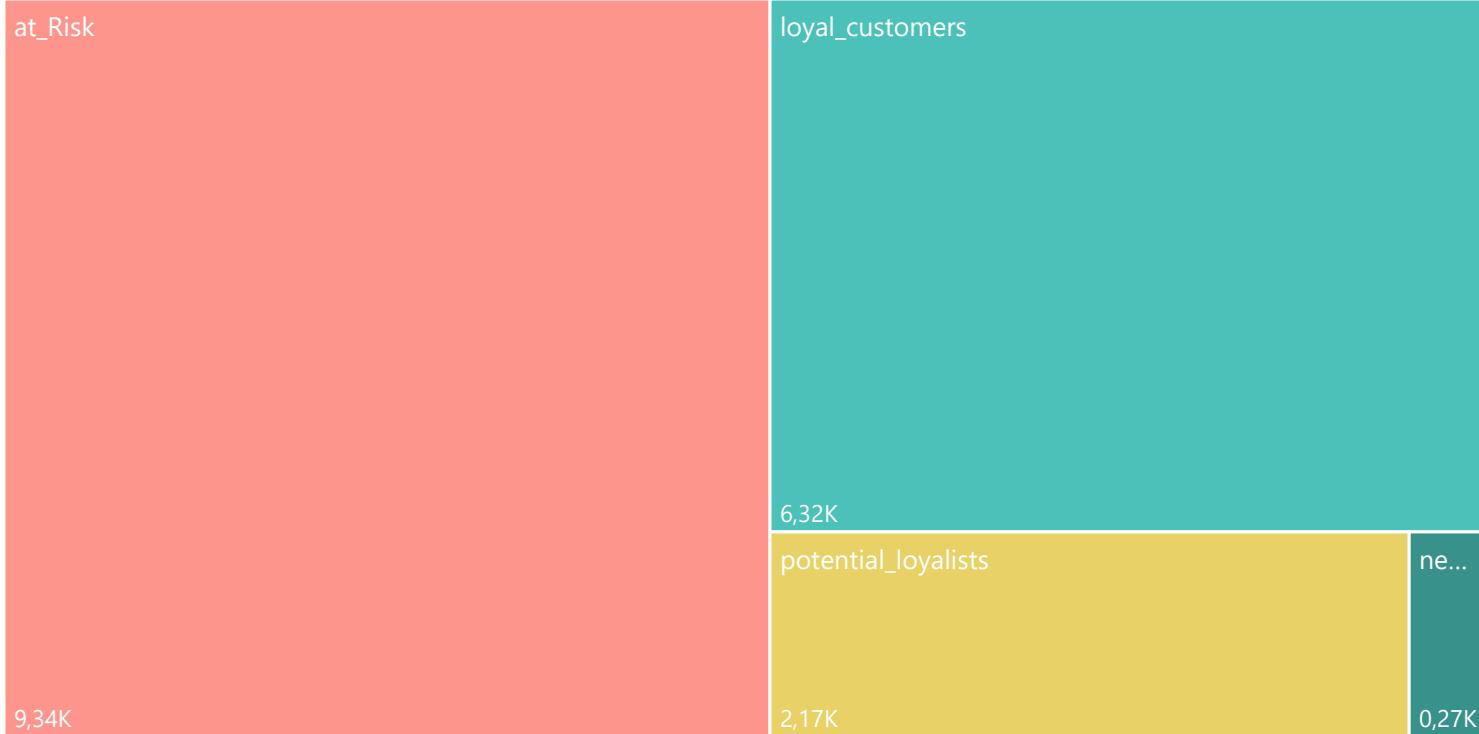


- *Dairy and Breakfast* is the top category almost all branches.
- *Fruit and Vegetable* and *Basic Food* vary slightly by location and gender.
- *Dairy and Breakfast* is the key category for online orders.

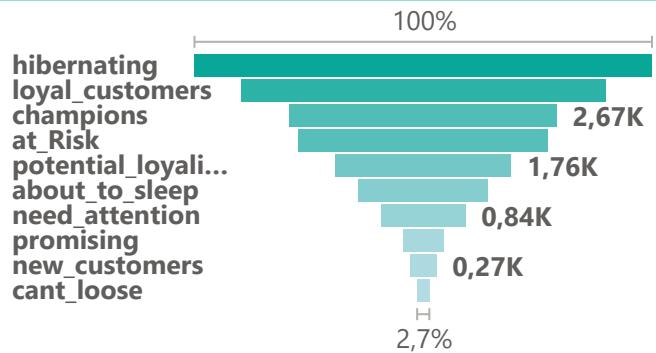
RFM SEGMENTATION



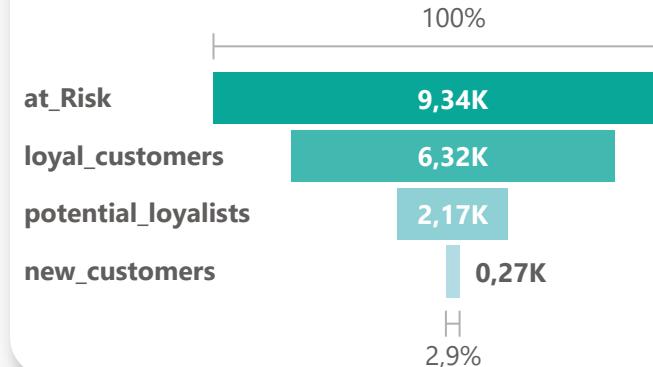
Customer by RFM Segments



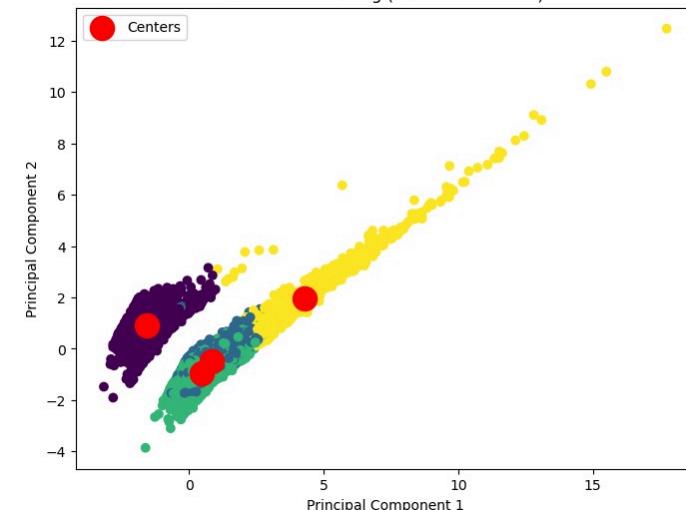
RFM with 10 Segmentation



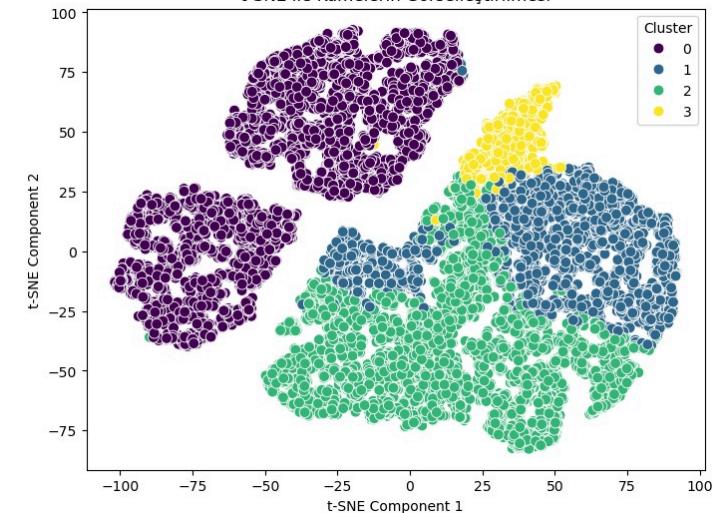
RFM with 4 Segmentation



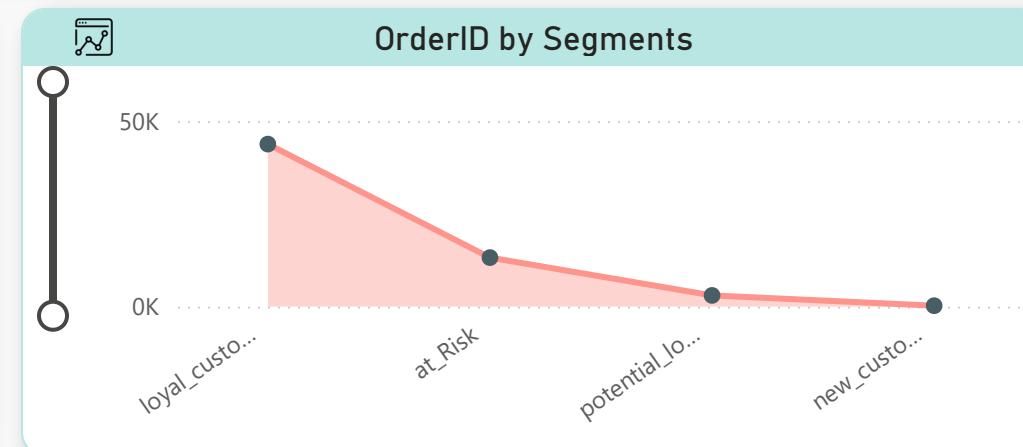
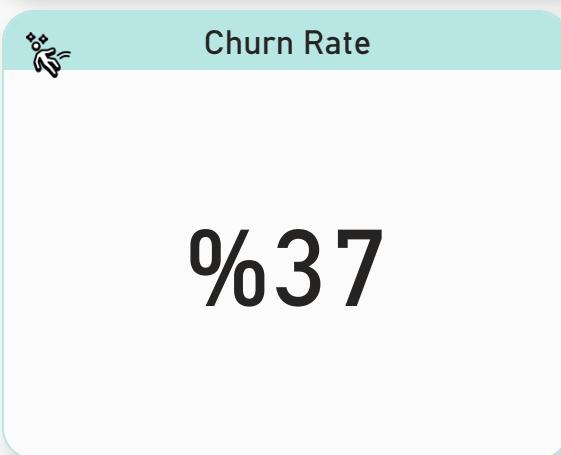
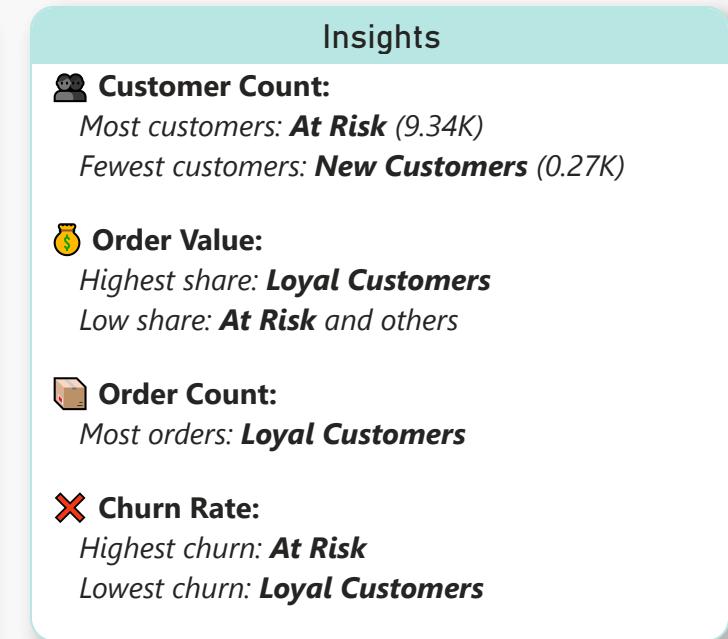
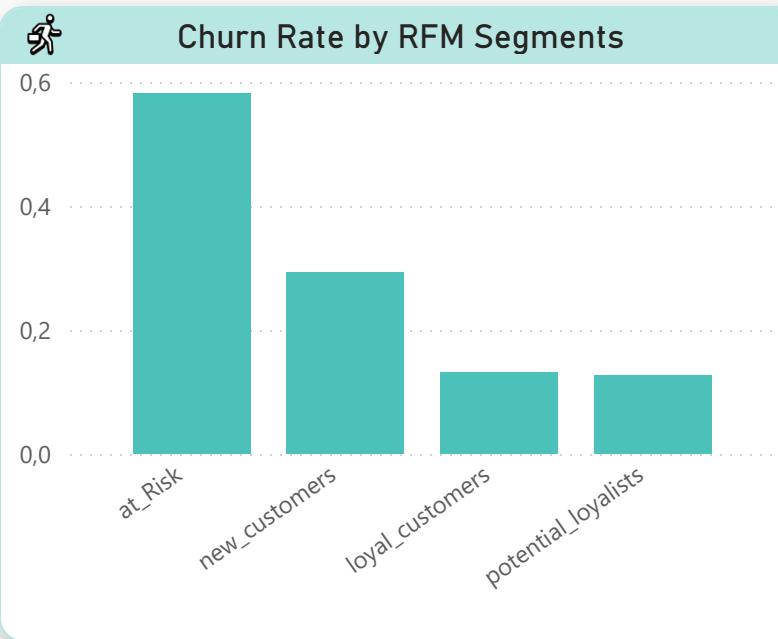
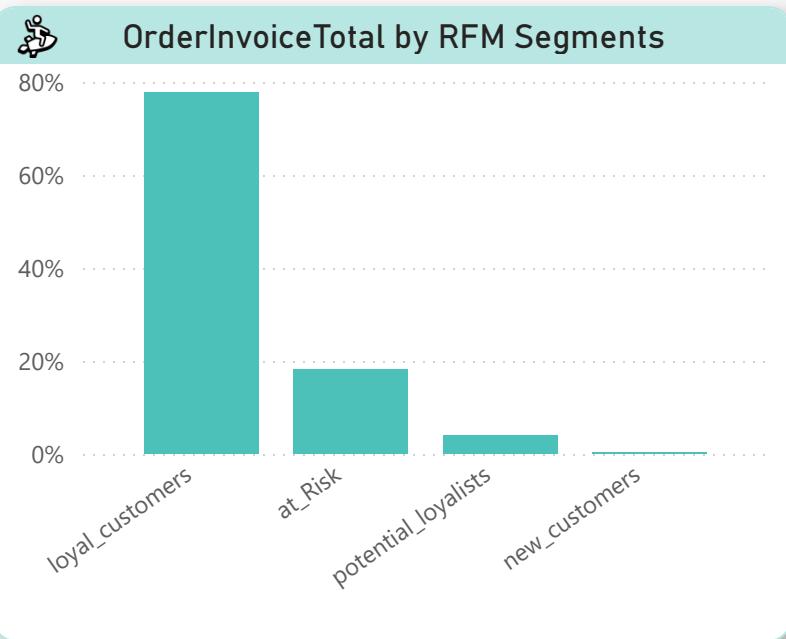
KMeans Clustering (PCA Visualization)



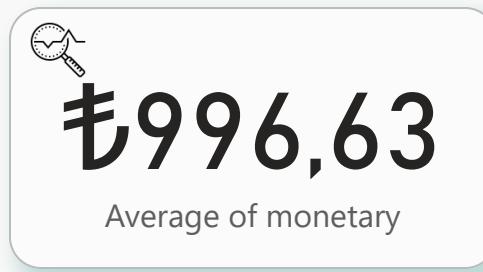
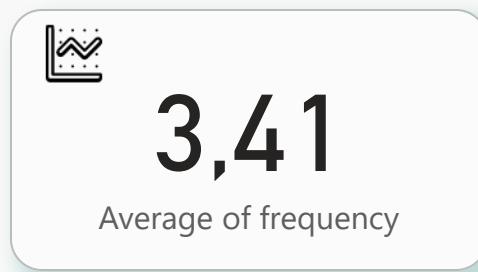
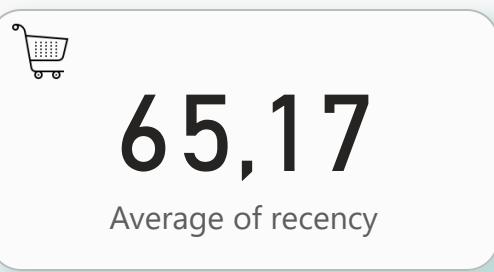
t-SNE ile Kümelerin Görselleştirilmesi



RFM & CHURN ANALYSIS



RFM



segment_rfm	Atıştırmalık	Deterjan,Temizlik	Et,Tavuk,Balık	İçecek	Meyve, Sebze	Süt,Kahvaltılık	Temel Gıda	Total
loyal_customers	7,78%	4,77%	4,42%	3,92%	27,80%	13,65%	13,77%	76,11%
at_Risk	2,00%	1,34%	1,14%	0,96%	6,86%	3,38%	3,48%	19,16%
potential_loyalists	0,45%	0,30%	0,27%	0,20%	1,54%	0,80%	0,82%	4,39%
new_customers	0,03%	0,02%	0,02%	0,02%	0,12%	0,06%	0,06%	0,34%
Total	10,27%	6,44%	5,85%	5,10%	36,32%	17,89%	18,12%	100,00%

Segments	Age Group	Gender	UserDeviceType	City	Neighborhood
Potential_loyalists	30-49	Female	ANDROIDAPP	ANKARA	MEDRESE & SERHAT
At_risk	30-49	Male	ANDROIDAPP	ANKARA	BAĞLICA & YAŞAMKENT
New_customers	18-29	Female	ANDROIDAPP	ANKARA	AZİZİYE & BAĞLARBAŞI & KUTLU & KÜLTÜR & OĞUZLAR & ŞENLİK
Loyal_customers	30-49	Female & Male	ANDROIDAPP	ANKARA	ATA

Offer

Loyal Customers:

(30-49, Female & Male)

- A group with high engagement and consistent purchases, showing strong loyalty.

New Customers:

(18-29, Female)

- New customers who can be encouraged to stay loyal with targeted incentives.

At Risk Customers:

(30-49, Male)

- This group is mostly male and shows signs of disengagement. Re-engagement strategies can help prevent churn.

Potential Loyal Customers:

(30-49, Female)

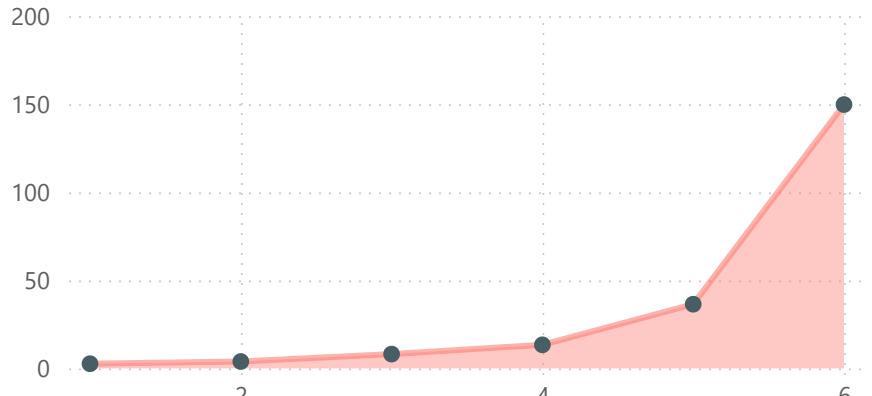
- Customers who have the potential to become loyal with the right incentives.



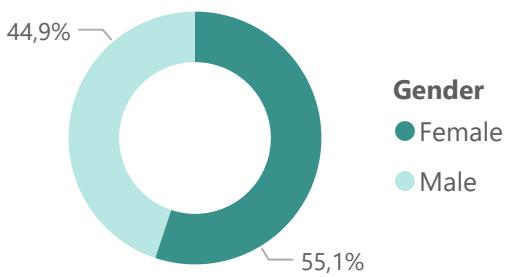
CLTV

A B C D

CLTV by Month



CLTV Share by Gender

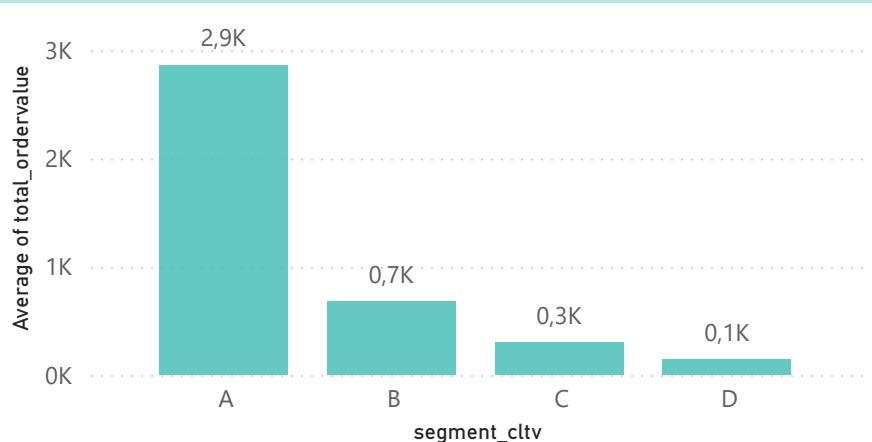


Gender
● Female
● Male

Churn Rate

%37

Sales Contribution by Segment



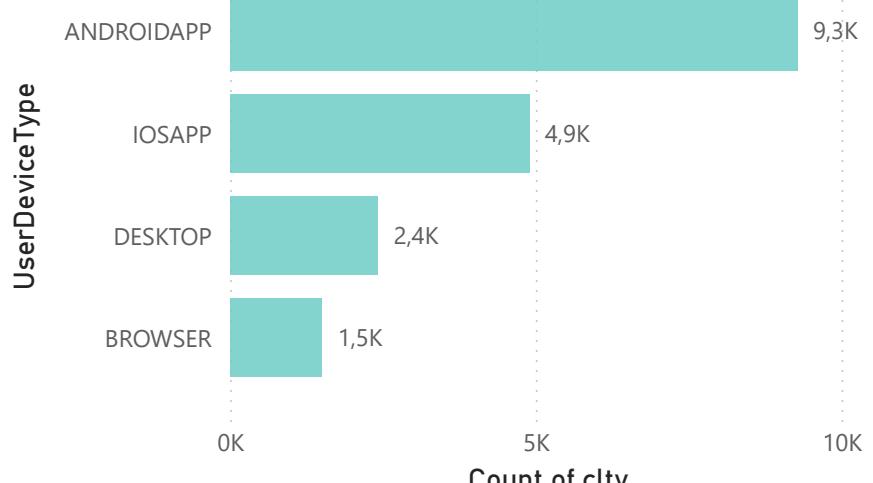
Insights

Loyalty programs should be developed for high-CLTV customers, while personalized campaigns should be implemented to reduce churn among low-CLTV segments.

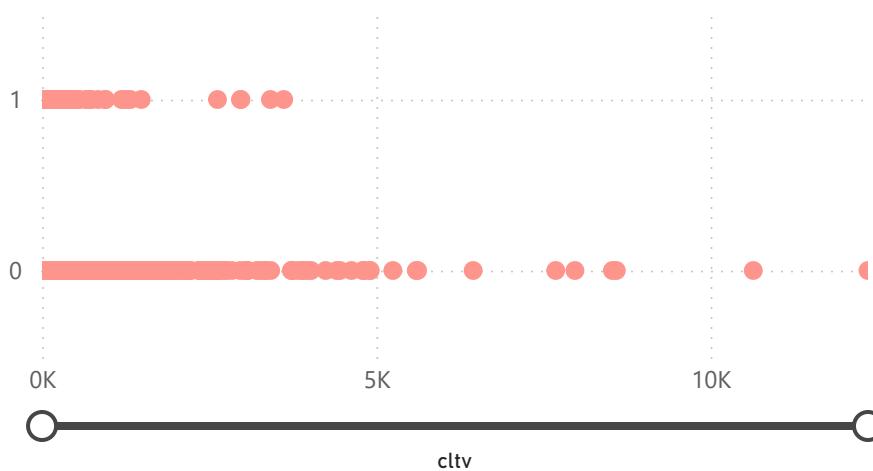
Tips:

- Push notifications for Android users.
- Campaigns every 30-40 days (Recency: 65 avg).

CLTV by UserDeviceType



Churn vs CLTV



CLTV ANALYSIS



Customer Transition Between CLTV Segments

Segment A → Segment B → Segment C → Segment D

Segment D → Segment C → Segment B → Segment A

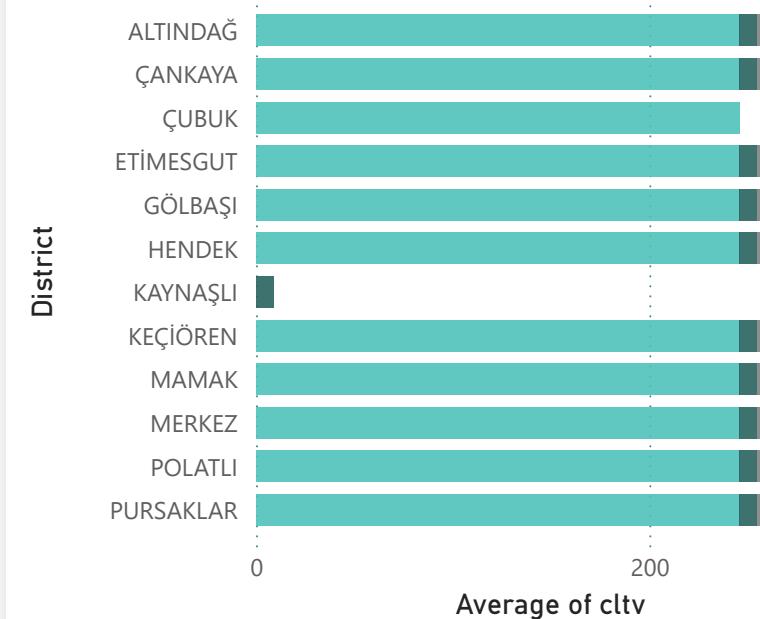
Insights



To mitigate losses in Segment A, targeted customer retention strategies should be developed, while loyalty campaigns should be designed to accelerate growth in B and C segments.

CLTV Averages by District and Segment

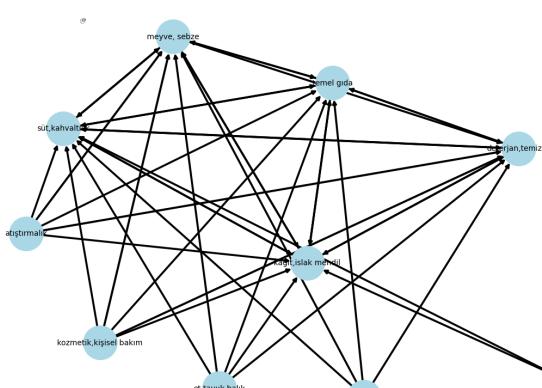
segment_cltv ● A ● B ● C ● D



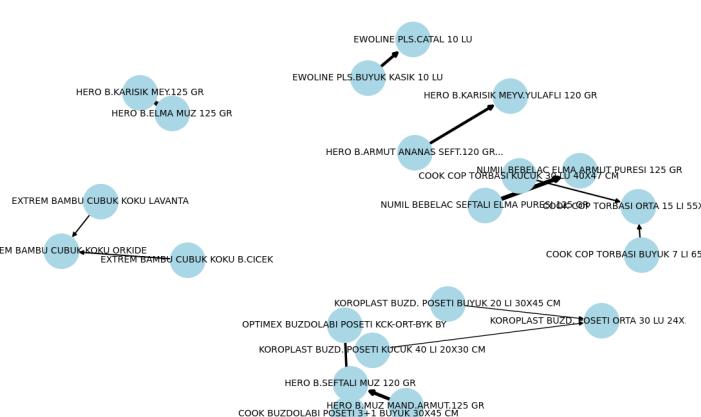


BASKET SIZE ANALYSIS

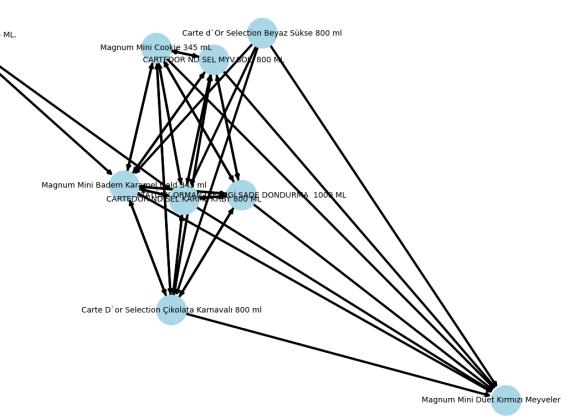
Market Basket Kuralları Ağı (Lift ile Ağırlılandırılmış)



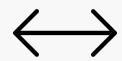
Market Basket Graph - group5_df



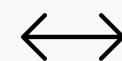
Market Basket Graph - dondurma



KOZMETİK, KİŞ. BAKIM



DETERJAN, TEMİZLİK



EV, YASAM

HERO / APTAMIL ÜRÜNLERİ



BABY TURCO ISLAK HAVLU ÇEŞİTLERİ



MAXİ HAVLU RULO ÜRÜNLERİ

Sepet Analizi Seçilmiş Sonuçlar

Association Rules

1827

antecedents

- 'ABDURRAHMAN TATLICI PEKMEZ 650 GR'
- 'CHEETOS FISTIKLI 41 GR', 'CHEETOS BIFTEKLI 41 GR'
- 'CHEETOS FISTIKLI 41 GR', 'CHEETOS PEYNIRLI 41 GR'
- 'CIZMECI WAFER SLIM GOF.CIKO. 20 GR'
- 'CIZMECI WAFER SLIM GOF.CIKO. 20 GR'
- 'CIZMECI WAFER SLIM GOF.FINDIKLI 20 GR', 'CIZMECI WAFER SLIM GOF.CIKO. 20 GR'
- 'CIZMECI WAFER SLIM GOF.FINDIKLI 20 GR', 'CIZMECI WAFER SLIM GOF.SUTLU 20 GR'

consequents

- 'ABDURRAHMAN TATLICI TAHİN 500 GR'
- 'COOK COP TORBASI ORTA 15 LI 55X60 CM'
- 'ETI SUT BURGER 35 GR'
- 'ULKER 761-8 COKONAT 5 LI 120 GR'
- 'ETI SUT BURGER CILEKLİ 35 GR'
- 'CIZMECI WAFER SLIM GOF.FINDIKLI 20 GR'
- 'CIZMECI WAFER SLIM GOF.SUTLU 20 GR'

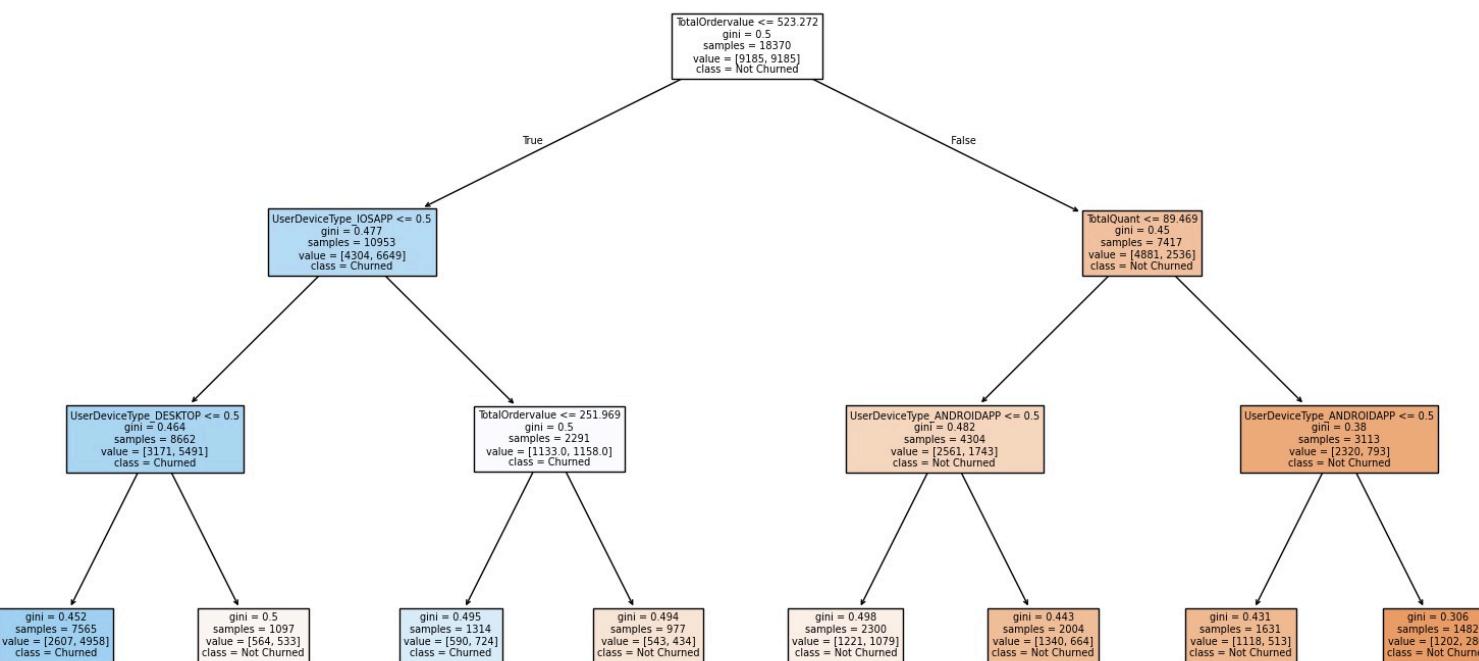
confidence

0,50	73,18
0,53	38,38
0,52	31,88
0,50	168,99
0,72	177,97
0,57	193,13
0,60	225,02

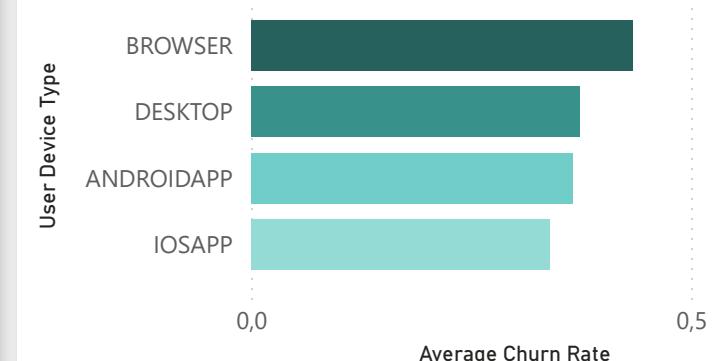
lift



DECISION TREE



Churn Rate By User Device Type



Insights

We predicted that the churn rate of customers logging in from mobile browsers is high and this rate will increase in the coming months for the application.

With the unsupervised learning appriori algorithm, we extracted 1827 association rules between products and categories. We developed sample campaign suggestions accordingly.

OFFERS AND CAMPAIGNS



Yeni Müşteri Kampanyası

"Kahvaltıya Lezzetli Bir Başlangıç: İlk Siparişine %20 İndirim!"

- Kampanya:** Uygulama Üzerinden ilk Kahvaltılık Alışverişine %20 İndirim
- İçerik:** İlk siparişte Süt ve Kahvaltılık kategorisinden yapılan alışverişlerde %20 indirim
- Hedef:** İlk alışverişi teşvik etmek ve alışveriş bariyerini azaltmak

Müşteri Sadakati Kampanyası

"4. Siparişine Özel 100 TL Değerinde Süt Kahvaltılık İndirimleri!"

- Kampanya:** 4. siparişte 100 TL Değerinde İndirim
- İçerik:** 4. kahvaltılık alışverişini tamamlayan müşterilere 100 TL değerinde özel kahvaltılık indirimleri
- Hedef:** Sadık müşteri kitlesi oluşturmak ve alışveriş frekansını artırmak

Sepet Arttırıcı Kampanya

"750 TL'lik Kahvaltılık Alışverişine Anında 50 TL İndirim!"

- Kampanya:** 750 TL'lik Kahvaltılık Alışverişine 50 TL İndirim
- İçerik:** Süt ve Kahvaltılık ürünlerinden yapılan 750 TL ve üzeri alışverişlerde anında 50 TL indirim
- Hedef:** Ortalama sepet tutarını ve satış hacmini artırmak





Tesekkürler...

References:

- Sabuncu, İ., Türkan, E., & Polat, H. (2020). Customer segmentation and profiling with RFM analysis. *Turkish Journal of Marketing*, 5(1), 22-36..
- Ezerçe, A. (2008). Müşteri ilişkileri yönetimi (CRM) ve veri madenciliği (datamining): Tekstil sektöründe bir uygulama. Yayımlanmamış Yüksek Lisans Tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü, İstanbul.
- Başkol, M. (2020). RFM ve Uyum Analizi Kullanılarak Müşteri Segmentasyonunun Belirlenmesi. *Business & Management Studies: An International Journal*, 8(4), 902-928.
- Bayram, E. (2001). Customer Segmentation and Churn Modeling In Wireless Communications. Master of Science Thesis

