TravelTide Rewards Program: Customer Segmentation
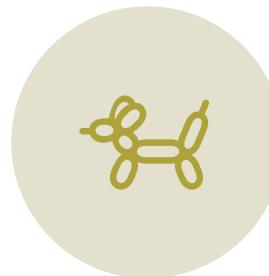

CUSTOMER SEGMENTATION
FOR PERSONALIZED REWARDS

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Business Context

TravelTide möchte Kundenbindung und Buchungsaktivität durch ein personalisiertes Rewards-Programm steigern

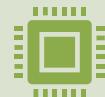Kunden unterscheiden sich stark in ihrem Buchungs- und Preisverhalten

„One-size-fits-all" Rewards sind ineffizient und kostenintensiv

Ziel: Verhaltensbasierte Segmentierung zur gezielten Aussteuerung von Rewards

Data & Feature Engineering

Analyse basiert auf historischen Buchungsdaten von TravelTide (users mit mehr als 7 Sessions in 2023)

Fokus auf wiederkehrende Verhaltensmuster statt Demografie

Keine demografischen Annahmen

Daten wurden auf **Customer-Ebene** aggregiert

Ergebnis: Vergleichbare Features für alle Kunden

- Booking value proxy
- Lead time
- Bundling ratio
- Discount sensitivity
- Cancellation rate
- Tenure & recency

Segmentation Methodology

Zwei Ansätze:

Manuelle, business-orientierte Segmentierung

K-Means clustering zur validation

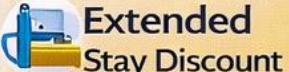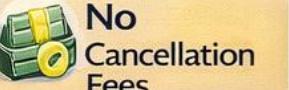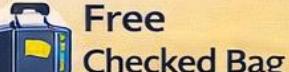Acht standardisierte Verhaltensmerkmale

Features scaled durch **z-score normalization**

Fünf Segmente für bessere Interpretierbarkeit und praktische Nutzung (trotz besserer statistischer Trennung bei weniger Segmenten)

Customer Segments

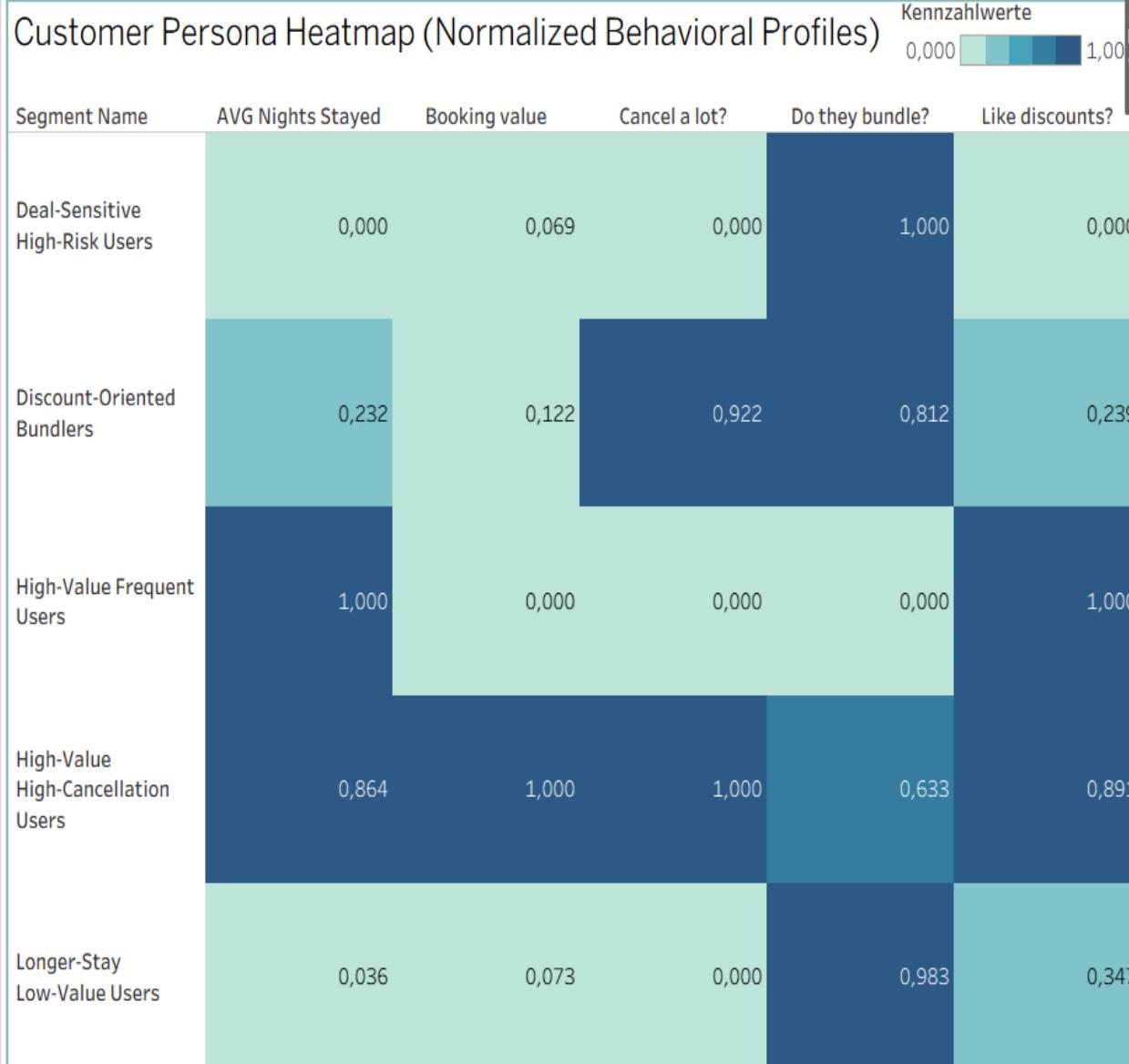|	Discount-Oriented Bundlers	Longer-Stay Low-Value Users	High-Value Frequent Users	High-Value High-Cancellation	Deal-Sensitive High-Risk Users
Core Behavior	Price-sensitive, bundles flights + hotels, reacts to discounts	Long stays, simple bookings, low engagement	Frequent activity, moderate–high spend, low cancellations	Very high spend, very high cancellation rate	High value, volatile, actively hunts deals
Key Need / Pain Point	Wants access to the best deals	Needs soft activation, low commitment	Wants premium experience without discounts	Needs flexibility, fears penalties	Wants visible monetary savings
Recommended Perk	24 Early Deal Access	Extended Stay Discount	1 Free Hotel Night	No Cancellation Fees	Free Checked Bag
Business Logic	• Strong behavioral match.	• Low-cost perk. • Tangible soft hook	• Rewards loyalty • Easy to understand	• Removes friction. • Retains high-value	• Feels like saving. • Less margin damage
Strategic Goal	• Increase email CTR and conversions	• Activate low-value users cheaply	• Increase lifetime value	• Reduce churn risk	• Capture deal driven demand

Each segment reflects:

distinct behavior

different business risks

different reward preferences

From Behavioral Data to Personalized Reward Recommendations

Customer Persona Heatmap (Normalized Behavioral Profiles)

Kennzahlwerte
0,000 — 1,00

Segment Name	AVG Nights Stayed	Booking value	Cancel a lot?	Do they bundle?	Like discounts?
Deal-Sensitive High-Risk Users	0,000	0,069	0,000	1,000	0,000
Discount-Oriented Bundlers	0,232	0,122	0,922	0,812	0,239
High-Value Frequent Users	1,000	0,000	0,000	0,000	1,000
High-Value High-Cancellation Users	0,864	1,000	1,000	0,633	0,891
Longer-Stay Low-Value Users	0,036	0,073	0,000	0,983	0,347

Segment-to-Perk Mapping

Segment Name	Perk	
Deal-Sensitive High-Risk Users	Free Checked Bag	Feels like a monetary saving. Travel-specific. Works well for frequent deal travelers...
Discount-Oriented Bundlers	Early Deal Access	This is literally what they respond to. Strong behavioral match. Highest expected click-through for this group.
High-Value Frequent Users	1 Free Hotel Night	Rewards loyalty without training them to expect discounts. Encourages more high-value trips. Feels premium, not "cheap".
High-Value High-Cancellation Users	No Cancellation Fees	Directly addresses their main pain point. Removes friction for sign-up. Keeps high-value but volatile users in the ecosystem.
Longer-Stay Low-Value Users	Extended Stay Discount	Low cost perk. Tangible, easy to understand. Doesn't require heavy spending or commitment...

Total Booking Value by Segment

Summe von value_pr..
113.806 — 1.620.301

Segment Name

- Longer-Stay Low-Valu.. : 1.620K €
- Deal-Sensitive High-R.. : 1.156K €
- Discount-Oriented Bu.. : 485K €
- High-Value High-Canc.. : 366K €
- High-Value Frequent .. : 114K €

Rewards Mapping: Personas

Sarah
Discount-Oriented Bundler

- Joined: Jan 2023
- Home: Denver, DEN
- Avg. Lead Time: **148** Days
- Bundling Rate: 92%
- Discount Sensitivity 24%
- Cancellation Rate: 11%

Perk: Early Access to Deals

Mike
Longer-Stay Low-Value User

- Home: New Orleans, NBG
- Longer Stays
- Avg. Lead Time: 9 Days
- **$544.59** Per-Trip Spend
- Cancellation Rate: 6%

Perk: *Discount on Longer Stays*

Emily
High-Value Frequent User

- Joined: Nov 2022
- Home: New York, LGA
- Total Spend: **$14,031**
- Avg. Lead Time: 4 Days
- Avg. Nights Stayed: 14
- Cancellation Rate: 7%

Perk: Free Hotel Night

Anna
High-Value High-Cancellation User

- Joined: Feb 2022
- Home: Miami, MIA
- Frequent Bundler
- High Spending
- Total Spend: **$14,031**
- Cancellation Rate: **74%**

Perk: *No Cancellation Fees*

Tom
Deal-Sensitive High Risk User

- Joined: Nov 2022
- Home: Sacramento, MCC
- Highly Price Sensitive: **91%**
- Avg. Lead Time: 7 Days
- Cancellation Rate: 48%

Perk: *Free Checked Bag*

Validation

K-Means used as robustness check

Moderate Übereinstimung *zwischen der manuellen Segmentierung und der Clustering* (ARI ≈ 0.31, NMI ≈ 0.41)

Manual segmentation preferred for interpretability

Business Impact & Conclusion

Segmentierung übersetzt Buchungsverhalten in klare Entscheidungsgrundlagen

Personalisierte Perks ohne hohe operative Komplexität

Effizienter Einsatz von Perks durch gezielte Kundengruppen und bessere Balance zwischen Kundennutzen und Wirtschaftlichkeit

Grundlage für datenbasierte Marketing- und Produktentscheidungen

Future Work

Überführung der Segmente in operative Marketingmaßnahmen

Einsatz von A/B-Tests zur Bewertung der Reward-Wirkung

Messung von Effekten auf Buchungsrate, Umsatz und Stornierungen

Regelmäßige Aktualisierung der Segmente auf Basis neuer Daten

Integration in ein Dashboard zur laufenden Steuerung

Vielen Dank!