CREATED BY:

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Sales & Customer Analytics

Revenue, Profitability & Growth Strategy

About Project

End-to-end BI project using SQL, Power BI and customer-level transaction

DATA SOURCES:
- Dataset : Sales and Customer Insight (E-Commerce)
- Source: https://www.kaggle.com/code/ashikshahriar/sales-and-customer-insight
- Structure: 15 columns and 10,000 rows

DATA & TOOLS
- Dataset: ~10K customers with category, region, season, LTV, churn, and retention strategy fields
- Focus on North and South America segments
- Tools used: SQL (views, aggregations, CTE), Power BI (dashboards, DAX, tables).
- Key metrics available: revenue, Lifetime Value, purchase frequency, average order value, churn probability

PROJECT GOALS
- Identifying which customers and product categories drive the most revenue and lifetime value
- Comparing purchase behavior (frequency, basket size, timing) across segments
- Understanding churn and retention by region, category, season, and retention strategy
- Finding segments with good growth or optimization potential

Dashboard Structure

01   CATEGORY OVERVIEW

02   SEASON & REGION PERFORMANCE

03   CHURN & RETENTION

04   GROWTH OPPORTUNITIES

Category Overview

Region
All

Season
All

Categories
All

Total Customer	Total Revenue	Per Customer Value	Per Order Value	Average Purchase Frequency	Churn Rate
10K Customers	**$50.32M** Revenue	**$5.03K** Per Customer	**$110.01** Per Order	**9.96** Frequency	**50.16%** Churn

Categories drive per customer

Season Performance

● North America ● South America

Retention Strategy

● Discount ● Email Campaign ● Loyalty Program
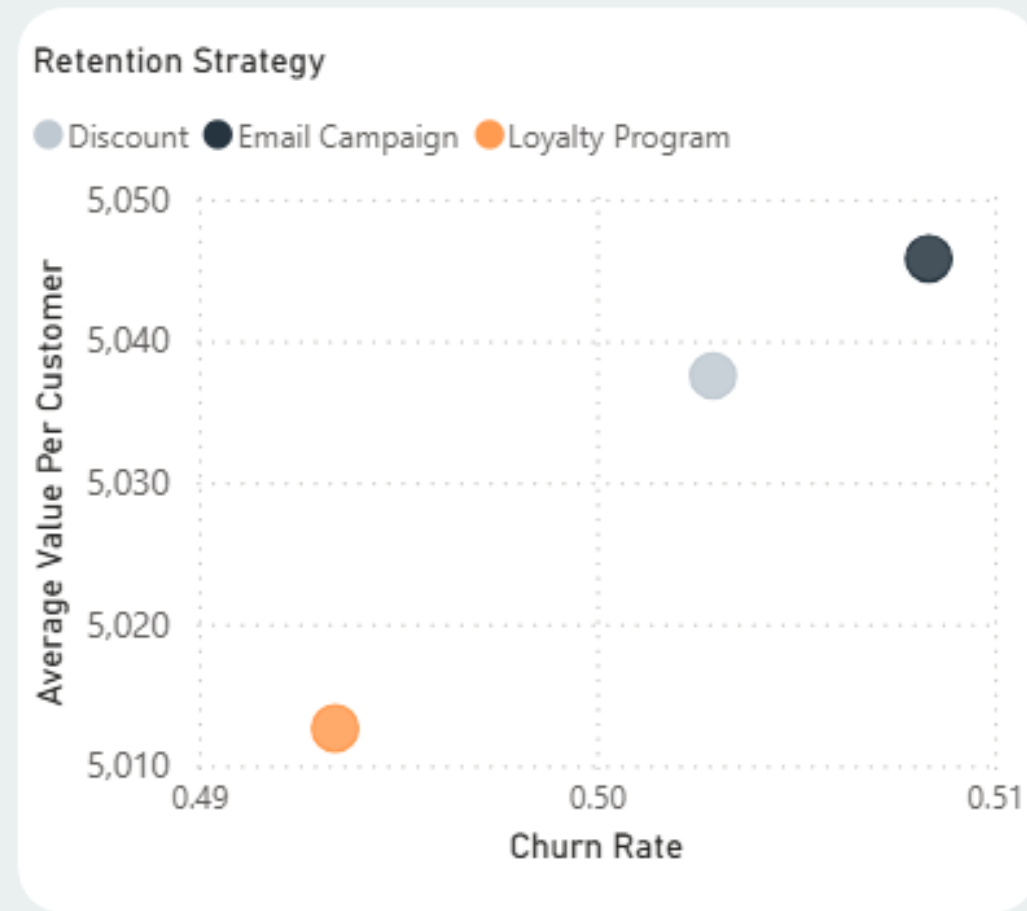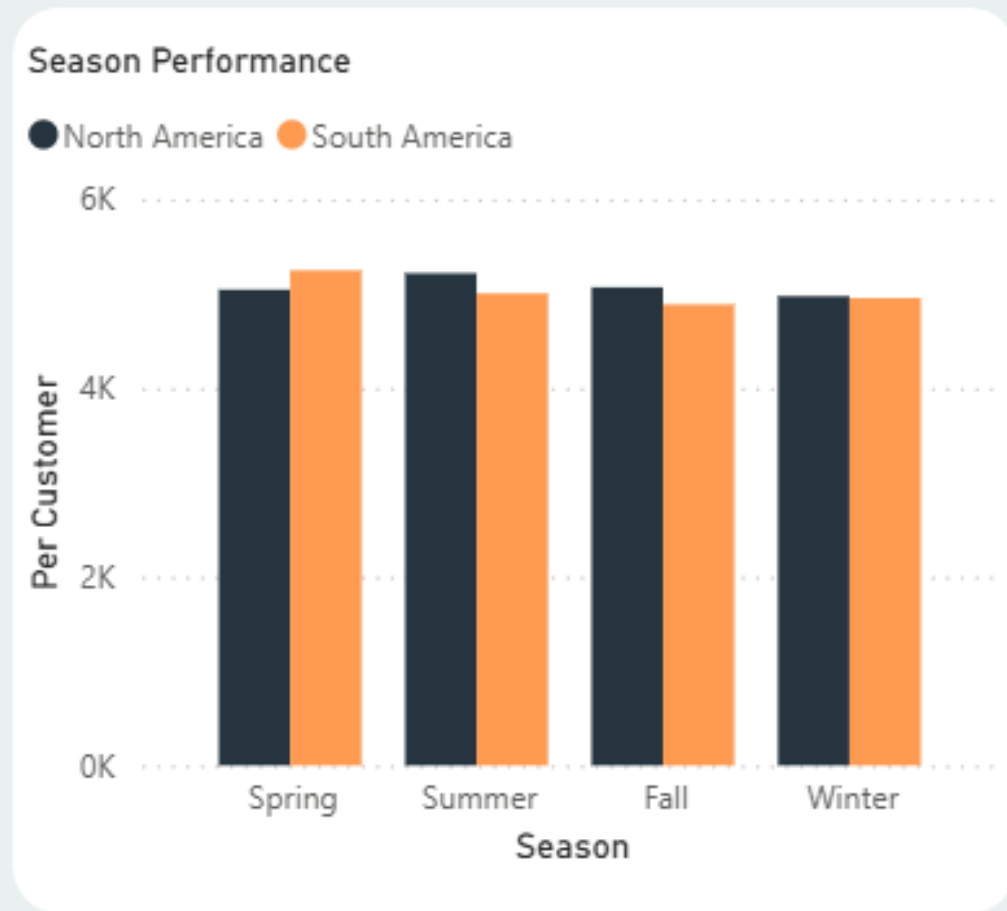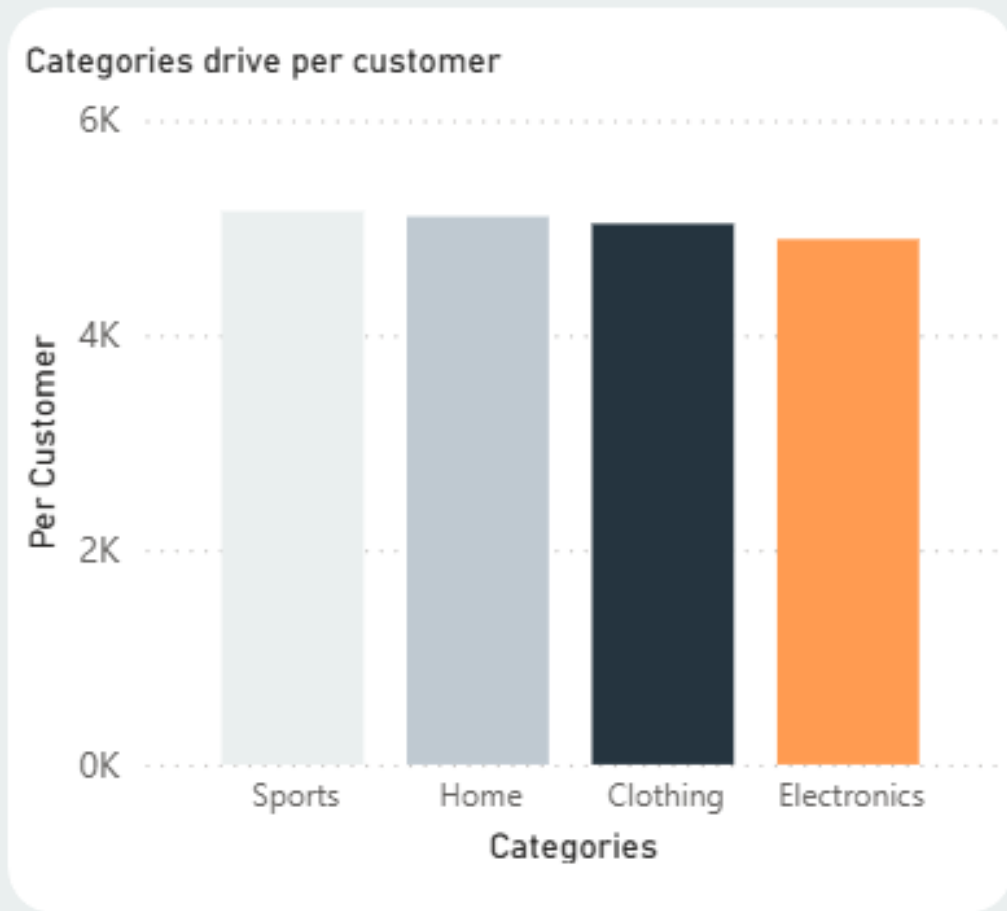
Season & Region Performance

Categories
All

Season
All

Retention Strategy
All

Value by Season

$5.03K

Per Customer

Churn Rate

50.16%

Churn

Per Customer Value
By Region and Season

Region	Fall	Spring	Summer	Winter
North America	5,066.28	5,041.81	5,215.47	4,972.48
South America	4,886.33	5,246.19	5,002.00	4,952.97

● Best ● Grow but fix churn ● Fix first

Invest More In

Spring – South America

Best Season Region

Fix First

Fall – South America

Worst Season Region

Per Customer Value by Season and Region

● North America ● South America

Churn by Season and Region

● North America ● South America

Frequency by Season and Region

● North America ● South America
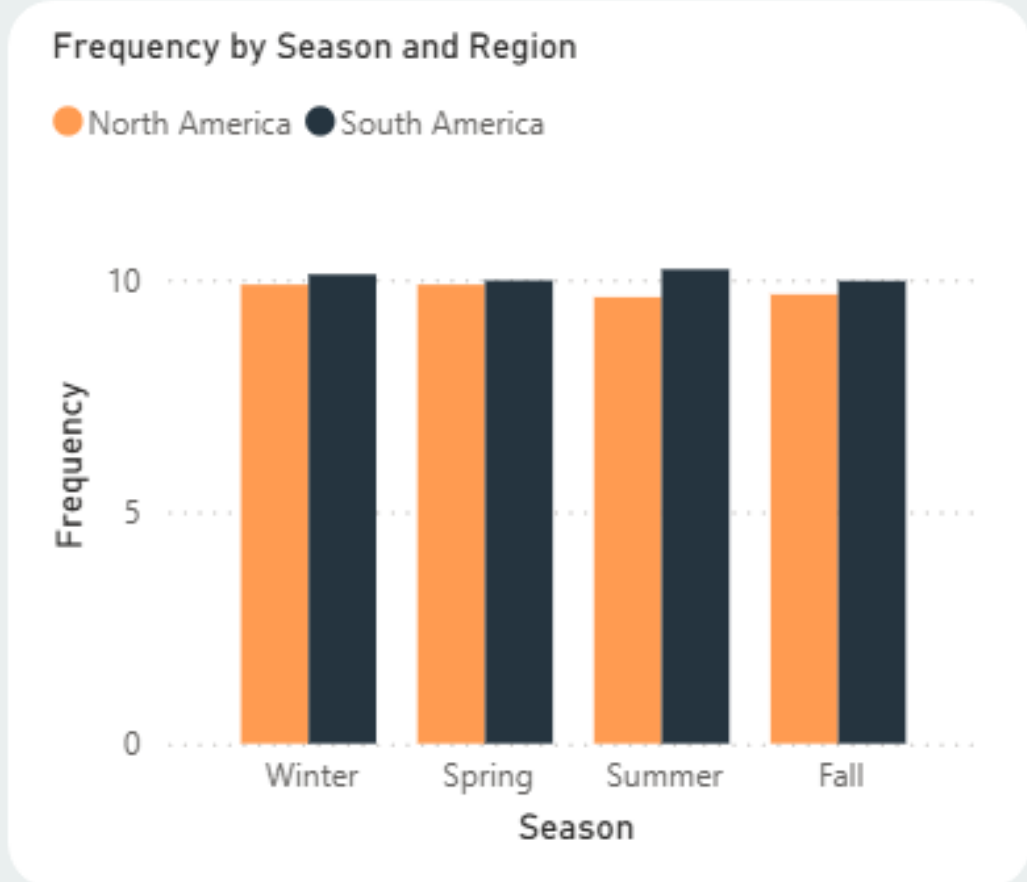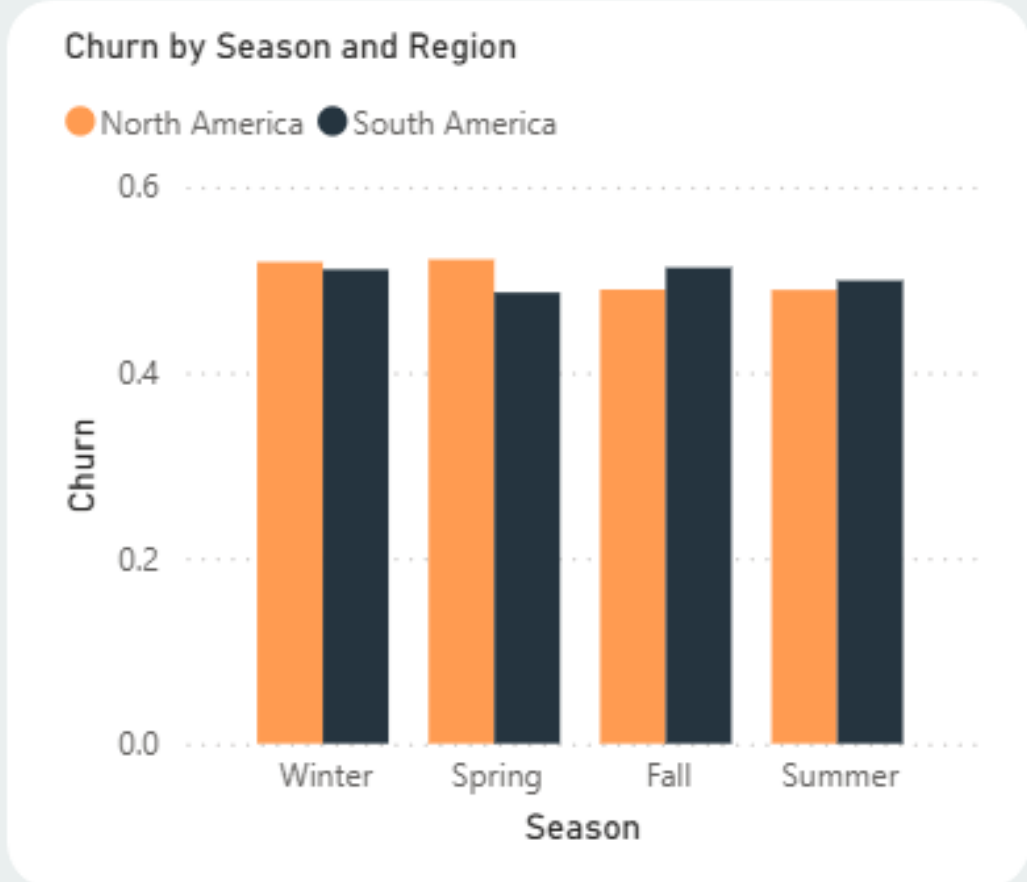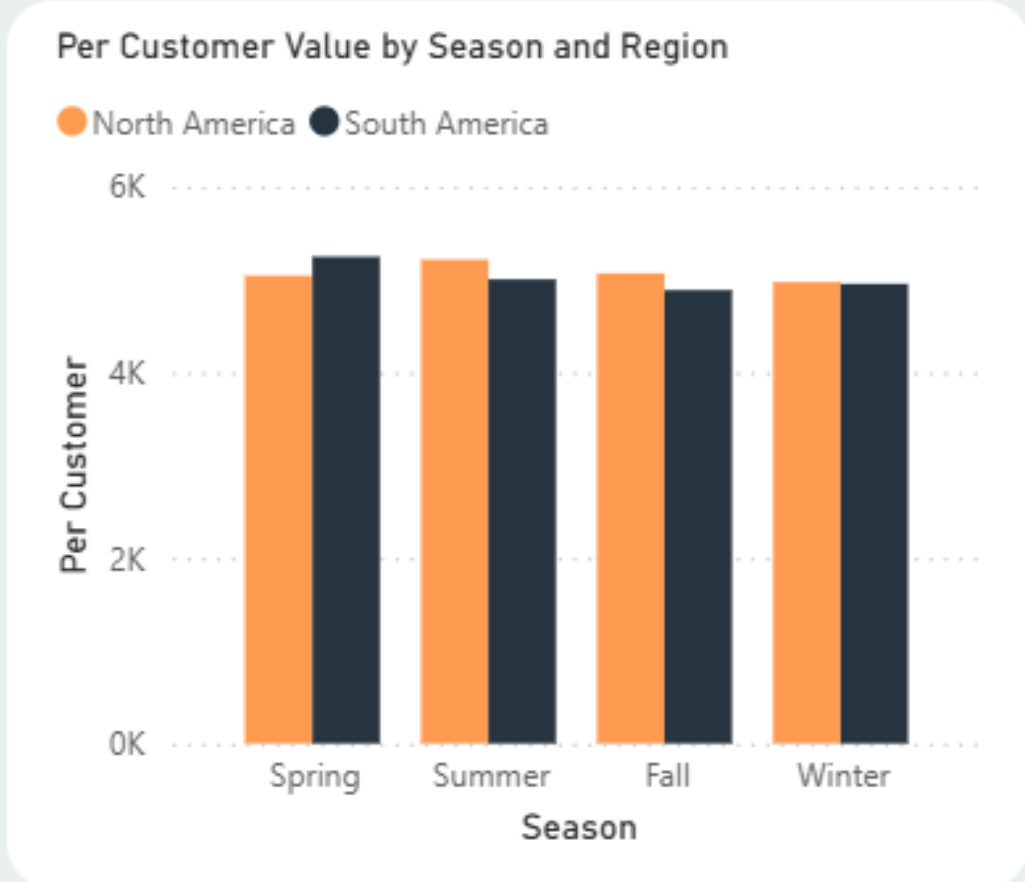
Churn & Retention

Region	Season	Categories	Retention Strategy
All	All	All	All

Average Churn
0.50
Churn

Churn - Discount
0.50
Churn

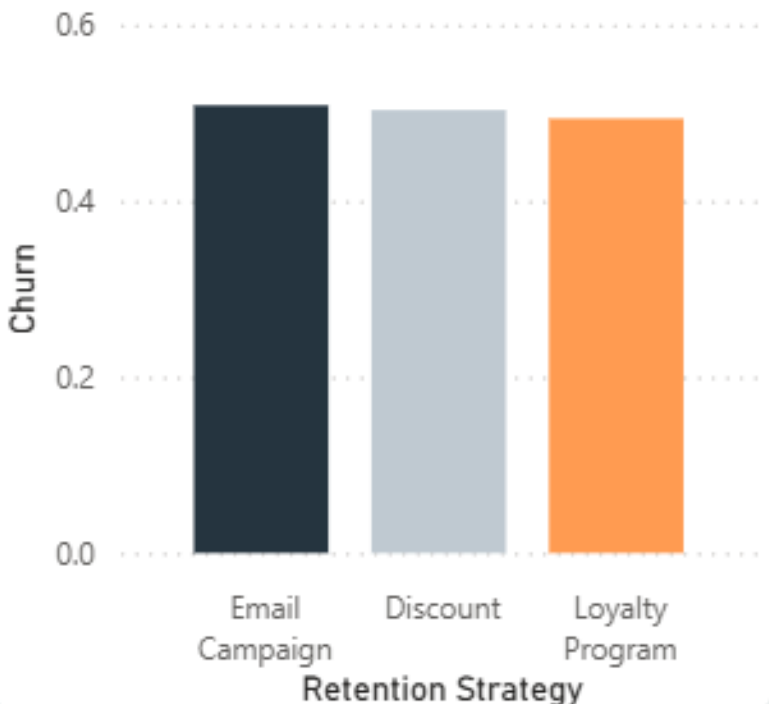## Churn - Email Campaign
0.51
Churn

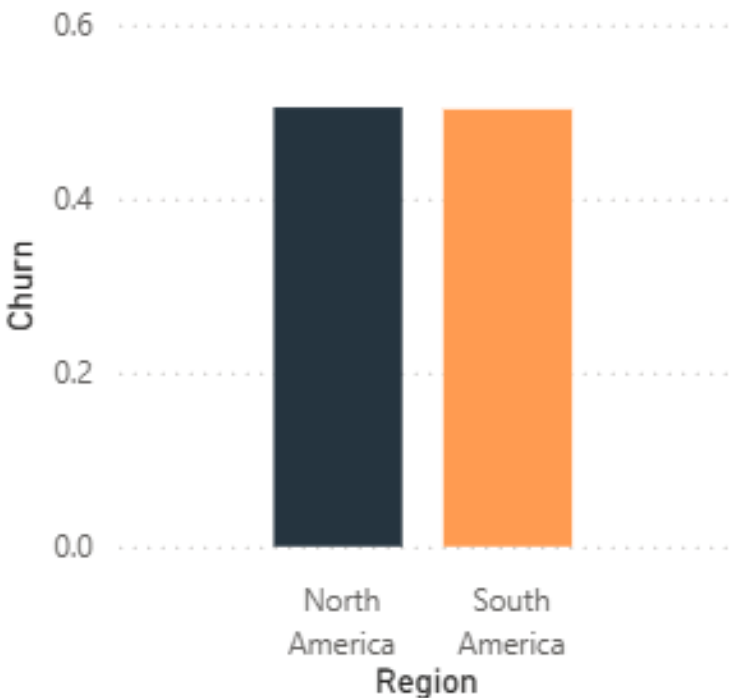## Churn - Loyalty
0.49
Churn

Churn by Rentention

Churn by Region
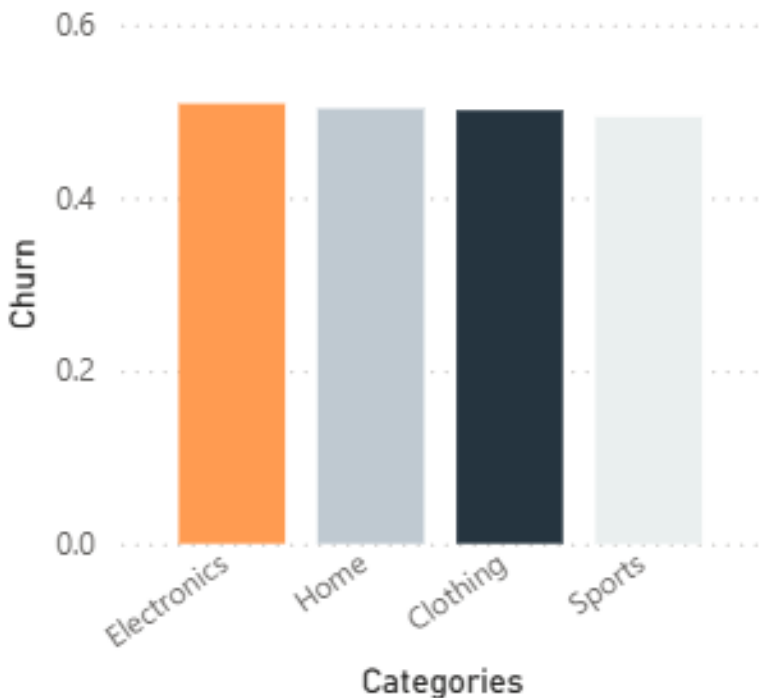
Churn by Categories

Region x Season Heatmap

Categories	Fall	Spring	Summer	Winter
Sports	50.8%	48.4%	47.8%	50.4%
Home	49.1%	51.0%	50.4%	50.6%
Electronics	48.6%	51.9%	51.2%	51.7%
Clothing	49.1%	49.9%	49.1%	52.2%

● High Churn   ● Low Churn

High-Risk Table

Region	Season	Categories	Retention_Strategy	Churn	Per Customer	Revenue	Customers	High Risk/ High Value
North America	Fall	Clothing	Discount	0.49	5,019.25	230,885.56	46	0
North America	Fall	Clothing	Email Campaign	0.47	4,820.88	245,865.02	51	0
North America	Fall	Clothing	Loyalty Program	0.49	5,335.58	261,443.48	49	0
North America	Fall	Electronics	Discount	0.58	5,589.39	229,164.89	41	1
North America	Fall	Electronics	Email Campaign	0.56	4,493.12	260,601.15	58	0
North America	Fall	Electronics	Loyalty Program	0.42	5,535.92	287,867.84	52	0

■ 1: True
■ 0: False

Growth Opportunities
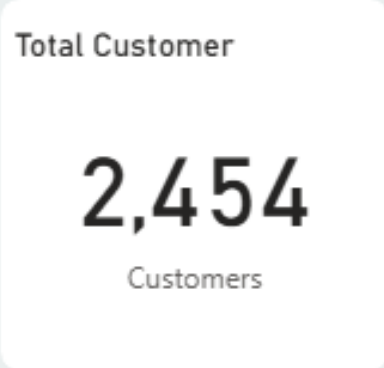
Region	Season	Categories	Retention Strategy
North America ⌄	All ⌄	All ⌄	All ⌄

Total Revenue

$12.5M
Revenue

Customer Value

$5,059
Per Customer

Churn Rate

50.5%
Churn

Total Customer

2,454
Customers

Acquisition Targets
High LTV / Low Customer Base

Region	Season	Categories	AvgLTV ▼	AvgChurn	Customer
South America	Spring	Electronics	5,340.26	0.52	147
South America	Spring	Sports	5,287.30	0.45	148
North America	Fall	Home	5,245.59	0.48	153

Retention Target
High LTV / High Churn

Region	Season	Categories	AvgChurn	AvgLTV ▼	Customer
North America	Spring	Clothing	0.53	5,414.53	159
South America	Spring	Electronics	0.52	5,340.26	147
North America	Fall	Electronics	0.52	5,149.89	151

High Risk Customers
By Retention Strategy

Churn, Customer Value and Retention Scatter
By Region and Categories

● Clothing ● Electronics ● Home ● Sports

Customer Value Uplift
By Retention Strategy
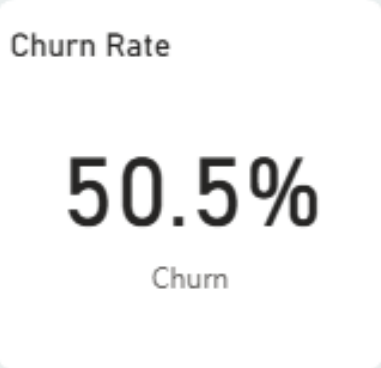
High-Level KPIs

Total Customer	Total Revenue	Per Customer Value	Per Order Value	Average Purchase Frequency	Churn Rate
10K	**$50.32M**	**$5.03K**	**$110.01**	**9.96**	**50.16%**
Customers	Revenue	Per Customer	Per Order	Frequency	Churn

Categories driving LTV & Revenue

Most_Frequent_Category	avg_purchase_frequency	avg_order_value	avg_lifetime_value	total_lifetime_value
Sports	9.89	110.86	5151.73	6182078.54
Home	9.81	110.34	5103.28	6404611.85
Clothing	9.94	110.48	5035.89	6254579.36
Electronics	10.05	110.13	4892.54	6282018.09

- **SPORT**

  Sports customers have the highest average Lifetime Value per person.

- **HOME**

  Home has the highest total Lifetime Value due to a large customer base.

- **CLOTHING**

  Clothing performs in the middle on both value and risk.

- **ELECTRONICS**

  Electronics contributes strong revenue but shows higher churn risk.

- **GENERAL**

  Customers spend roughly similar amounts per order across categories; differences come mostly from purchase frequency and retention.

Puchase Frequency vs Basket size

Most_Frequent_Category	segment_identify	total_customer	avg_frequency	avg_order_value	avg_lifetime_value
Clothing	highFreq / lowOrderValue	324	14.63	65.55	4999.84
Clothing	lowFreq / highOrderValue	296	4.64	152.66	4974.53
Electronics	highFreq / lowOrderValue	335	14.65	64.31	4788.46
Electronics	lowFreq / highOrderValue	289	4.99	155.83	4827.41
Home	highFreq / lowOrderValue	320	14.59	65.55	4871.64
Home	lowFreq / highOrderValue	315	5.03	154.48	4985.62
Sports	highFreq / lowOrderValue	315	14.61	65.97	5231.53
Sports	lowFreq / highOrderValue	294	5.07	157.63	5293.36

- **HIGH FREQUENCY / LOW ORDER VALUE**

  Buy often but with small baskets

- **LOW FREQUENCY / HIGH ORDER VALUE**

  Buy rarely but with large baskets and still generate strong Lifetime Value

- **IMPLICATION**

  Design separate playbooks for "small but frequent" and "rare but big" customers in each category

Seasonality

Season	total_customer	avg_lifetime_value	total_lifetime_value	avg_order_value	avg_purchase_frequency
Winter	1277	4962.6	6337236.81	109.45	10.00
Spring	1188	5140.39	6106785	109.77	9.93
Summer	1271	5105.63	6489253.99	109.28	9.93
Fall	1245	4971.9	6190012.04	113.3	9.83

- **SUMMER**
  Peak season for Revenue.

- **SPRING**
  with Summer are the most valuable per customer.

- **FALL**
  Spend slightly more per order but show the lowest total Lifetime value, indicating higher churn risk.

- **WINTER**
  Slightly below average in both value and revenue

Timing

Region	Preferred_Purchase_Times	total_lifetime_value
South America	Afternoon	4362684.94
North America	Evening	4491812.45
North America	Morning	3939097.73
South America	Evening	4273359.35
North America	Afternoon	4019655.63
South America	Morning	4036677.74

- **SOUTH**
  Clothing & Home peak in evening
  Electronics & Sports peak in afternoon

- **NORTH**
  Evening Purchases generate the highest Revenue.
  while morning is weakest

Regional View

Value by Season	Churn Rate
$5.03K	**50.16%**
Per Customer	Churn

Per Customer Value
By Region and Season

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🟠 Best ⚪ Grow but fix churn ⚪ Fix first

Invest More In

Spring – South America
Best Season Region

Fix First
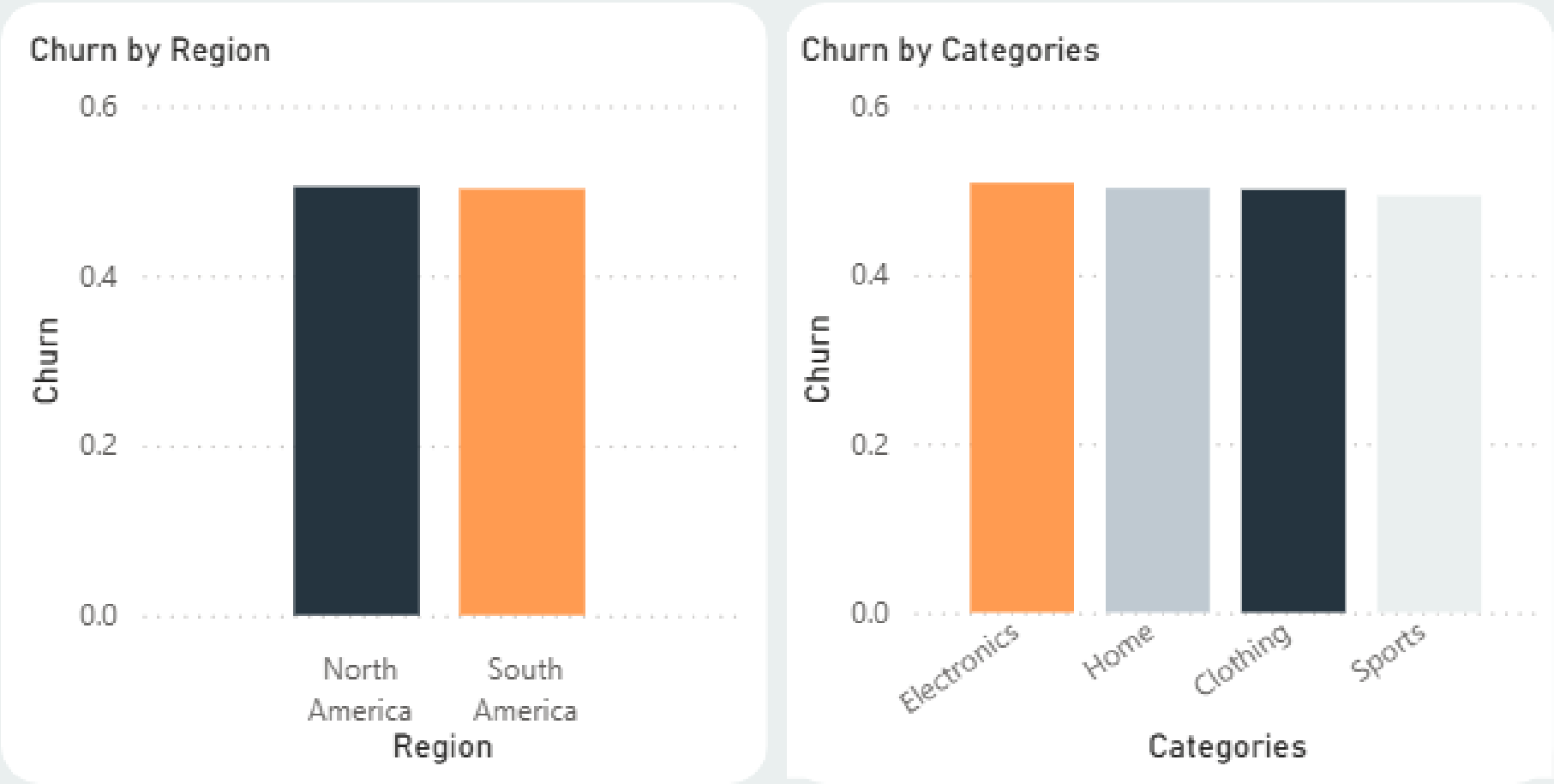
Fall – South America
Worst Season Region
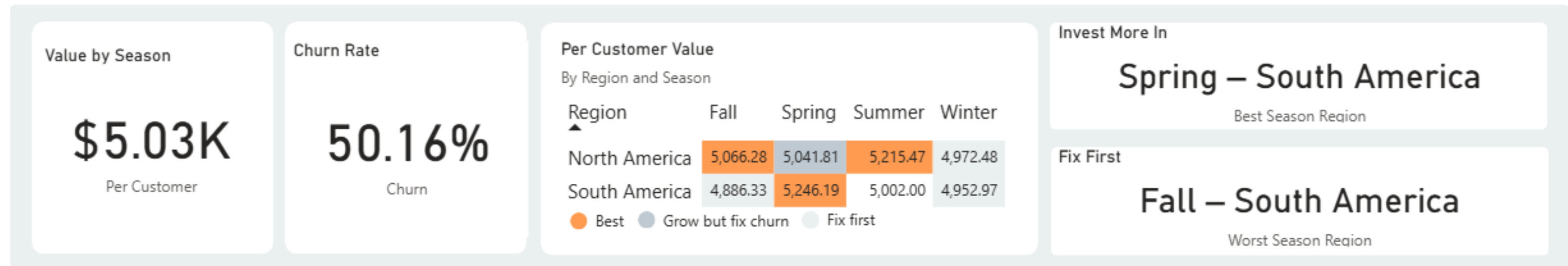
North America has higher average Lifetime Value per customer.

Average churn rate is similar across both regions at around 0.50.

Strategic focus for North America: acquire more customers because each additional customer is already high value.

Strategic focus for South America: retention and upsell to increase value from a large existing base.

Churn by Category, Season and Region

Churn by Region

Churn by Categories

Region x Season Heatmap

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● High Churn   ● Low Churn

- **By region,** North and South America have very similar churn, around 0.50, so region alone is not the main driver.

- **By category,** Electronics has the highest churn, while Sports is the lowest; Home and Clothing are close to the average.

  - The **Region × Season heatmap** shows that Sports and Electronics in Fall and Winter cross 50% churn and are flagged as high-risk cells.

  - The **High-Risk Table** highlights specific North America Fall Clothing and Electronics segments where churn is high but per-customer value and revenue are still strong, making them priority targets for retention.

Growth & Optimization

- **Acquisition targets**: segments with high Lifetime Value but low customer counts.

- **Spring South America:** Electronics, Sports, and Clothing show high value per customer with relatively small bases.

- **North America Spring Sports** also combines high value per customer with a smaller base.

- **Retention targets:** segments with high Lifetime Value and high churn.

- Several Region x Season x Category pairs generate decent revenue despite high churn, indicating optimization opportunities.

Acquisition Targets
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Segment Strategy Playbook

- **HIGH-FREQUENCY, LOW-ORDER-VALUE CUSTOMER**
  Promote bundles, add-ons, and volume discounts to grow basket size.

- **LOW-FREQUENCY, HIGH-ORDER-VALUE CUSTOMER**
  focus on retention, reactivation, and VIP-style offers, because each extra purchase adds large Lifetime Value.

- **RETENTION PROGRAM**
  Make Loyalty Program the core retention mechanism across regions.
  Use Email Campaigns and Discounts primarily to feed customers into Loyalty, not as the only long-term strategy.

- **TACTIC BY CATEGORY**
  More protection for high-risk Electronics, reinforcement for high-value Sports and Home

Seasonal & Regional Action Plan

- Invest more in **Spring South America**, where customers show strong value and healthy frequency.

- Use Spring South America as a benchmark playbook for offers and campaigns.

- Apply the same playbook to weaker seasons to lift customer value and revenue.

- Fix **Fall South America first**, as it is flagged as a high-risk season before scaling campaigns there.

- In North America, scale acquisition in high-LTV but low-size segments such as Spring Sports

Conclusion

- Identified which **categories, regions, and seasons** drive the most revenue and Lifetime Value.

- Mapped **purchase behavior** patterns (frequency, basket size, timing) across key customer segments.

- Highlighted how **churn and retention** vary by region, category, season, and strategy.

- Found clear **growth and optimization** opportunities in high-LTV/low-size and high-LTV/high-churn segments.

Thanks For Your Time and Consideration

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