customer Analytics

Monetary
Recency
Frequency
Walmart
RFM CUSTOMER ANALYTICS
$29.36M
Total Sales by Age Brand
Total Sales by Gender and Status
Top 5 Countries by Total Sales & Customers
Total Sales by Product Name

Project Overview

01

WALMART

Services

Retail
E-commerce
Financial

Company Profile

Walmart Inc. is a multinational retail giant headquartered in Bentonville, Arkansas, operating 10,586 stores across 24 countries.

Founded in 1962 by Sam and Bud Walton, it is the world's largest company by revenue and private employer. Walmart leads in retail innovation, but global expansions have seen mixed success in various markets.

The Team
Swagata Murmu

My Role
Data Analyst

Tools Used
Power BI, Figma

Timeline
3 week, Jan 3 - Jan 25, 2025

Problem Analysis

02

BUSINESS ISSUES

DECLINING CUSTOMER RETENTION

Despite a strong market presence, repeat purchase rates fluctuate, indicating potential gaps in customer satisfaction, pricing strategies, or product availability.

REGIONAL AND CATEGORY TRENDS

Performance varies across stores locations and product categories. Identifying underperforming regions/products is key for inventory optimization and targeted marketing.

TASK

ANALYZE

customer retention trends using RFM segmentation to identify churned, at-risk, and loyal customers.

EVALUATE

the impact of pricing, product availability, and customer satisfaction on repeat purchase behavior.

RECOMMEND

data-driven strategies to improve customer retention, enhance loyalty programs, and optimize marketing efforts for different customer segments.

ASSESS

regional and category-specific performance to determine high and low-performing areas for targeted marketing and inventory optimization.

Process Solution

03

SOLUTION APPROACH

01 COMPREHENSIVE DATA ANALYSIS

Analyzed 18,000+ customer records, including demographics (age group, gender, marital status).

Assessed customer retention rates and identified churn risk factors.

Segmented customers using RFM scores to develop targeted engagement strategies.

Interpreted Walmart's RFM analysis to uncover key behavioral trends.

02 TREND & CORRELATION INSIGHTS

Identified top-performing countries and best-selling products by age group.

Analyzed long-term customer segment trends.

03 DEVELOPMENT & VISUALIZATION

Designed an interactive dashboard displaying key performance indicators.

Provided insights on regional sales trends, marketing campaign effectiveness, and pricing impact.

Created an intuitive segmentation breakdown for clear stakeholder understanding.

04 STRATEGIC BUSINESS ACTIONS

Implemented personalized promotions, incentives, and automated retention strategies for at-risk customers.

Optimized marketing campaigns by evaluating purchase behavior and price sensitivity.

Identified high-value customer segments for better engagement and conversion.

RESULT

REGIONAL TARGETING STRATEGY

Identify high-risk areas and attract potential customers through tailored marketing efforts.

GROWTH OPPORTUNITIES

Strengthen engagement with Champion and Loyal customers through premium services and personalized experiences.

INVENTORY & AVAILABILITY

Optimize stock in high-demand areas while addressing low-performing regions with competitive pricing and product adjustments.

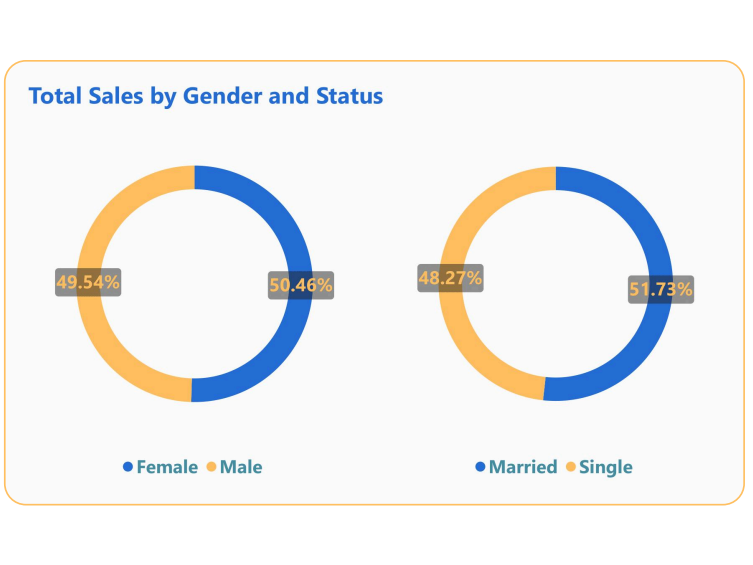
Primary Questions

04

KEY TECHNICAL QUESTIONS

Which gender and marital status combination generates the highest revenue?

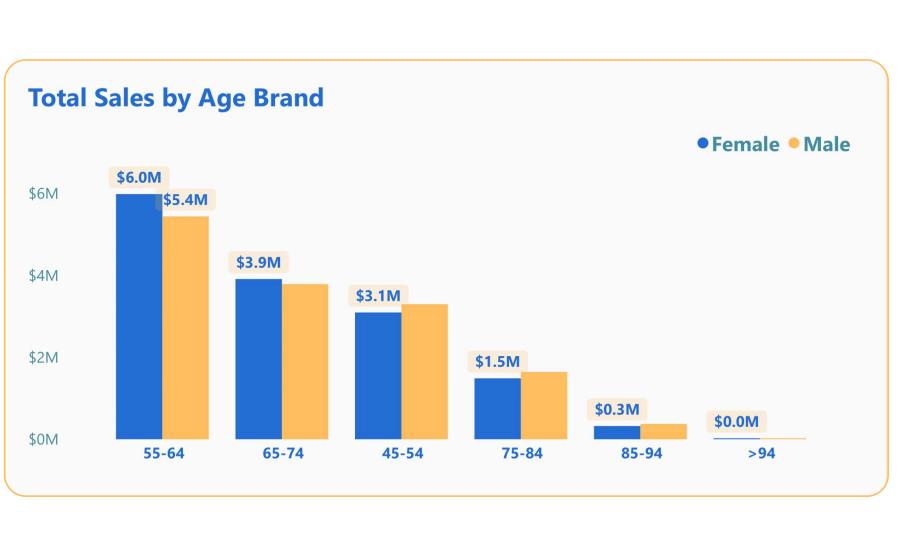
Question 1



- The male customers slightly outperform female customers by 0.92% in total sales.
- Single Customers (51.73%) contribute more than Married Customers (48.27%) by 3.46% in total sales.

Which age group contributes the most to total sales?

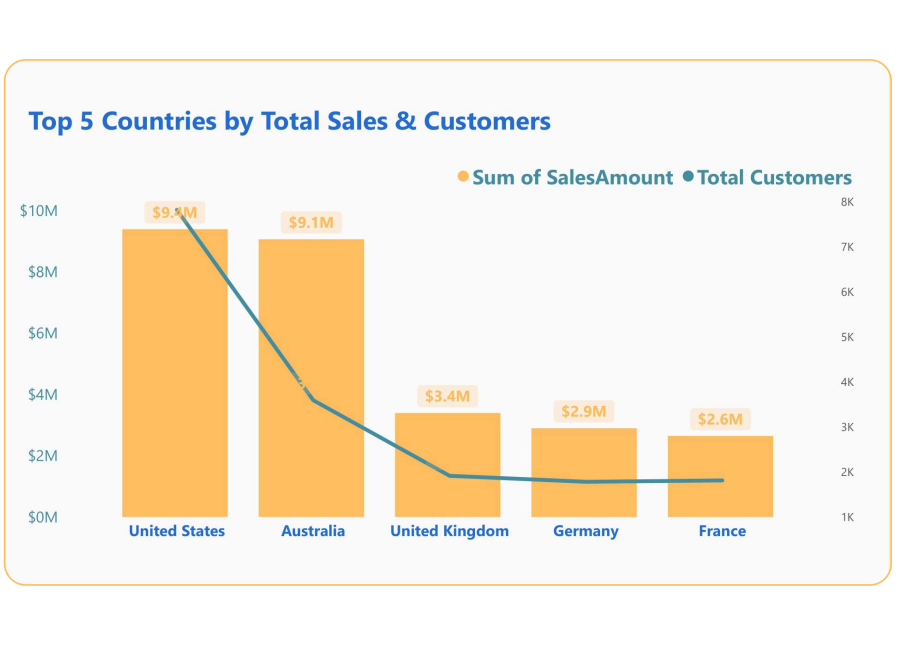
Question 2



- Age Group 55–64 Drives the Highest Sales
  - Female: $6.0M | Male: $5.4M
  - Shows strong purchasing power and high engagement from older middle-aged buyers.
- Consistent Sales from Age 45–74
  - Sales Range: $3.1M–$3.9M from both genders.
  - Reflects a stable, loyal customer base among older adults.

Identify the top 5 countries that generate the highest total sales.

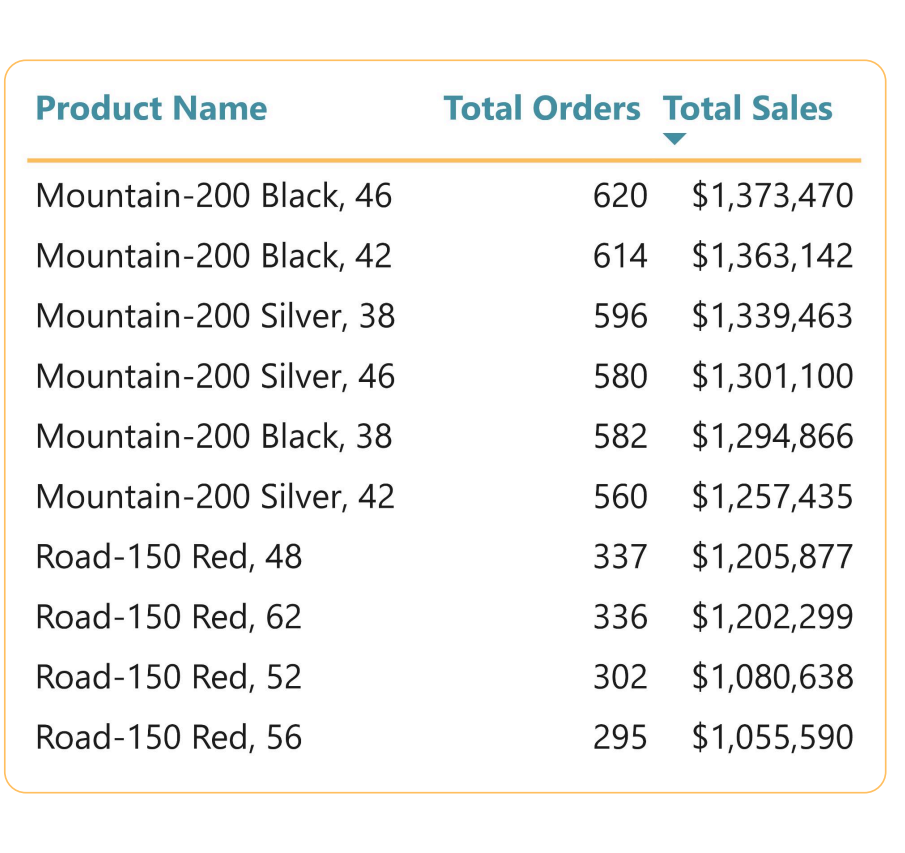
Question 3



- United States leads significantly by total sales of $9.8M.
  - Indicates strong brand presence and customer engagement in the U.S.
- France has the least total sales of $2.6M.
  - Could benefit from marketing expansion or customer retention efforts.

Which top 10 products generate the highest total sales?

Question 4

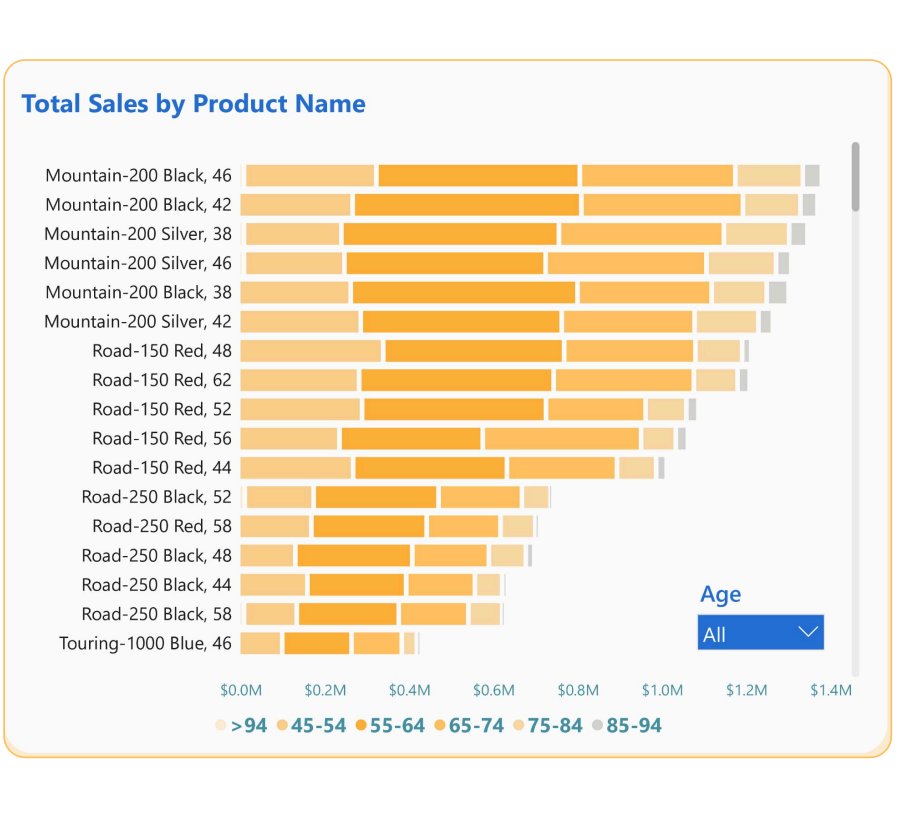


Product Name	Total Orders	Total Sales
Mountain-200 Black, 46	620	$1,373,470
Mountain-200 Black, 42	614	$1,363,142
Mountain-200 Silver, 38	596	$1,339,463
Mountain-200 Silver, 46	580	$1,301,100
Mountain-200 Black, 38	582	$1,294,866
Mountain-200 Silver, 42	560	$1,257,435
Road-150 Red, 48	337	$1,205,877
Road-150 Red, 62	336	$1,202,299
Road-150 Red, 52	302	$1,080,638
Road-150 Red, 56	295	$1,055,590

- Mountain-200 series dominates the top 6 spots → High-value & high-demand segment.
- Black & Silver colors are most preferred.
- Road series starts gaining traction after 6th rank, particularly for older customers (ages 48–62)
- Even with fewer orders, Road bikes show high value per order, signalling premium interest.

Which age group purchases the highest-selling products most frequently?

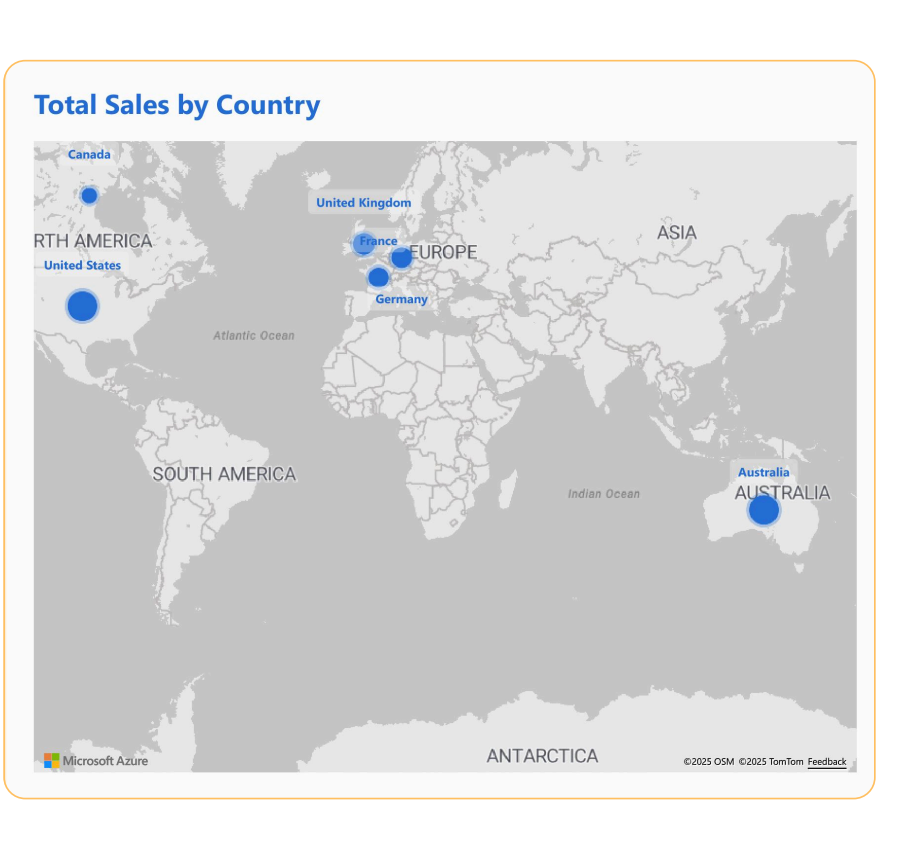
Question 5



- Mountain-200 Black, Age 46
  - Top-selling product overall by $1.37M.
  - Highest performance across all age groups.

Are there regional patterns in sales distribution across different countries?

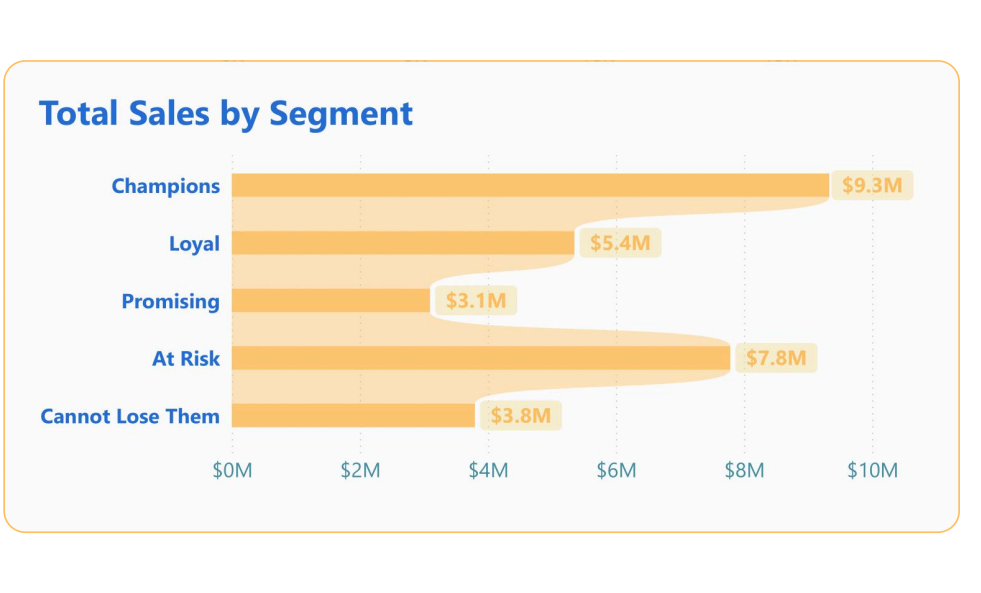
Question 6



- North America (U.S.) and Oceania (Australia) are Walmart's top-performing regions.
- Europe (UK, Germany, France) has potential for strategic growth with the right product mix and promotions.

Which customer segments contribute the most to total revenue?

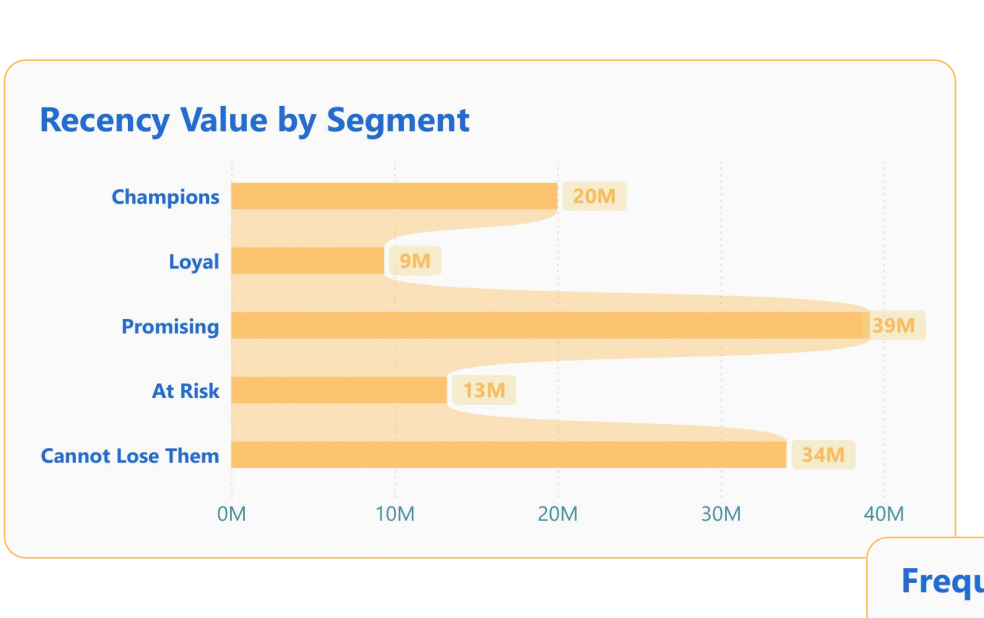
Question 7



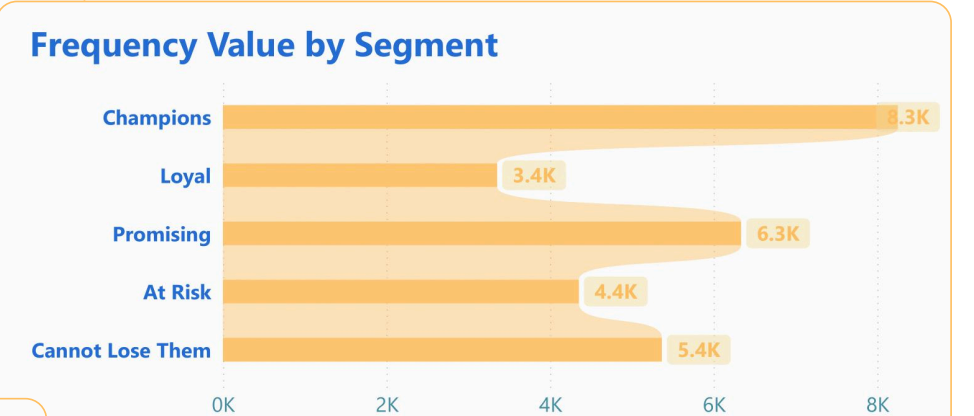
- Champions
  - Highest contributor with $9.3M in total sales.
  - These are the best customers — frequent, recent buyers with high spending.

How are customers distributed across different RFM segments?

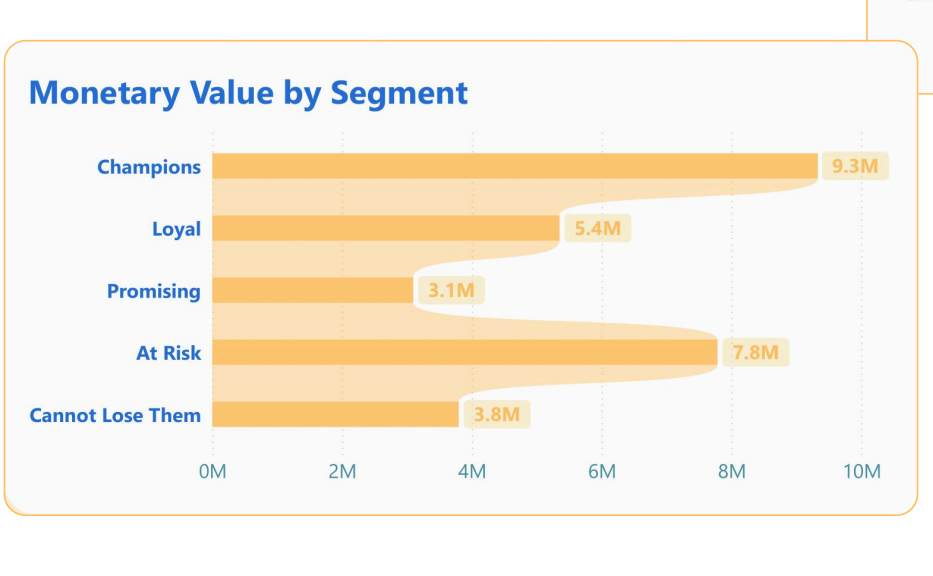
Question 8



- Promising segment leads with 39M in recency value.
  - "Promising" and "Cannot Lose Them" segments have the most recent purchase interactions..



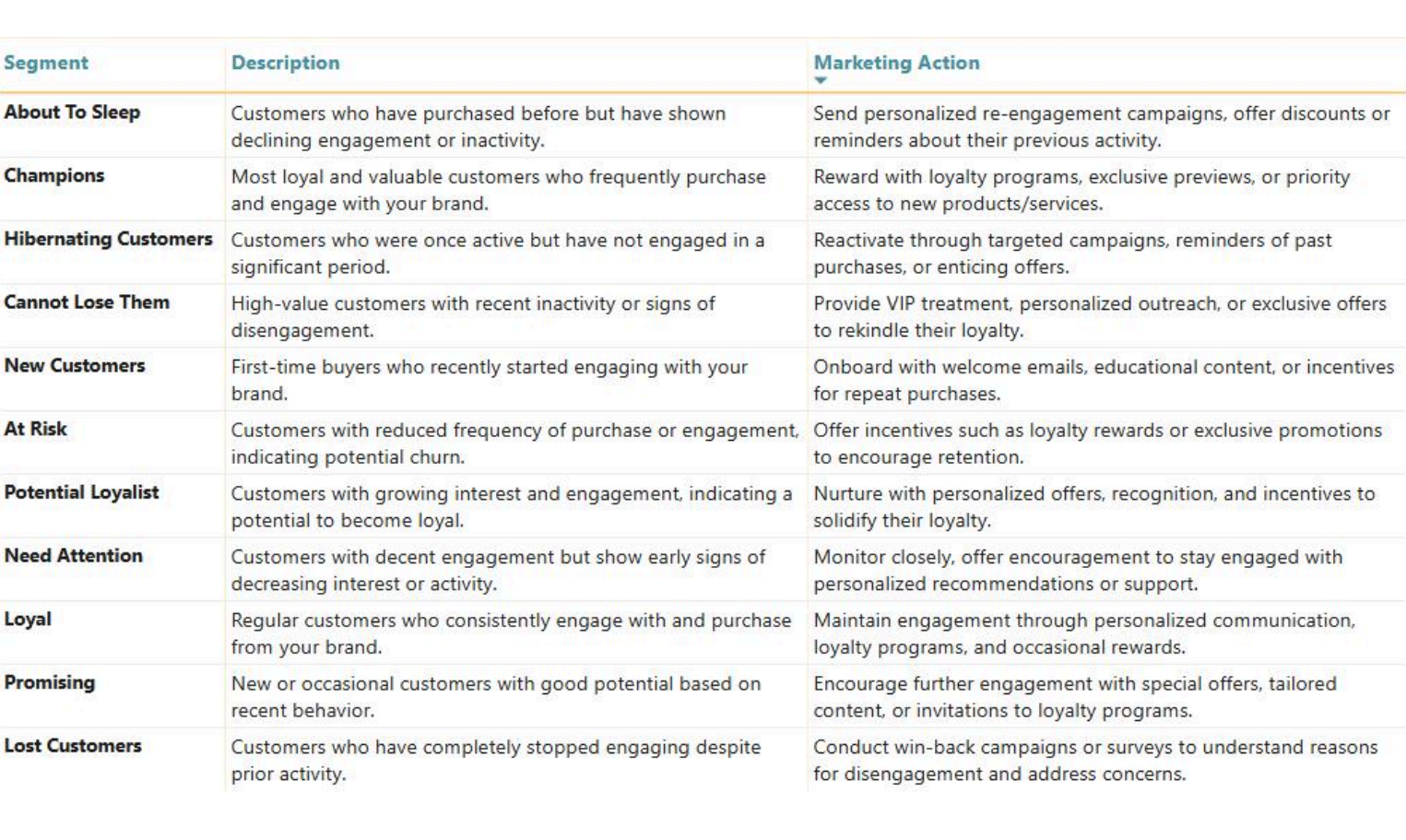
- Champions are the most frequent buyers with 8K+ frequency value.
  - "Loyal" and "Cannot Lose Them" segments also show high potential for continuous engagement.



- Champions again dominate with $9.3M.
  - "At Risk" spent heavily in the past — recovering them would significantly impact revenue.

Which segments are performing well, and which need immediate attention?

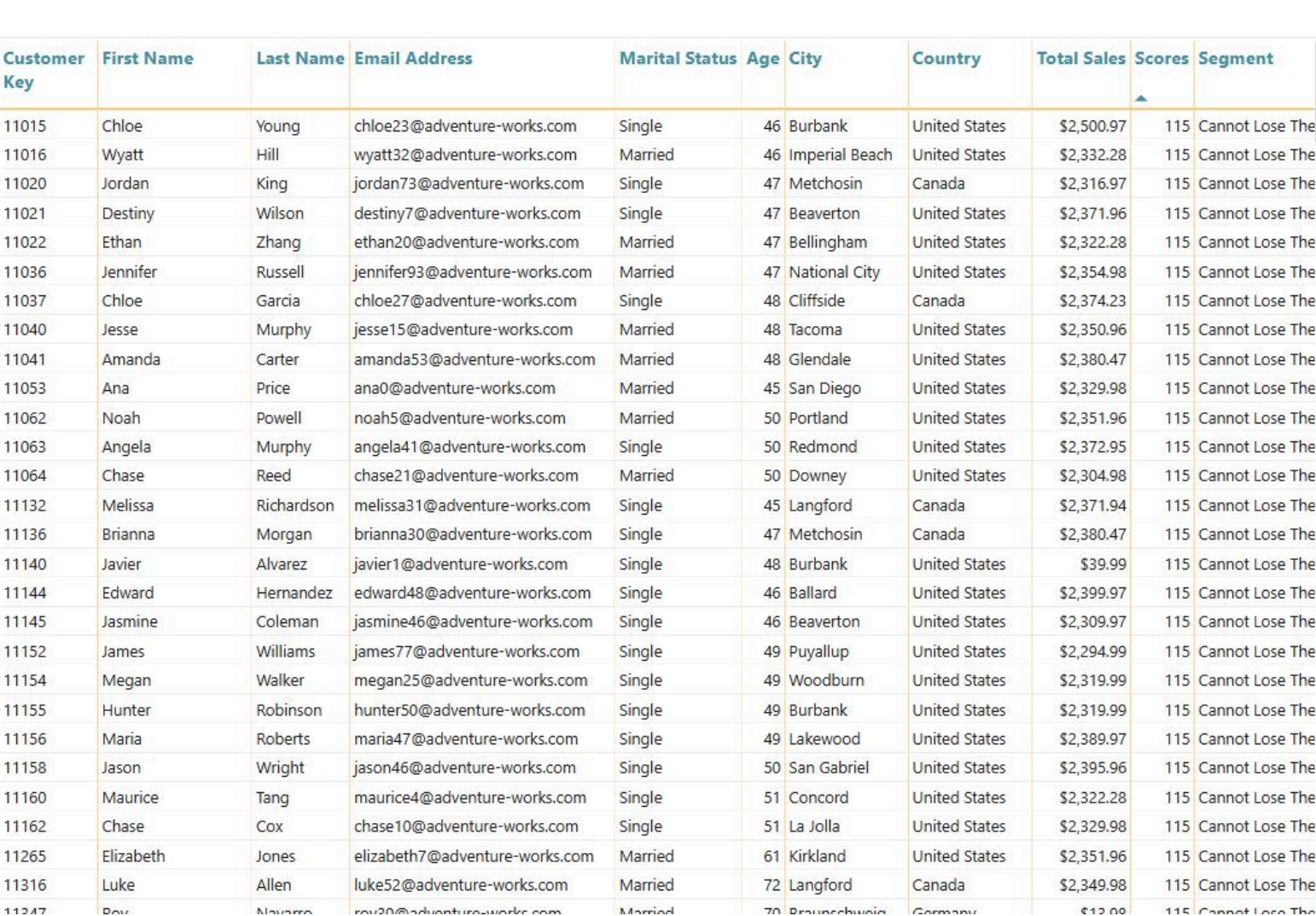
Question 9



Segment	Description	Marketing Action
About To Sleep	Customers who have purchased before but have shown declining engagement or inactivity.	Send personalized re-engagement campaigns, offer discounts or reminders about their previous activity.
Champions	Most loyal and valuable customers who frequently purchase and engage with your brand.	Reward with loyalty programs, exclusive previews, or priority access to new products/services.
Hibernating Customers	Customers who were once active but have not engaged in a significant period.	Reactivate through targeted campaigns, reminders of past purchases, or enticing offers.
Cannot Lose Them	High-value customers with recent inactivity or signs of disengagement.	Provide VIP treatment, personalized outreach, or exclusive offers to rekindle their loyalty.
New Customers	First-time buyers who recently started engaging with your brand.	Onboard with welcome emails, educational content, or incentives for repeat purchases.
At Risk	Customers with reduced frequency of purchase or engagement, indicating potential churn.	Offer incentives such as loyalty rewards or exclusive promotions to encourage retention.
Potential Loyalist	Customers with growing interest and engagement, indicating a potential to become loyal.	Nurture with personalized offers, recognition, and incentives to solidify their loyalty.
Need Attention	Customers with decent engagement but show early signs of decreasing interest or activity.	Monitor closely, offer encouragement to stay engaged with personalized recommendations or support.
Loyal	Regular customers who consistently engage with and purchase from your brand.	Maintain engagement through personalized communication, loyalty programs, and occasional rewards.
Promising	New or occasional customers with good potential based on recent behavior.	Encourage further engagement with special offers, tailored content, or invitations to loyalty programs.
Lost Customers	Customers who have completely stopped engaging despite prior activity.	Conduct win-back campaigns or surveys to understand reasons for disengagement and address concerns.

Structure the customer details in a table with RFM scores and their corresponding segment categories effectively.

Question 10



Customer Key	First Name	Last Name	Email Address	Marital Status	Age	City	Country	Total Sales	Scores	Segment
11015	Chloe	Young	chloe23@adventure-works.com	Single	46	Burbank	United States	$2,500.97	115	Cannot Lose The
11016	Wyatt	Hill	wyatt32@adventure-works.com	Married	46	Imperial Beach	United States	$2,332.28	115	Cannot Lose The
11020	Jordan	King	jordan73@adventure-works.com	Single	47	Metchosin	Canada	$2,316.97	115	Cannot Lose The
11021	Destiny	Wilson	destiny7@adventure-works.com	Single	47	Beaverton	United States	$2,371.96	115	Cannot Lose The
11022	Ethan	Zhang	ethan20@adventure-works.com	Married	47	Bellingham	United States	$2,322.28	115	Cannot Lose The
11036	Jennifer	Russell	jennifer93@adventure-works.com	Married	47	National City	United States	$2,354.98	115	Cannot Lose The
11037	Chloe	Garcia	chloe27@adventure-works.com	Single	48	Cliffside	Canada	$2,374.23	115	Cannot Lose The
11040	Jesse	Murphy	jesse15@adventure-works.com	Married	48	Tacoma	United States	$2,350.96	115	Cannot Lose The
11041	Amanda	Carter	amanda53@adventure-works.com	Married	48	Glendale	United States	$2,380.47	115	Cannot Lose The
11053	Ana	Price	ana0@adventure-works.com	Married	45	San Diego	United States	$2,329.98	115	Cannot Lose The
11062	Noah	Powell	noah5@adventure-works.com	Married	50	Portland	United States	$2,351.96	115	Cannot Lose The
11063	Angela	Murphy	angela41@adventure-works.com	Single	50	Redmond	United States	$2,372.95	115	Cannot Lose The
11064	Chase	Reed	chase21@adventure-works.com	Married	50	Downey	United States	$2,304.98	115	Cannot Lose The
11132	Melissa	Richardson	melissa31@adventure-works.com	Single	45	Langford	Canada	$2,371.94	115	Cannot Lose The
11136	Brianna	Morgan	brianna30@adventure-works.com	Single	47	Metchosin	Canada	$2,380.47	115	Cannot Lose The
11140	Javier	Alvarez	javier1@adventure-works.com	Single	48	Burbank	United States	$39.99	115	Cannot Lose The
11144	Edward	Hernandez	edward48@adventure-works.com	Single	46	Ballard	United States	$2,399.97	115	Cannot Lose The
11145	Jasmine	Coleman	jasmine46@adventure-works.com	Single	46	Beaverton	United States	$2,309.97	115	Cannot Lose The
11152	James	Williams	james77@adventure-works.com	Single	49	Puyallup	United States	$2,294.99	115	Cannot Lose The
11154	Megan	Walker	megan25@adventure-works.com	Single	49	Woodburn	United States	$2,319.99	115	Cannot Lose The
11155	Hunter	Robinson	hunter50@adventure-works.com	Single	49	Burbank	United States	$2,319.99	115	Cannot Lose The
11156	Maria	Roberts	maria47@adventure-works.com	Single	49	Lakewood	United States	$2,389.97	115	Cannot Lose The
11158	Jason	Wright	jason46@adventure-works.com	Single	50	San Gabriel	United States	$2,395.96	115	Cannot Lose The
11160	Maurice	Tang	maurice4@adventure-works.com	Single	51	Concord	United States	$2,322.28	115	Cannot Lose The
11162	Chase	Cox	chase10@adventure-works.com	Single	51	La Jolla	United States	$2,329.98	115	Cannot Lose The
11265	Elizabeth	Jones	elizabeth7@adventure-works.com	Married	61	Kirkland	United States	$2,351.96	115	Cannot Lose The
11316	Luke	Allen	luke52@adventure-works.com	Married	72	Langford	Canada	$2,349.98	115	Cannot Lose The

Secondary Questions

05

KEY BUSINESS QUESTIONS

MARKET & BUSINESS CONTEXT

Question 1 **Are fluctuations in repeat purchases seasonal, or do they correlate with specific pricing or promotional strategies?**

- If fluctuations spike during promotions, it indicates price-sensitive customers who buy when discounts are available.
- If fluctuations occur outside seasonal trends, pricing inconsistencies or competitor actions may be influencing customer choices.
- Promotional strategies should focus on 'At-Risk' and 'Cannot Lose' segments by offering personalized discounts, membership benefits, and loyalty programs to sustain their engagement.

Question 2 **What factors influence customer retention among high-value customers?**

- Personalized Offers & Rewards – Exclusive discounts, loyalty points, and early access to deals.
- Product Availability – Ensuring stock consistency to prevent customer churn.
- Competitive Pricing – Maintaining attractive pricing and bundle deals to retain price-sensitive buyers.
- Customer Service & Experience – Fast issue resolution and seamless return policies.
- Omnichannel Convenience – Integrated online and offline shopping experience (e.g., BOPIS).
- Brand Trust & Emotional Connection – Sustainability efforts and community engagement build long-term loyalty.
- Targeted Communication – Regular engagement through personalized promotions and recommendations.

Question 3 **How does customer lifetime value (CLV) vary across different RFM segments?**

- Champions – Highest CLV due to frequent purchases, high spending, and recent transactions.
- Loyal Customers – Strong CLV, consistently purchasing over time but may require engagement to sustain loyalty.
- Promising Customers – Moderate CLV, showing potential for growth with proper nurturing.
- At-Risk Customers – Declining CLV; retention strategies needed to prevent churn.
- Cannot Lose Them – Previously high CLV, now at risk; requires re-engagement through targeted incentives.

Question 4 **Which customer segments contribute most to repeat purchases, and which are at risk of churning?**

HIGH REPEAT PURCHASE SEGMENTS:

Champions (20M customers, 8.3K frequency, $9.3M monetary value)
- These customers purchase frequently and contribute the most revenue.
- Retaining them requires personalized offers and loyalty rewards.

Loyal Customers (9M customers, 3.4K frequency, $5.4M monetary value)
- They make consistent purchases but at a lower frequency than Champions.
- Engaging them with exclusive deals can strengthen loyalty.

AT-RISK OF CHURNING:

At-Risk Customers (13M customers, 4.4K frequency, $7.8M monetary value)
- Moderate purchase frequency but declining engagement.
- Targeted retention campaigns, re-engagement emails, and discounts are needed.

Cannot Lose Them (38M customers, 5.4K frequency, $3.8M monetary value)
- High-value customers showing signs of disengagement.
- Immediate action with win-back strategies (personalized offers, reminders) is crucial.

Promising Customers (39M customers, 6.3K frequency, $3.1M monetary value)
- They have potential but need nurturing.
- Offering incentives to drive repeat purchases can convert them into Loyal or Champion customers.

Question 5 **What is the correlation between customer support interactions and retention rates?**

POSITIVE IMPACT ON RETENTION

- Customers who receive quick and effective support are more likely to stay loyal.
- Personalized resolutions improve customer satisfaction and repeat purchases.

DATA-DRIVEN INSIGHTS

- Customers with higher support interactions but positive resolutions tend to have higher retention rates.
- High-value customers expect priority support, impacting long-term loyalty.

NEGATIVE IMPACT ON RETENTION

- Long response times or unresolved issues lead to frustration and higher churn.
- Poor support experiences discourage future purchases.

STRATEGIC ACTIONS

- Implement proactive support for high-value customers.
- Use AI-driven chatbots & self-service options to improve response times.

Question 6 **How does product demand vary across different regions and customer demographics?**

REGIONAL DEMAND TRENDS

- Certain products sell better in specific regions due to cultural preferences, climate, and local purchasing power.
- High-demand vs. low-demand regions help optimize inventory allocation and supply chain efficiency.

DEMOGRAPHIC – BASED TRENDS

- Age groups & gender preferences influence product choices (e.g., younger customers may prefer tech gadgets, while older demographics focus on essentials).
- Marital status & household size impact demand for bulk purchases and family-oriented products.

STRATEGIC ACTIONS

- Localized marketing & pricing strategies based on demand patterns.
- Targeted promotions for customer segments with high lifetime value.
- Stock optimization to prevent overstocking in low-demand areas.

PURCHASE BEHAVIOR INSIGHTS

- Loyalty segments (Champions, Promising, At-Risk, etc.) influence repeat demand patterns.
- Income levels & spending capacity play a role in product category preferences.

Key Findings

06

INTERESTING INSIGHTS I FOUND

- ✓ Walmart has a solid base of Champions & Loyal Customers (~29M), meaning strong retention and engagement.
- ✓ Significant customer attrition risk: 51M customers (At-Risk + Cannot Lose Them) are at risk of churn and should invest in win-back campaigns (personalized discounts, targeted ads, reminders).
- ✓ A massive pool of Promising Customers (39M) offers high growth potential and Convert them into Loyal or Champions by offering rewards, deals, or memberships.
- ✓ Low-Price Strategy: About 90% of Americans live within 10 miles of a Walmart, benefiting from its aggressive low-price model.
- ✓ Monetary value of At-Risk customers ($7.8M) is high, meaning revenue loss if they leave.
- ✓ Strong E-commerce Presence: Competes with Amazon, with Walmart+ offering benefits similar to Prime.

DASHBOARD DEVELOPMENT

Walmart
RFM CUSTOMER ANALYTICS
$29.36M
18K
86.52%
Total Sales by Age Brand
Total Sales by Gender and Status
Top 5 Countries by Total Sales & Customers
Total Sales by Country
Total Sales by Product Name

REGIONAL TARGETING STRATEGY

01 Regions with high At-Risk and Cannot Lose Them customers:
- Re-engagement campaigns & personalized discounts needed.
- Improve customer service & stock availability.
- Conduct churn analysis to understand why they left.

02 Regions with high Promising Customers:
- Targeted marketing campaigns to increase spending.
- Cross-sell complementary products to increase basket size.

03 Strong Performing Regions (Champions & Loyal):
- Continue rewarding them with personalized benefits.
- Expand premium services (Walmart+ perks, premium delivery).

FINAL RECOMMENDATION

Walmart has a strong customer base, but 51M customers are at risk of leaving, which could lead to revenue loss. The company must focus on implement data-driven marketing, loyalty rewards, and re-engagement campaigns to maximize revenue and customer lifetime value (CLV). Along with regional strategies to keep customers engaged while growing its most promising segments.