Exploring Potentoial Product Categories for New Sellers

Dec 2024

BUSINESS APPROACH

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DEFINE PROBLEM
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1.2. Market landscapes

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STRUCTURE PROBLEM
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2.2. Deep-dive into product categories' performance
  2.2.1. Market demand
  2.2.2. Sales performance
  2.2.3. Customer experience

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SUMMARY & MOVING FORWARD

01

Define problem

1.1. Business challenges

Business challenges

The e-commerce market offers a vast array of product categories, each with unique competitive dynamics that are crucial to product performance. Hence, it is rather challenging for a new seller to identify niche or high-potential product categories.

How are the potential product categories?

➢ Is it Market demand related?

➢ Is it Sales contribution related?

➢ Is it Customer experience related?

A potential product category is identified as a combination of high market demand, strong sales performance, and stable growth to drive seller' success

1

High customer demands
Brings efficient stock management and quick inventory turnover

2

Great sales contribution
Strengthen competitive position
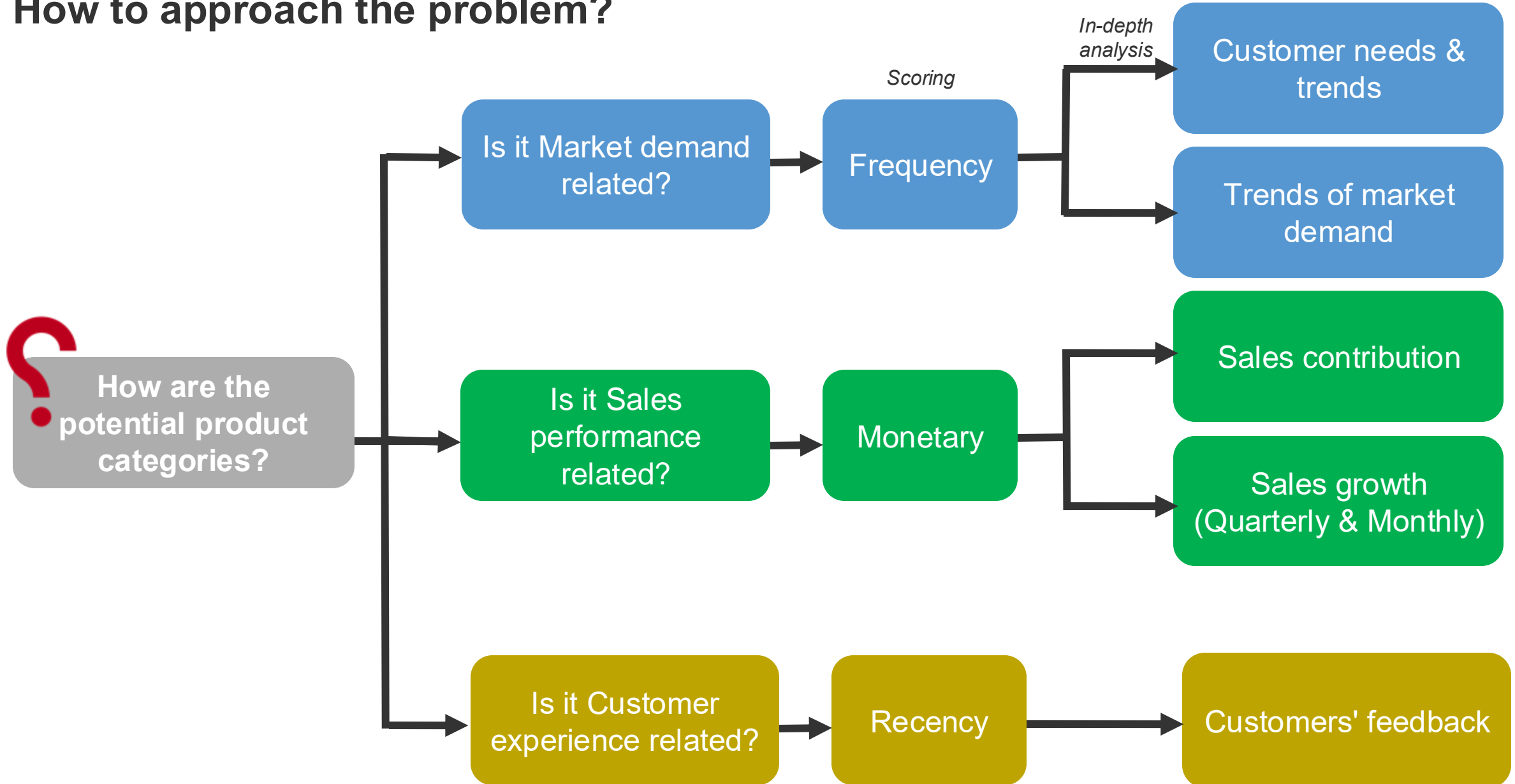
3

Stable growth in sales and market demands
Ensures the business' health and long-term planning

4

Good customer experience
Enhancing customer retention and loyalty

How to approach the problem?

How are the potential product categories?

Is it Market demand related? → Frequency → *Scoring* → *In-depth analysis* → Customer needs & trends

Frequency → Trends of market demand

Is it Sales performance related? → Monetary → Sales contribution

Monetary → Sales growth (Quarterly & Monthly)

Is it Customer experience related? → Recency → Customers' feedback

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The dataset

- **Data source:** https://www.kaggle.com/datasets/olistbr/brazilian-ecommerce
- Consist of 112,650 observations with 6 categorical attributes and 6 numerical attributes.

Categorical attributes

	NullCount	NullRate
order_id	0	0.0
product_id	0	0.0
seller_id	0	0.0
customer_id	0	0.0
order_status	0	0.0
product_category	0	0.0

Numerical attributes

	NullCount	NullRate
order_delivered_customer_date	2454	2.178429
order_approved_at	15	0.013316
order_item_id	0	0.000000
price	0	0.000000
freight_value	0	0.000000
order_purchase_timestamp	0	0.000000

1.2. Market landscapes

Positive growth of E-commerce market in Brazil throughout the year

Revenue (Billions of R$)

185.7
+9.49%

Source: ABComm

Number of Online Shoppers (Millions)

Number of Orders (Millions)
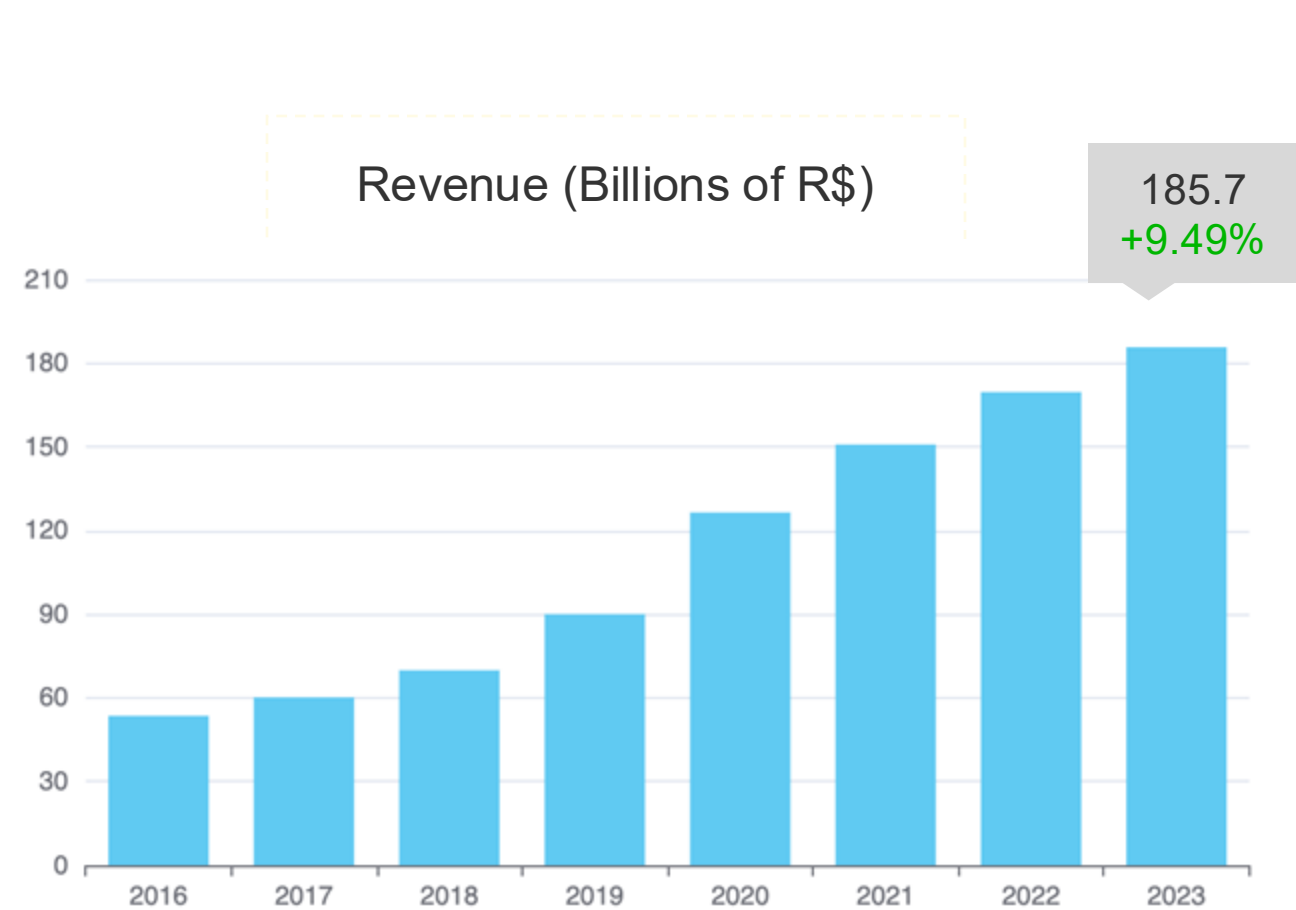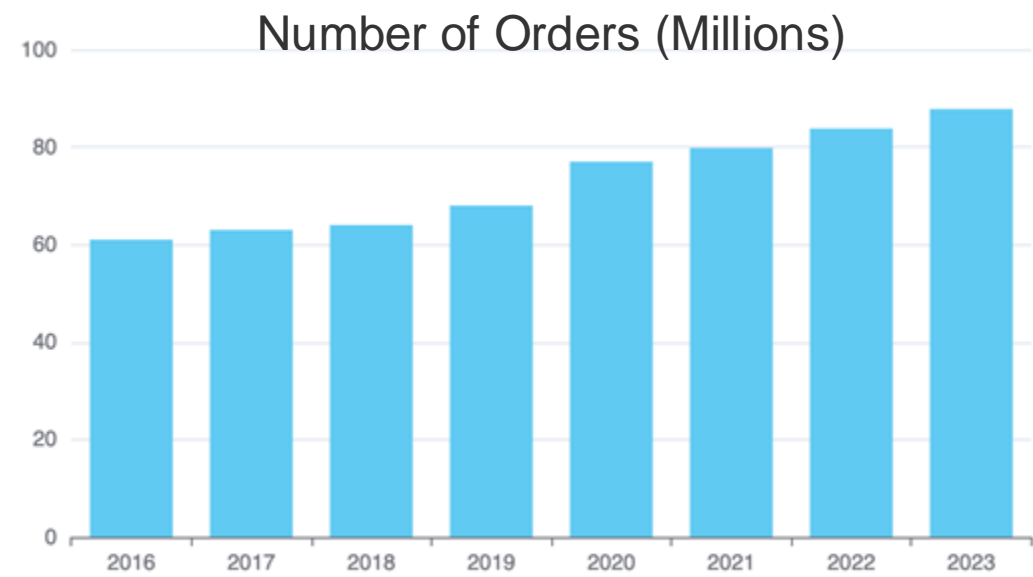
Source: ABComm

The e-commerce is projected to keep raising for the next 5 years

Revenue (Billions of R$)

R$299
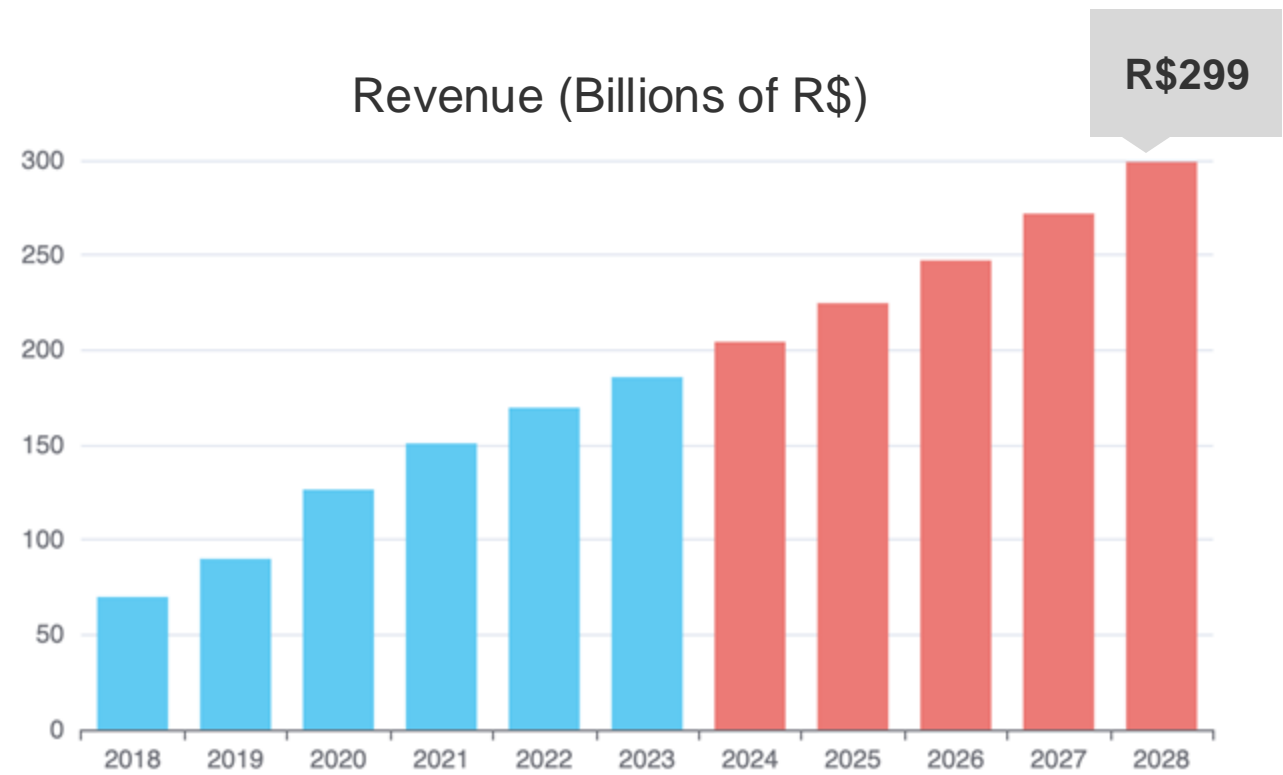
Source: ABComm

● Real data
● Forecast

Number of Orders (Millions)

Number of Online Shoppers (Millions)
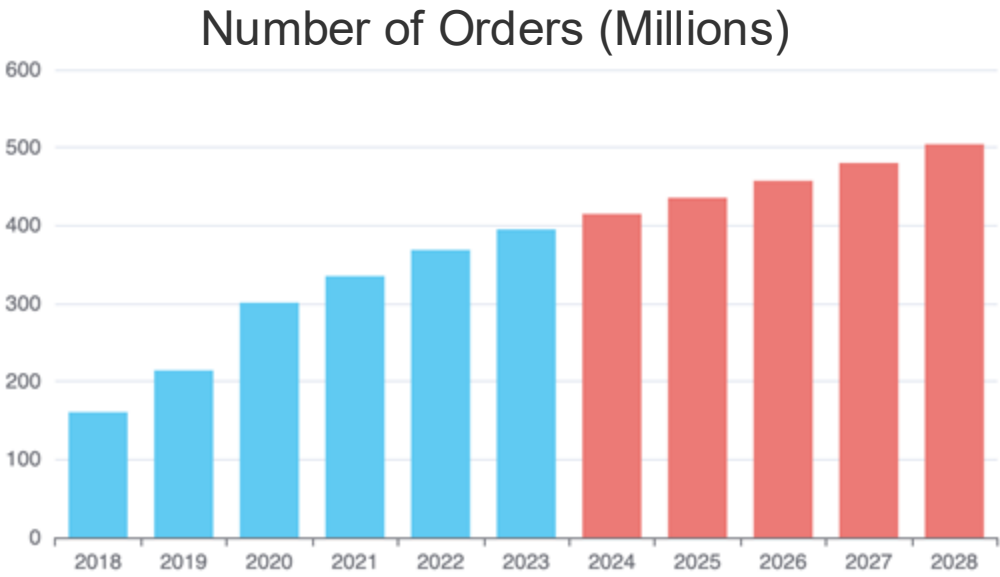
Source: ABComm

Brazilian online shoppers are price-sensitive, thus looking for good deals

77%
Looks for the best price [1]

54%
Being interested in diversity of products [3]

39%
Seeks special promotions [2]

47%
Buying less after problems with changing products [4]

[1-3] International Trade Administration. Dec 4th, 2023. Brazil – Country commercial guide. https://www.trade.gov/country-commercial-guides/brazil-ecommerce
[4] Valentia Duque of AMI. Feb 22nd, 2023. The online customer journey in Brazil and its impact on logistics. https://americasmi.com/insights/online-customer-journey-brazil-logistics-impact/

Brazilians e-shoppers are highly price-sensitive, hence the concerns about prices is an important factor to consider
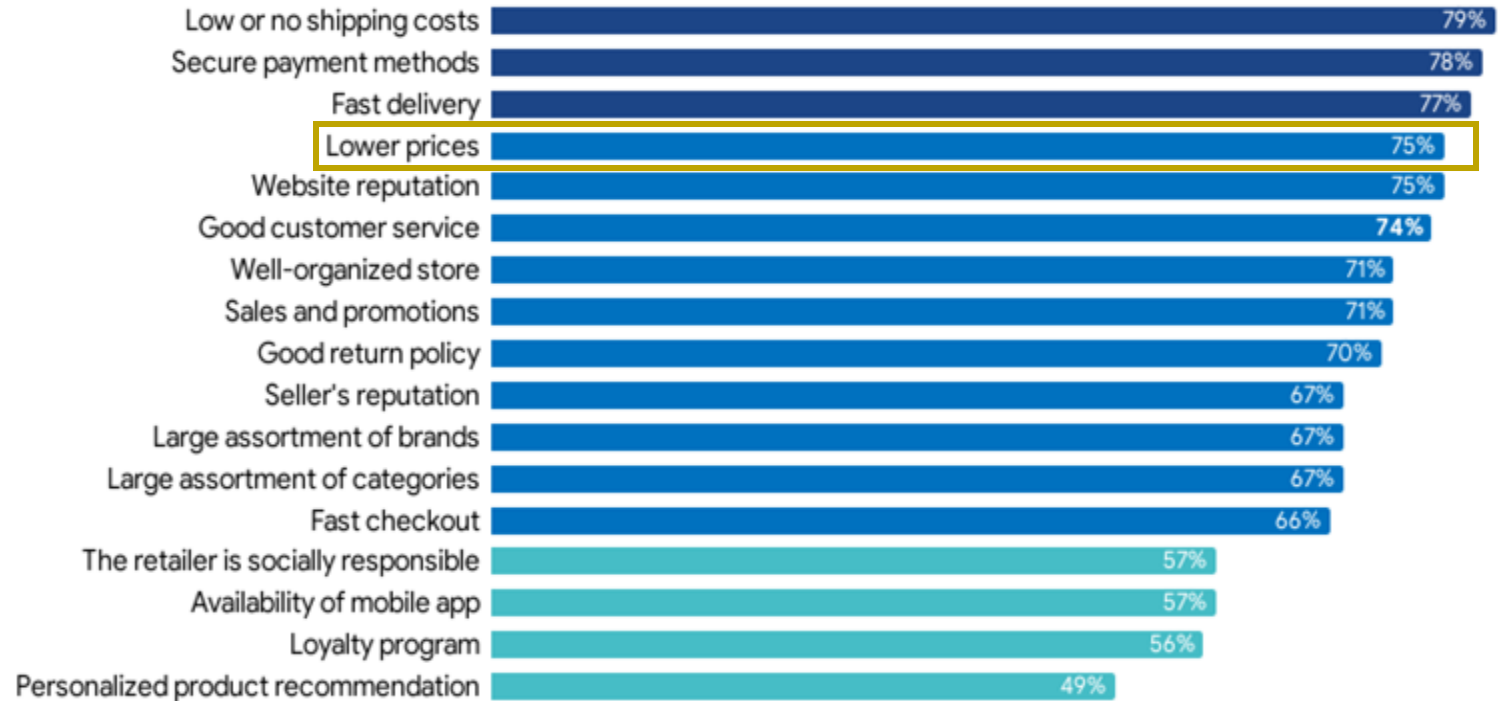
Customer expenditure

R$533.22
Average spend per e-commerce purchase [7]

R$7602.83
Annual e-commerce spend per shopper [8]

What are the most important decision factors for an online purchase? [9]

Factor	%
Low or no shipping costs	79%
Secure payment methods	78%
Fast delivery	77%
Lower prices	75%
Website reputation	75%
Good customer service	74%
Well-organized store	71%
Sales and promotions	71%
Good return policy	70%
Seller's reputation	67%
Large assortment of brands	67%
Large assortment of categories	67%
Fast checkout	66%
The retailer is socially responsible	57%
Availability of mobile app	57%
Loyalty program	56%
Personalized product recommendation	49%

[7-8] PCMI. Jan 2024. Essentials of Brazil's E-commerce market. https://paymentscmi.com/insights/brazil-e-commerce-market/
[9] NOCNOC. June 23rd, 2023. What matters most to Brazilian consumers when shopping online: top 10 decision factors for 2023. https://nocnocstore.com/en/brazilian-consumers-shopping-online-top-10-decision-factors-for-2023/#:~:text=1.,or%20no%2Dcost%20shipping%20options.

02

Structure problem

Over 80% orders under "Delivered" status throughout the year are mainly focused throughout the analysis

Percentage of Orders by Status
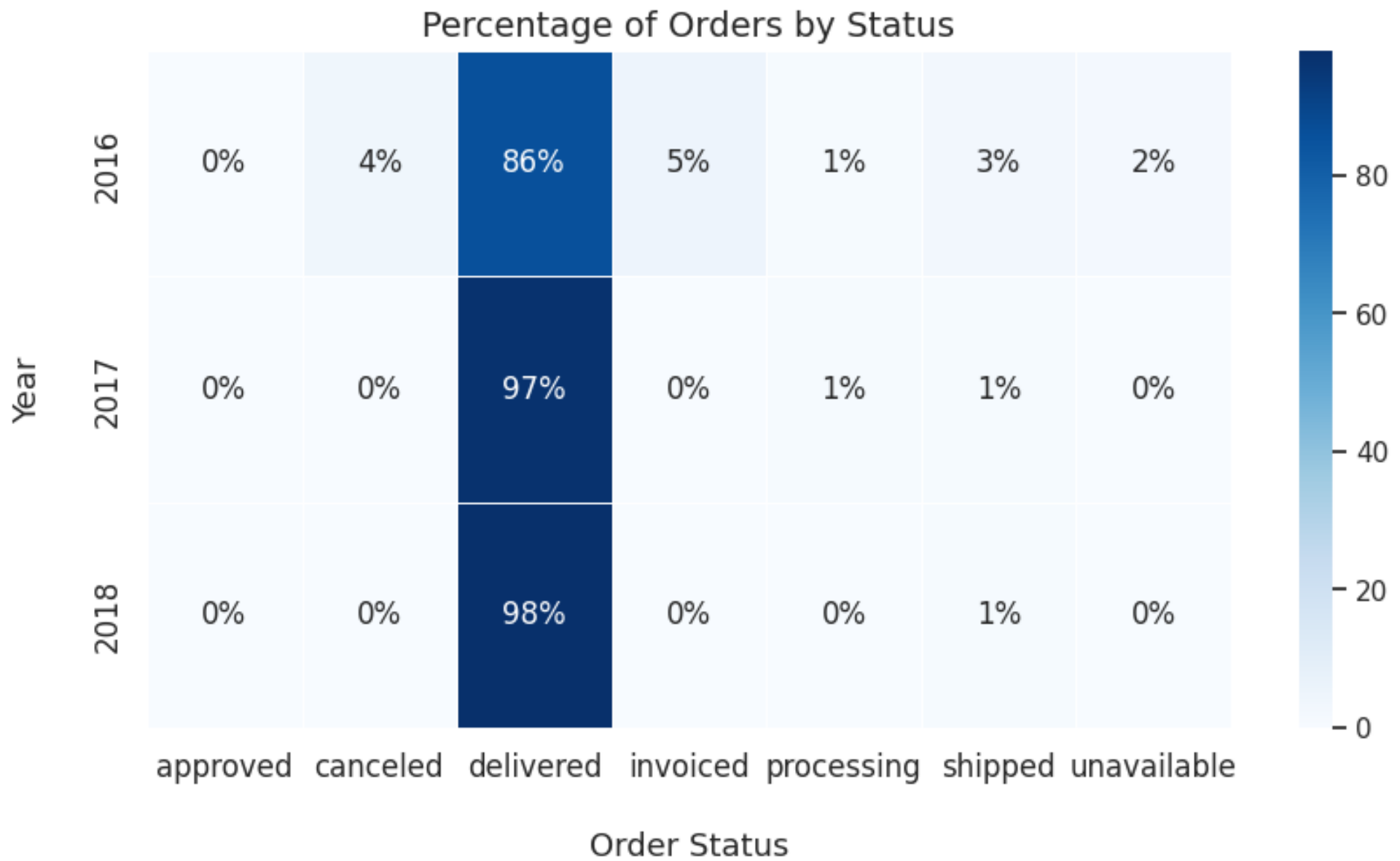
2.1
RFM analysis

A high RFM score indicates a potential category

Recency

A lower recency - high engagement of customers toward specific product category.
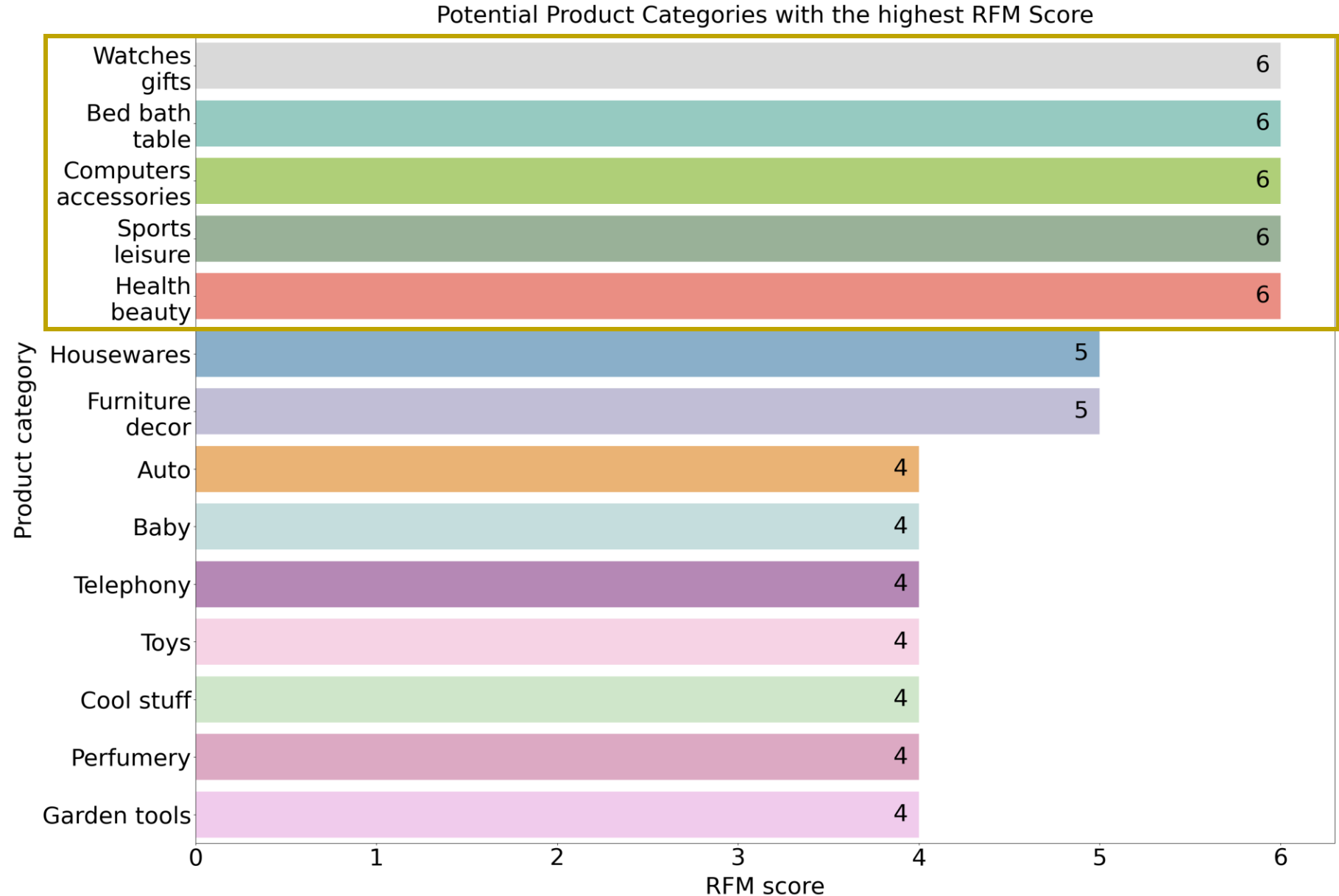
Frequency

A high frequency – high demand for specific product categories.

Monetary

A high total revenue – the contribution of the product categories.

Notably, Watches, Home appliances, Devices and Personal care are most potential compared to others

Potential Product Categories with the highest RFM Score

Followed by Housewares and Furniture decor are also potential, yet relatively low Monetary score

| Product Categories	Recency score	Frequency score	Monetary score	RFM score
Watches gifts	2	2	2	6
Bed bath table	2	2	2	6
Computers accessories	2	2	2	6
Sports leisure	2	2	2	6
Health beauty	2	2	2	6
Housewares	2	2	**1**	5
Furniture decor	2	2	**1**	5
Auto	2	1	1	4
Baby	2	1	1	4
Telephony	2	1	1	4
Toys	2	1	1	4
Cool stuff	2	1	1	4
Perfumery	2	1	1	4
Garden tools	2	1	1	4

2.2
Deep-dive into product categories' performance

2.2.1
Market demand

The demand of online shopping on OLIST consistently raising within 2017, and start declining after 2018-Q1

Besides, there is a significant increase of 2017-Q2 and 2017-Q4 around 78% and 42% respectively.


Overall Delivered Products are sold Quarterly
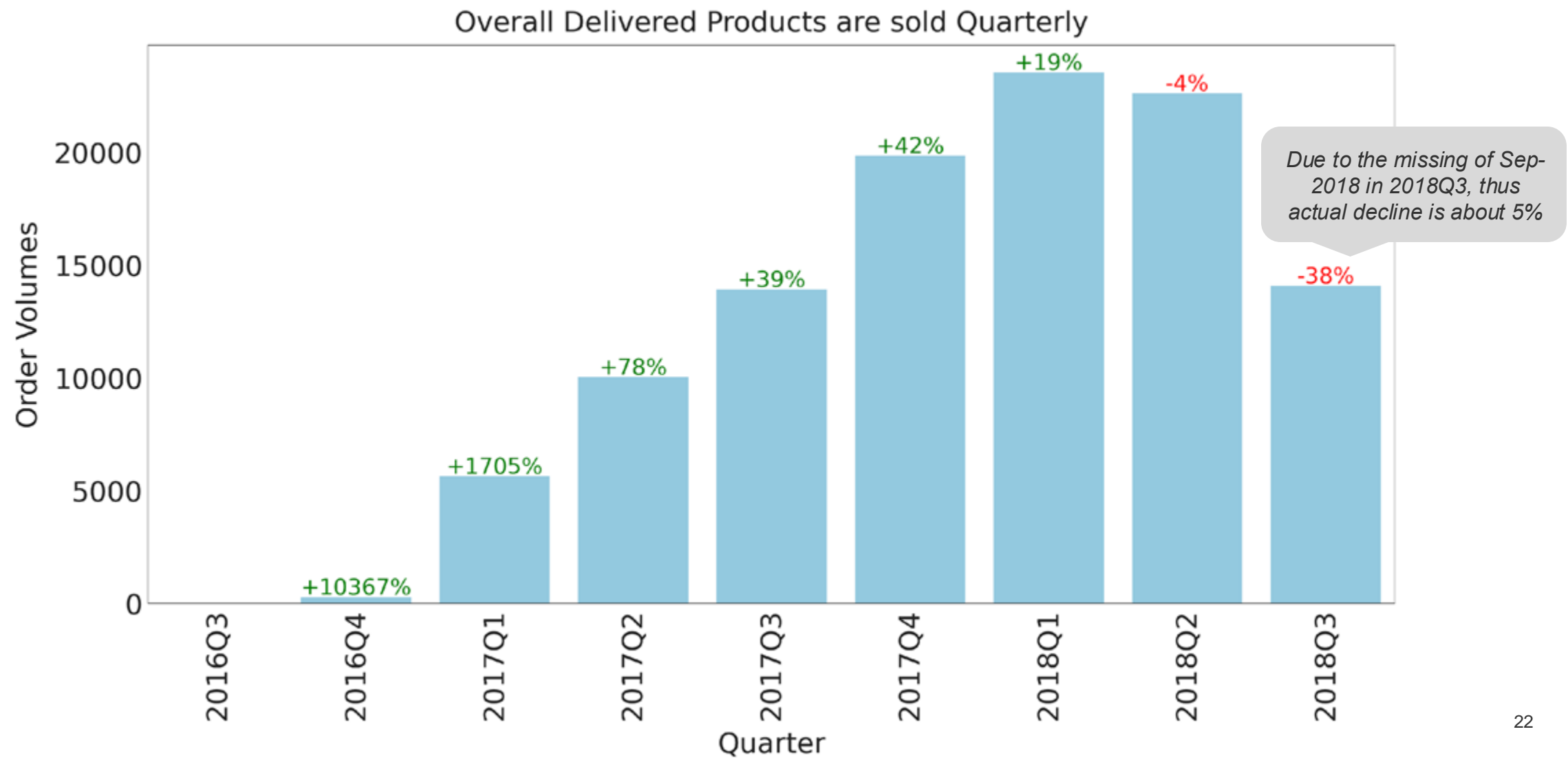
Generally, Bed bath table is the most high-demand category with low competitiveness

Health beauty follows closely, accounted for 9% of products sold, but the market is highly overcrowded with many sellers.

TOP 10 Product Categories most ordered by Customers

TOP 10 Product Categories most offered by Sellers
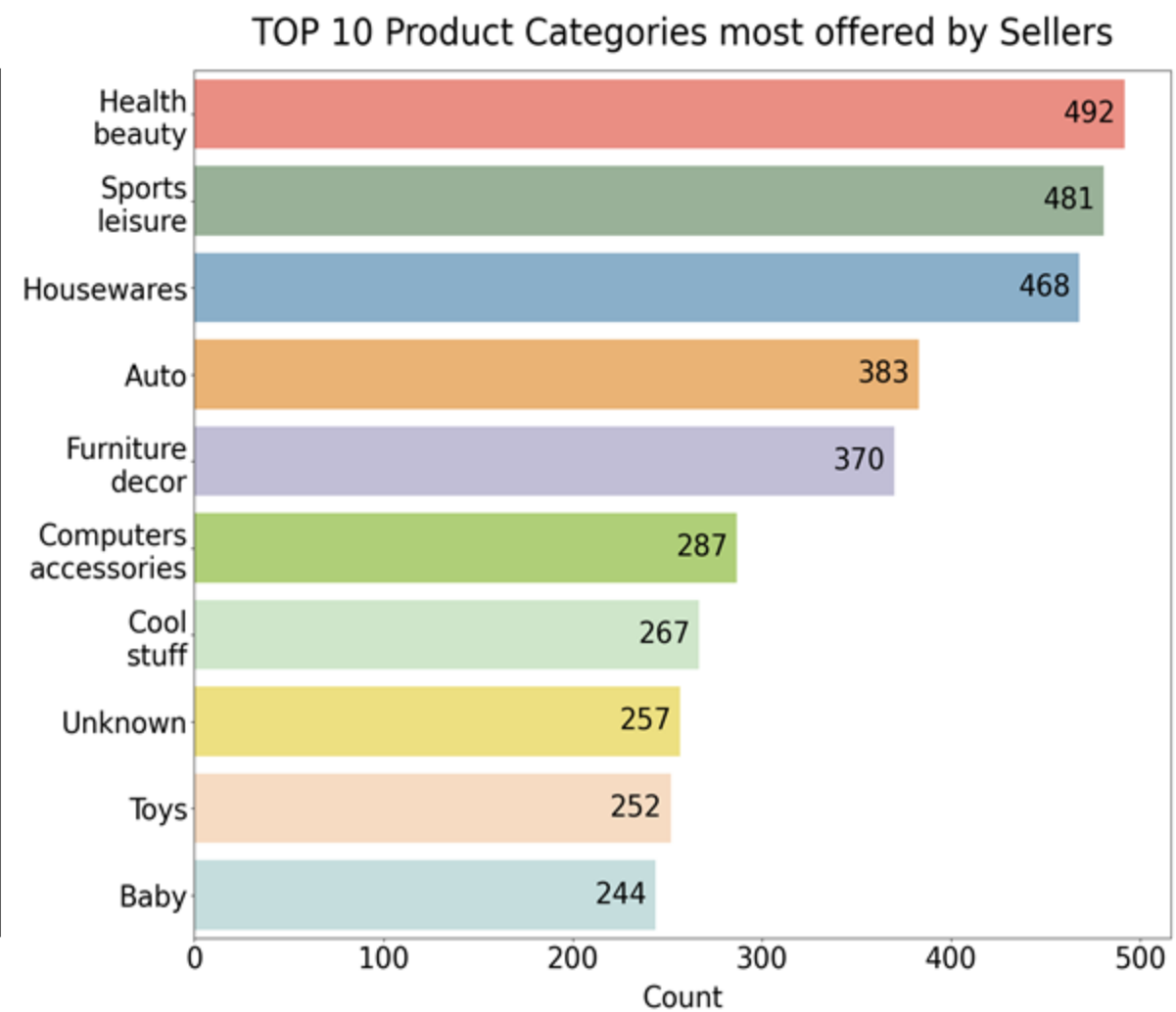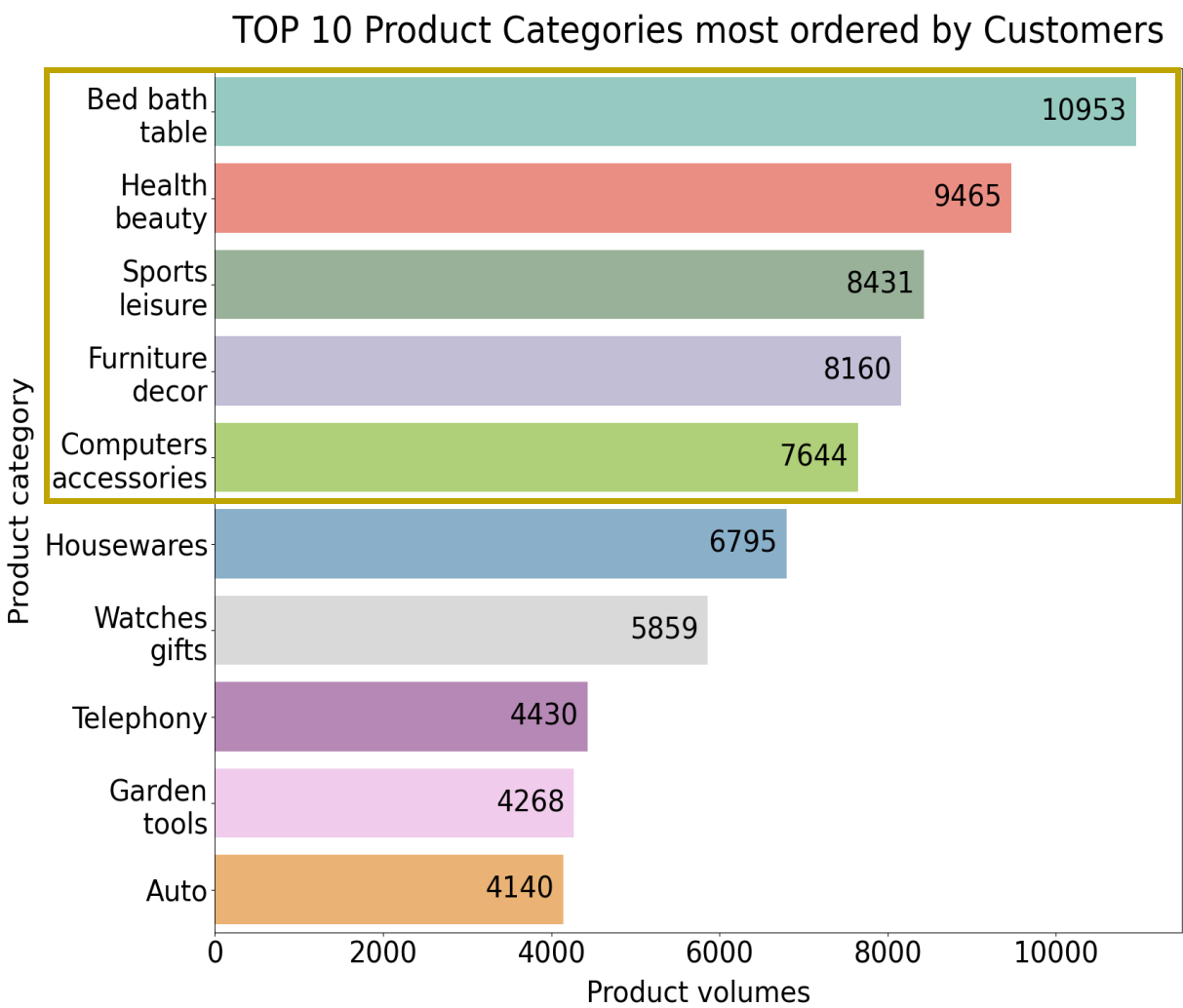
Bed bath table, Health beauty, Sports leisure, Computers accessories and Furniture décor showed a consistent growth, and created a clear difference from others in Q1-2018

Quarterly Product Volumes of Product Categories with high RFM score
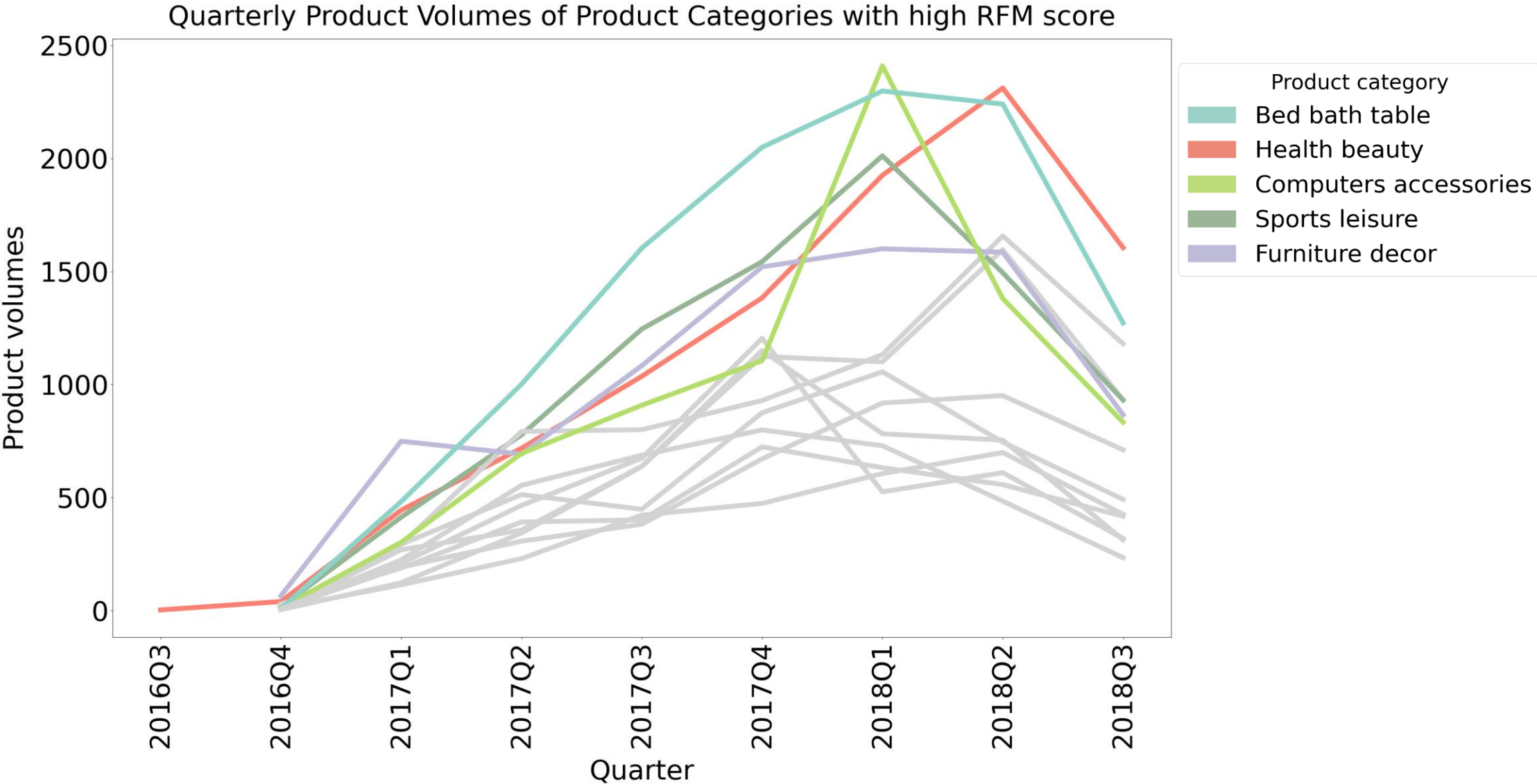
By month, Nov-2017 gained the highest order volumes that driven by the high shopping demand of customers on Black Friday (Nov 24th)

Monthly Delivered Products count

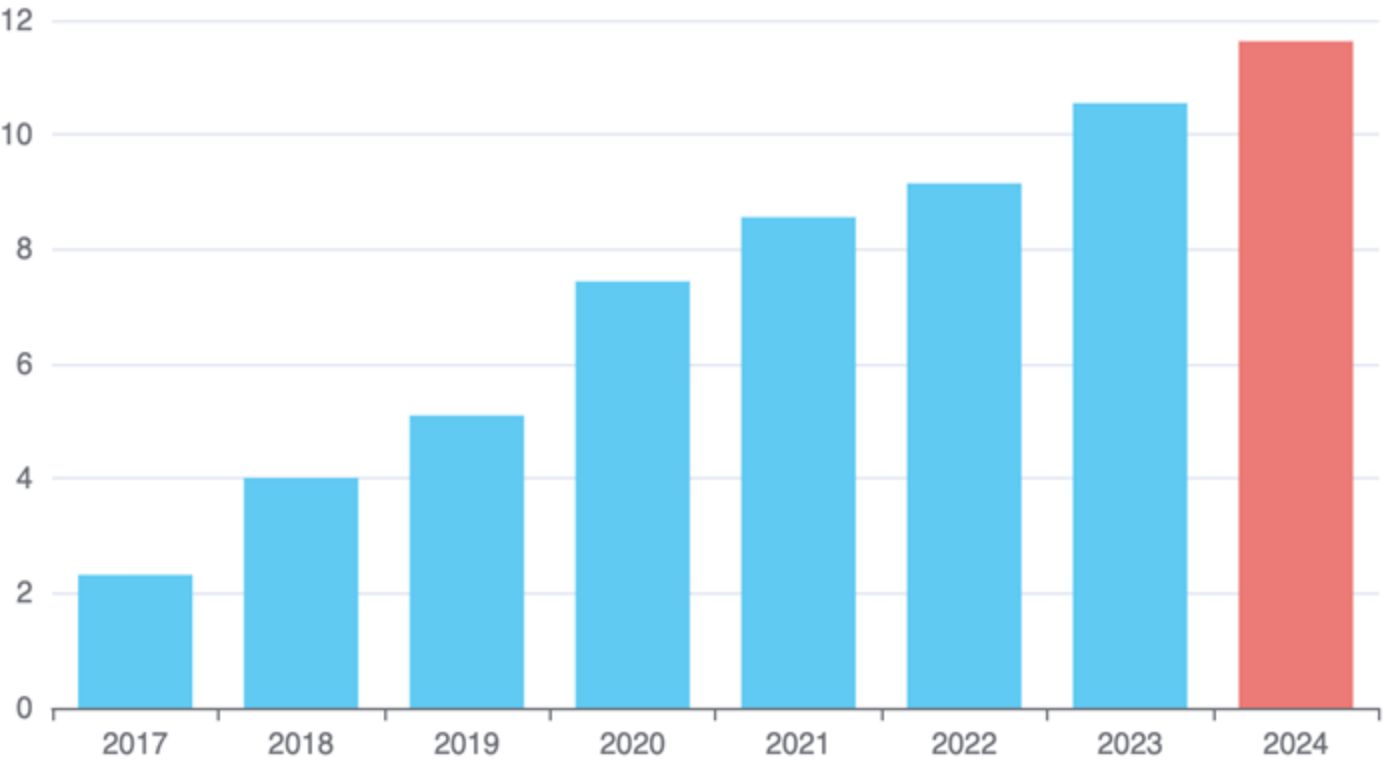Delivered Products count in Nov-2017
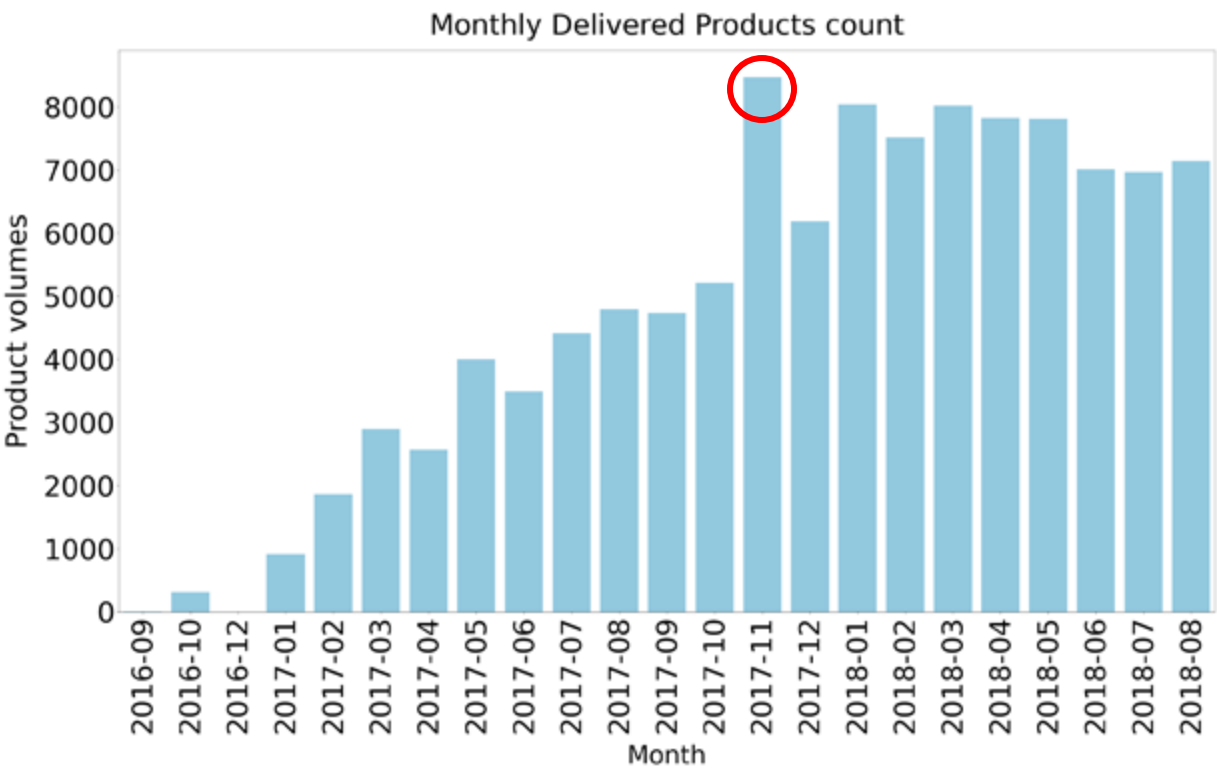
Black Friday, a strategic timing of e-tailers that is known as a major online event toward Brazilian shoppers

Total Revenue in the period (Billions of R$)

11.63
+10.18%

Online searches (Millions of searches) [1]

Most common

3.5M - BLACK FRIDAY

2.8M - MONTHER'S DAY

1.7M - VALENTINE'S DAY

1.6M - CHILDREN'S DAY

Source: ABComm

Total Revenue in the period: Total E-commerce Sales in the week of the event

[1] PagBrasil. Oct 31st, 2024. Black Friday in Brazil isn't just a Day, it's a Month-long event!. https://www.pagbrasil.com/blog/cross-border-en/black-friday-in-brazil-isnt-just-a-day-its-a-month-long-event/
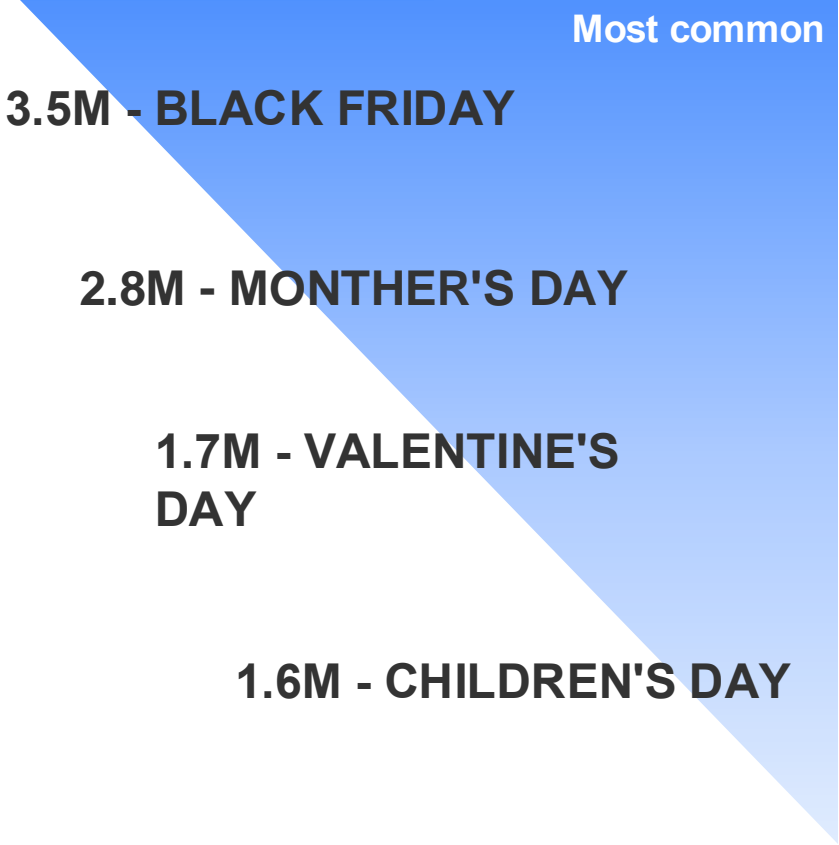
Product categories with consistent growth mantained leading position thanks to high performing on Black Friday

Monthly Product Volumes of Product Categories with high RFM score

Product category:
- Bed bath table
- Health beauty
- Computers accessories
- Sports leisure
- Furniture decor
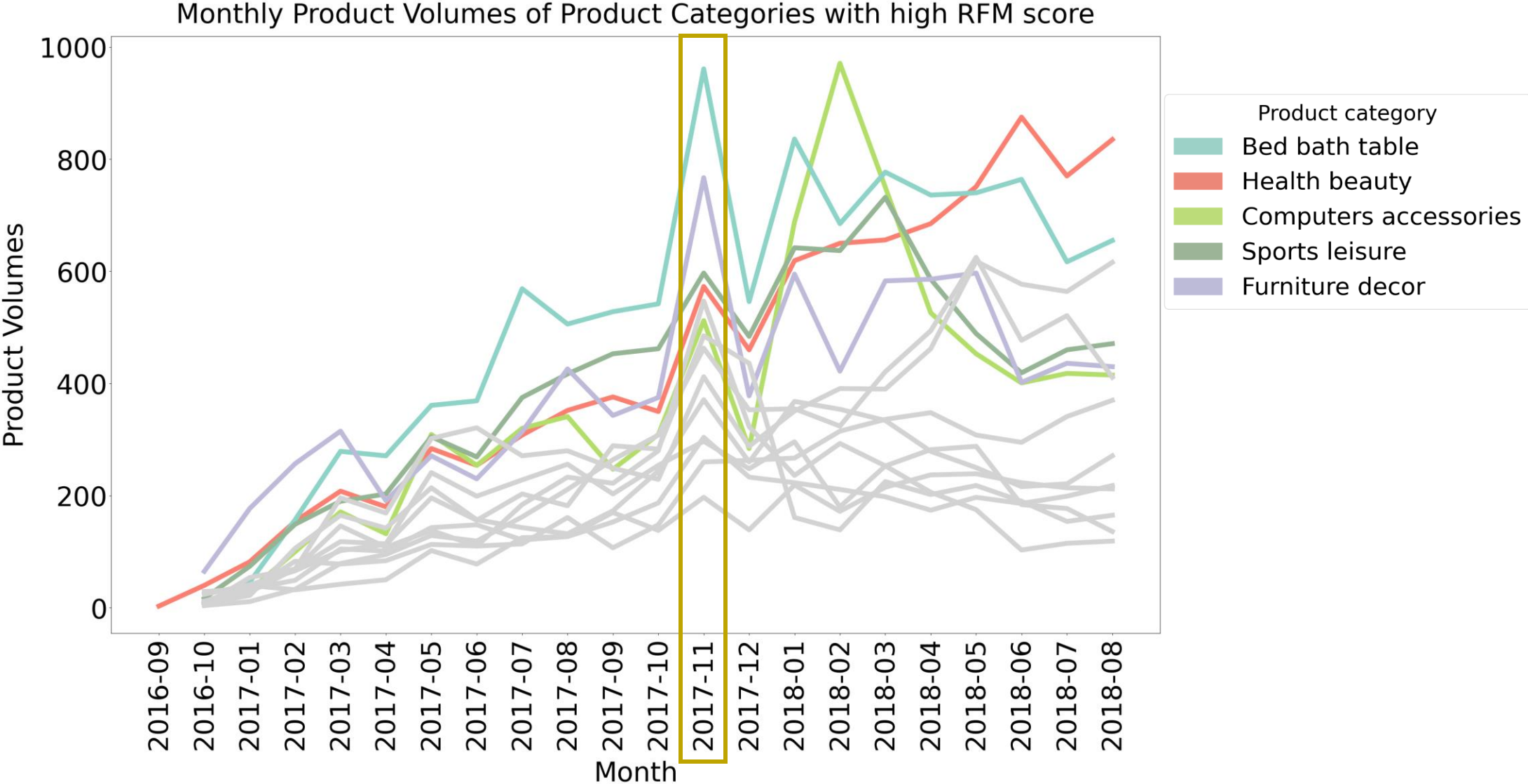
TOP 5 the most potential product categories regarding market demand, compared to their peers within the high RFM score categories

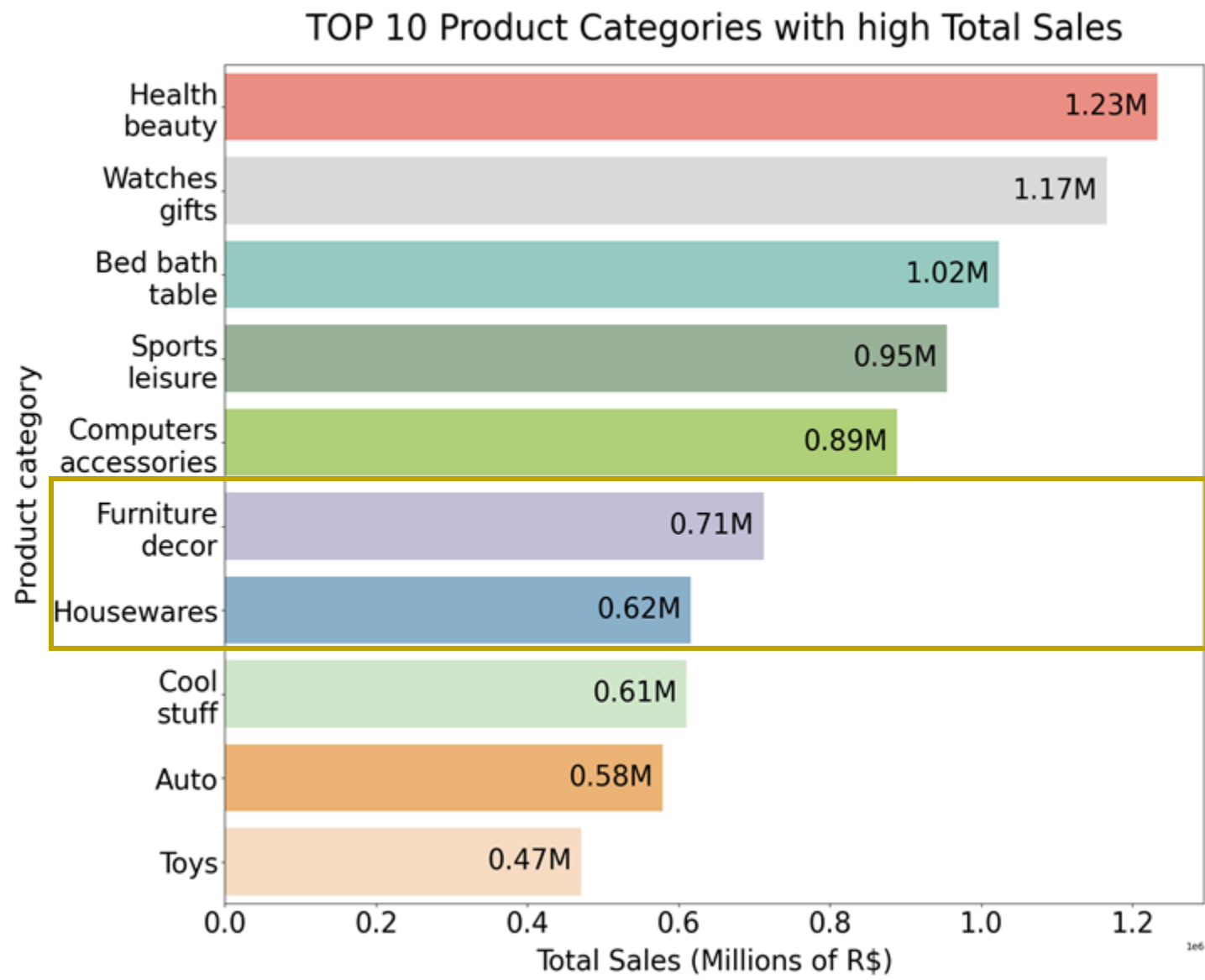| Product Categories	RFM score
Watches gifts	6
Bed bath table	6
Computers accessories	6
Sports leisure	6
Health beauty	6
Housewares	5
Furniture decor	5
Auto	4
Baby	4
Telephony	4
Toys	4
Cool stuff	4
Perfumery	4
Garden tools	4

TOP 5 high-demand product categories driven by:

- **Most purchased** by customers both quarterly and monthly
- **Stable growth in demand** compared to other categories
- **High sales contribution** in overall, esp. on the strategic event (Black Friday)

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2.2.2
Sales performance

Regarding sales contribution, following Health beauty, even though Watches gifts are rather low in demand, still contributed to 8.82% of the overall sales

TOP 10 Product Categories with high Total Sales

Moreover, it is clear that total sales of Furniture decor is approx. 15% higher than Housewares.

However, the total sales of Watches gifts is driven by the high value product items

TOP 10 Product Categories with high AVG Item value
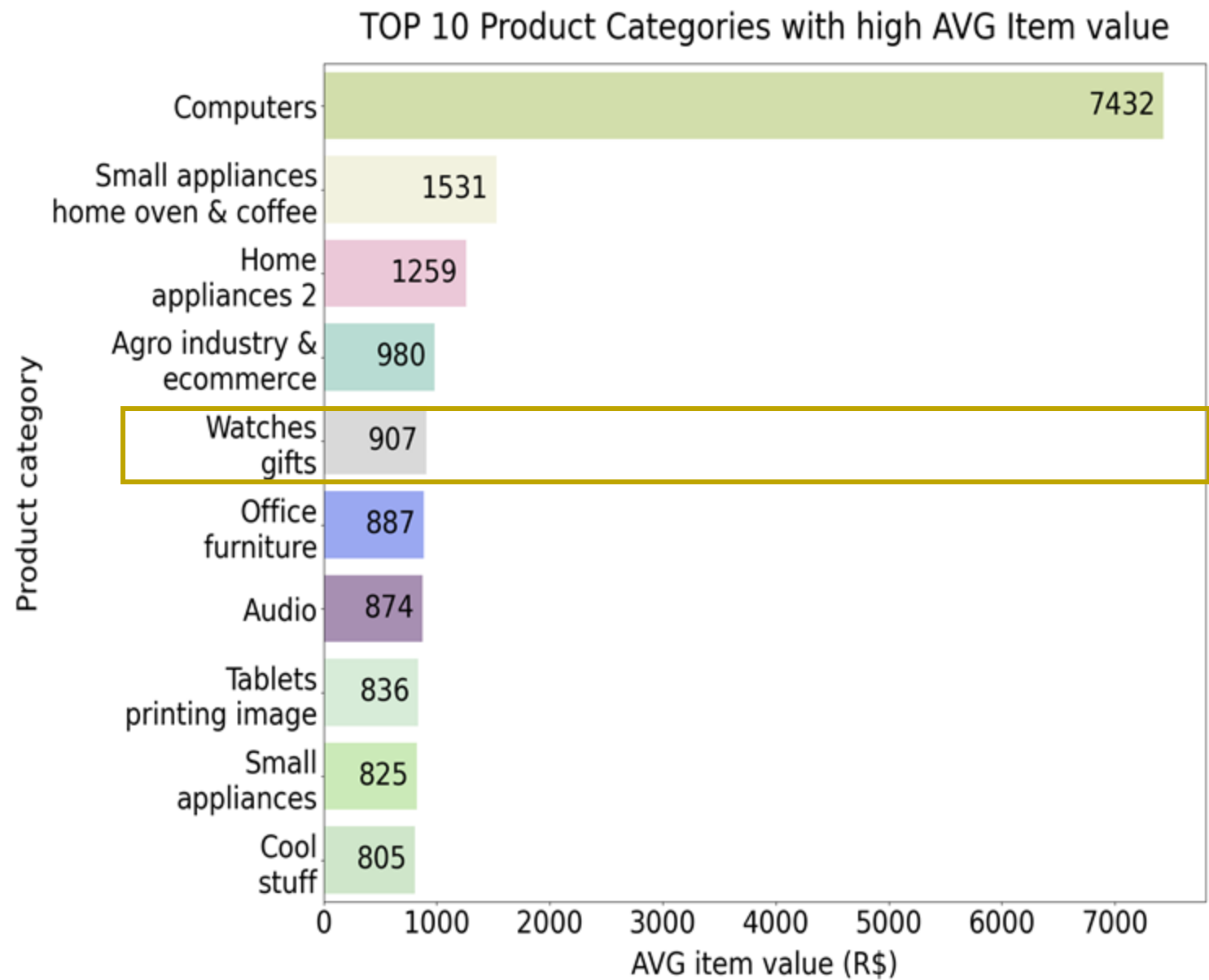
In overall, the total sales of product categories mainly come from great order volumes rather than high-value products

It also explains the higher total sales of Furniture decor compared to Housewares.
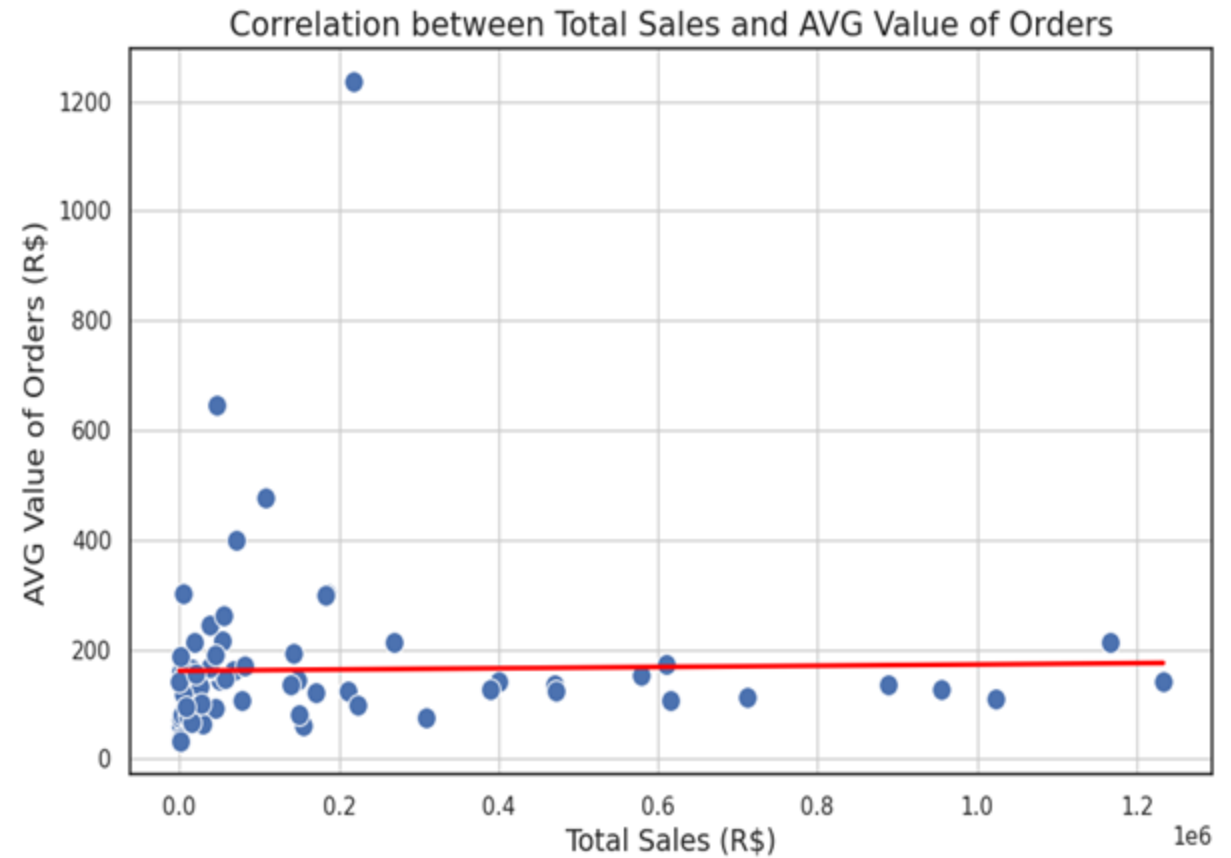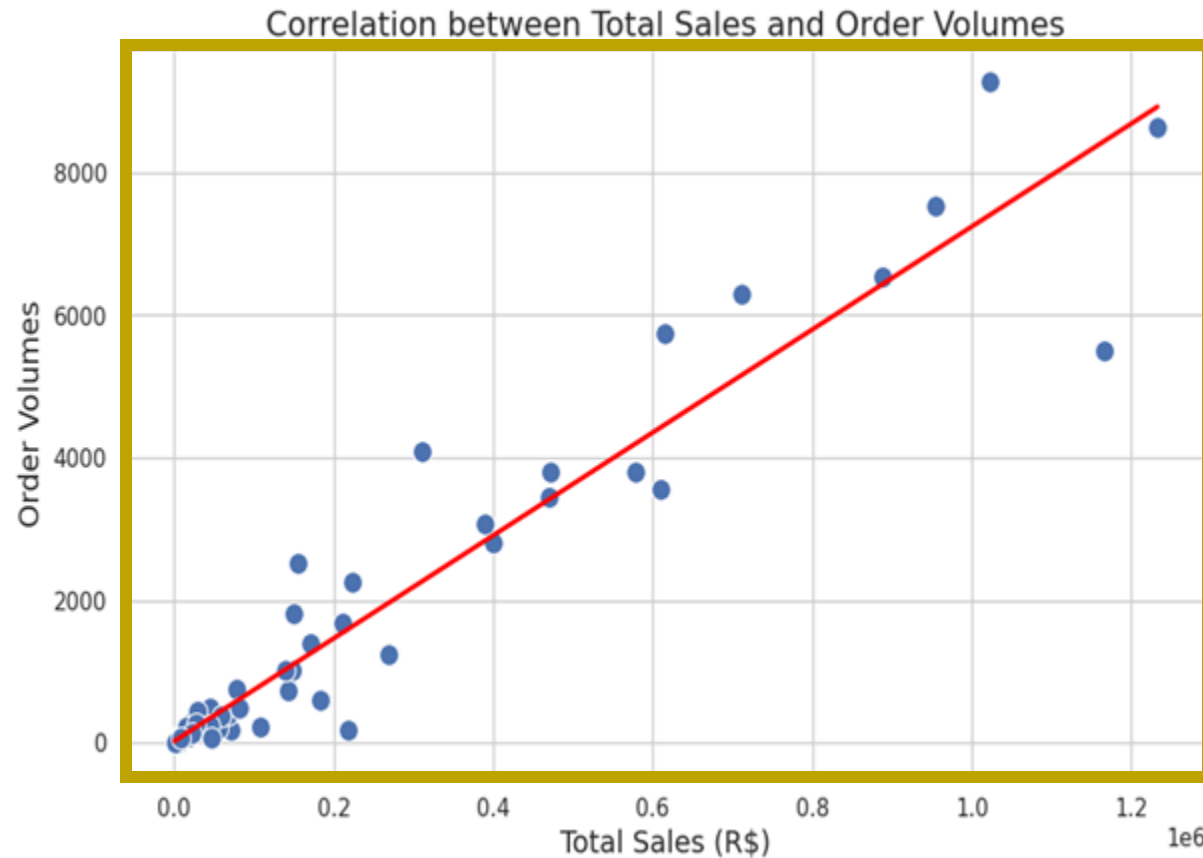
Hence, the high-demand product categories demonstrated high and constant sales growth quarterly in 2017

Quarterly Sales trends of Product Categories with high RFM score

Product category
- Bed bath table
- Health beauty
- Computers accessories
- Sports leisure
- Furniture decor
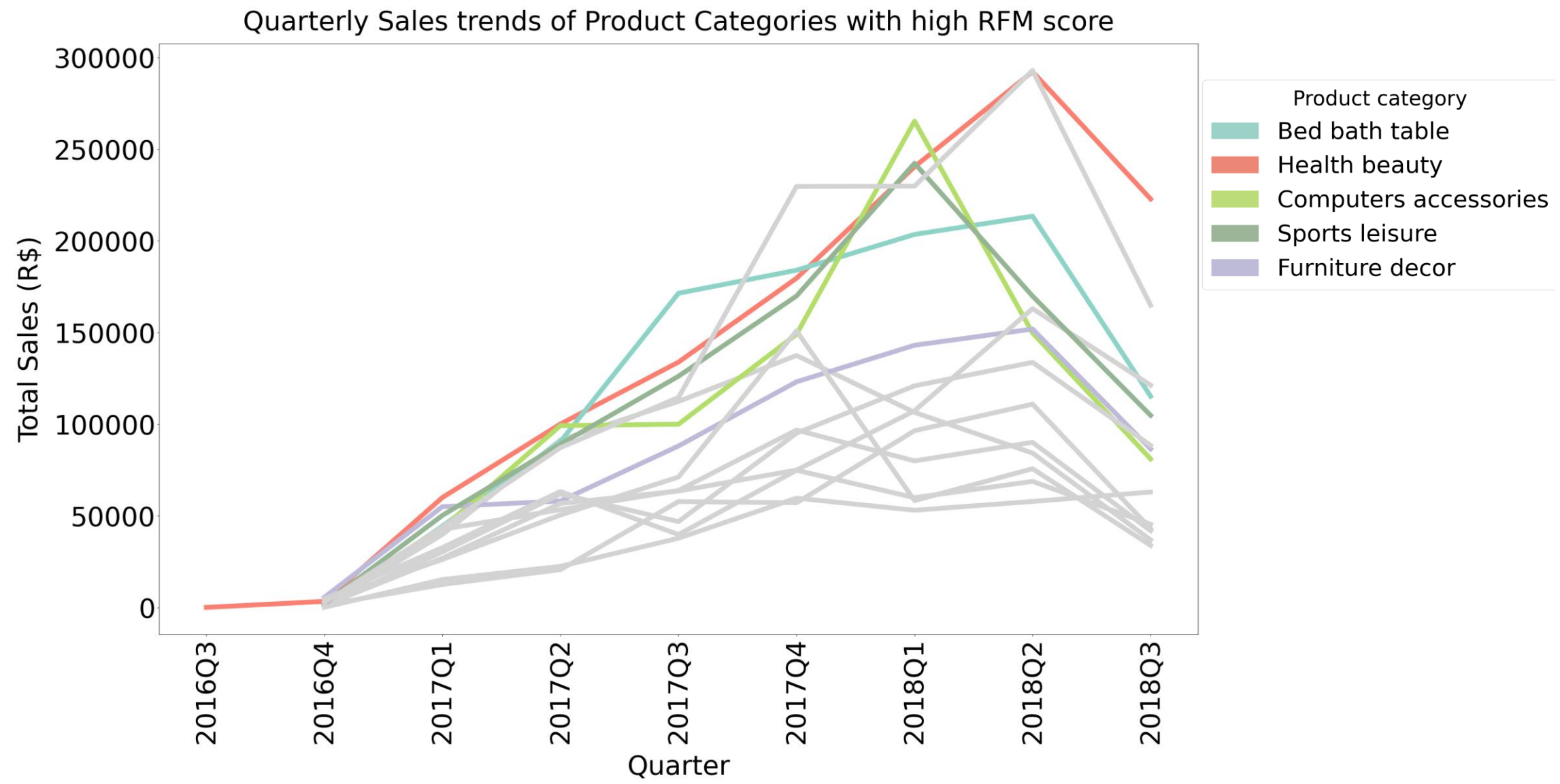
Product categories with high order volumes witnessed well-performance in total sales on Black Friday

Apart from TOP 5, Housewares also showed gradual growth until peaked in May 2018.

Monthly Sales trends of Product Categories with high RFM score
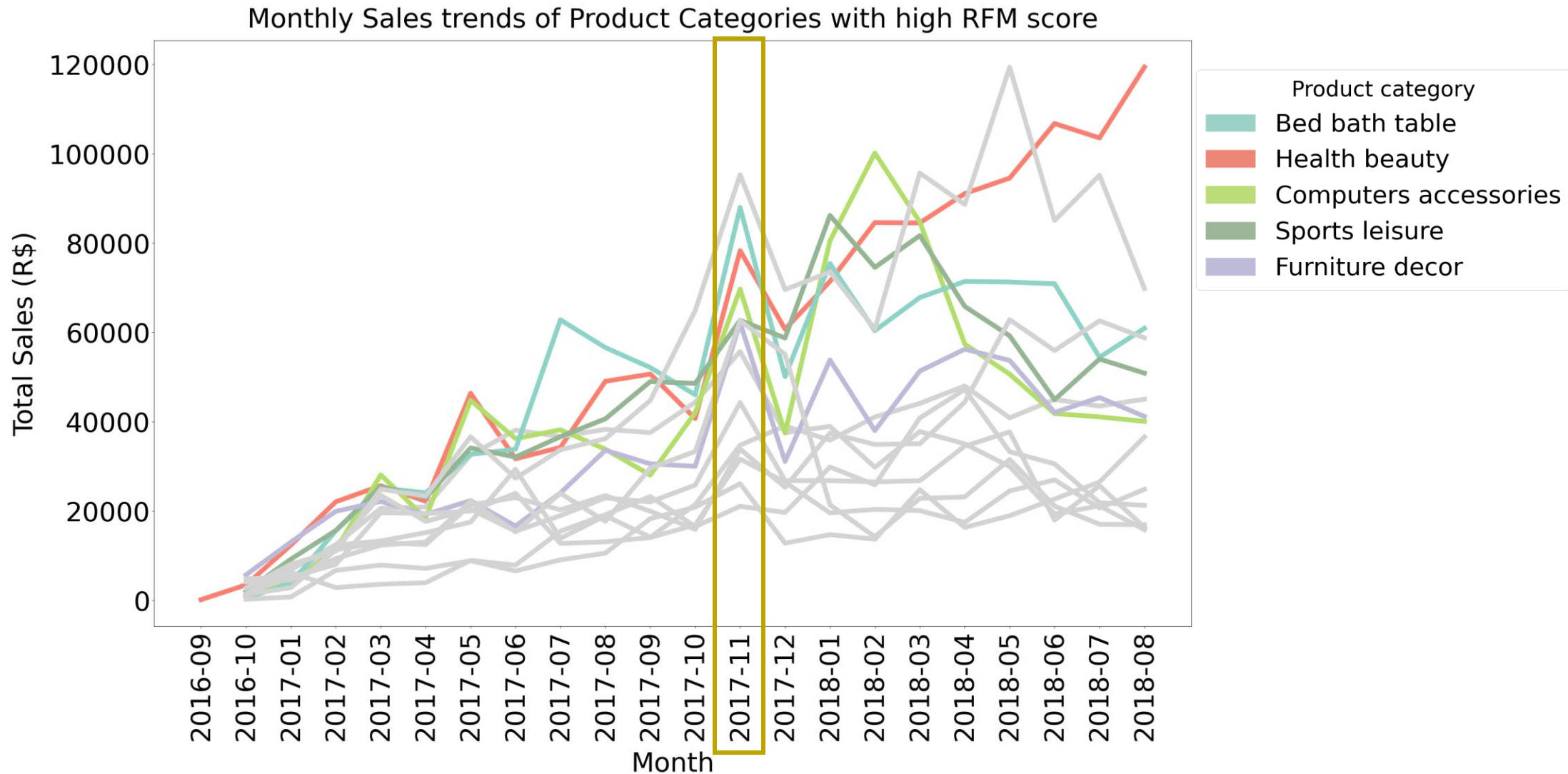
Moreover, despite the high average transactions driven by high-value product items, the demand for Computers and Small appliances (home oven & coffee) are rather low

Relatively impacts the sales growth due to exceeding the average customer expenditure.
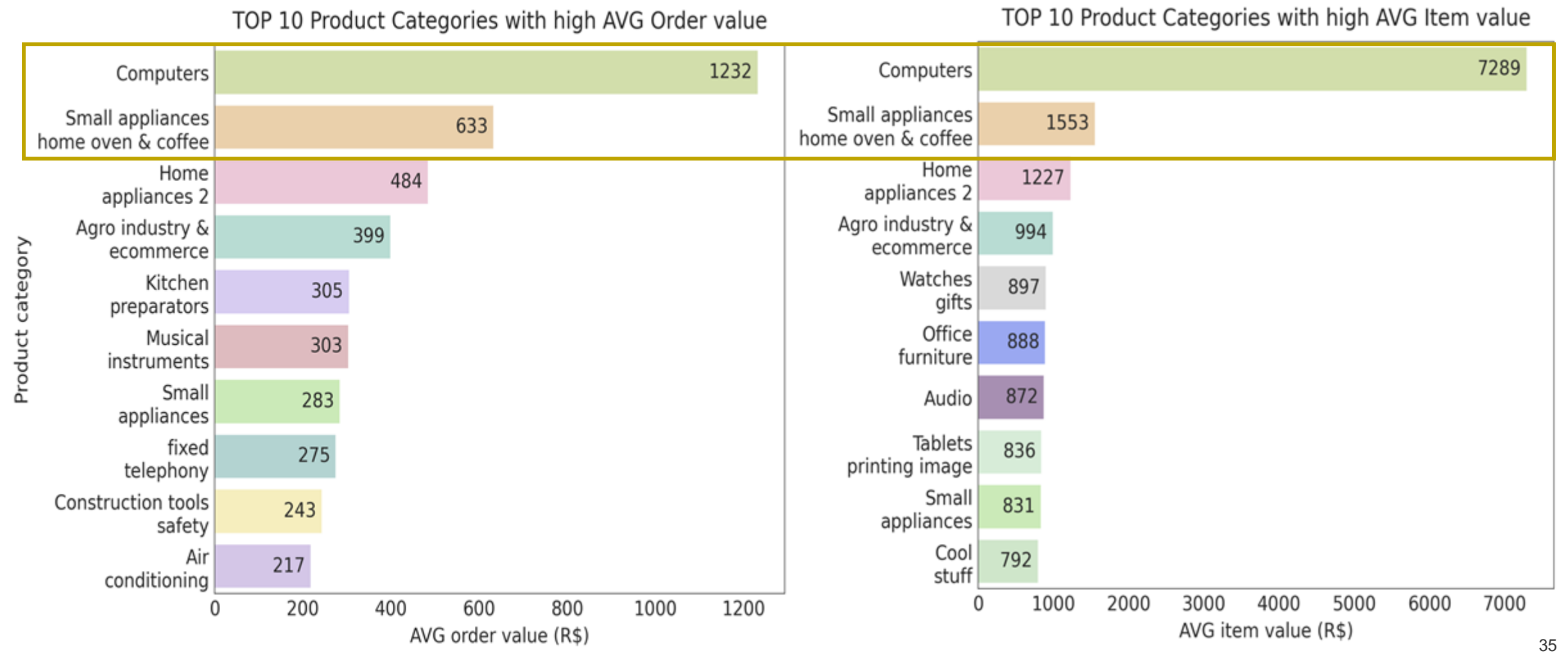
Generally, TOP 5 high-demand product categories tend to contribute significantly to overall sales performance thanks to great order volumes and stable sales trend

Product Categories	RFM score
Watches gifts	6
Bed bath table	**6**
Computers accessories	**6**
Sports leisure	**6**
Health beauty	**6**
Housewares	5
Furniture decor	**5**
Auto	4
Baby	4
Telephony	4
Toys	4
Cool stuff	4
Perfumery	4
Garden tools	4

TOP 10 Product Categories most ordered by Customers
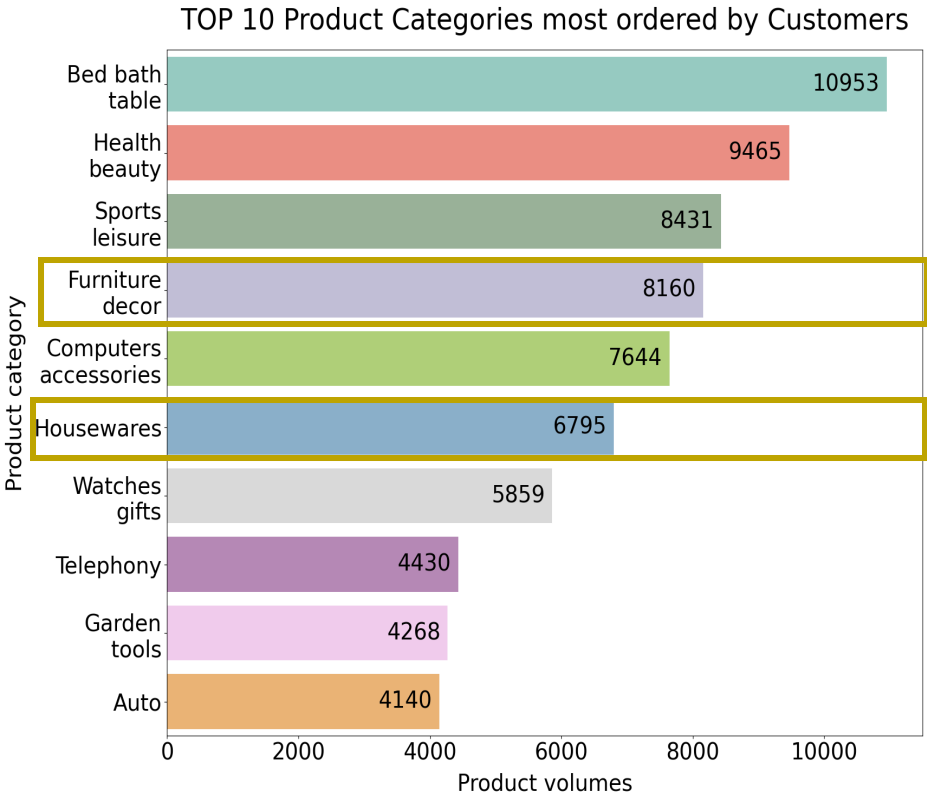
- Additionally, regarding the group of RFM score at 5, **Furniture décor gained better sales performance than Housewares driven by high order volumes**

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2.2.3
Customer experience

The overall customers' satisfaction of OLIST are mostly positive, yet there are still some bad reviews are stemmed from "Product"

Total ratings of the customers
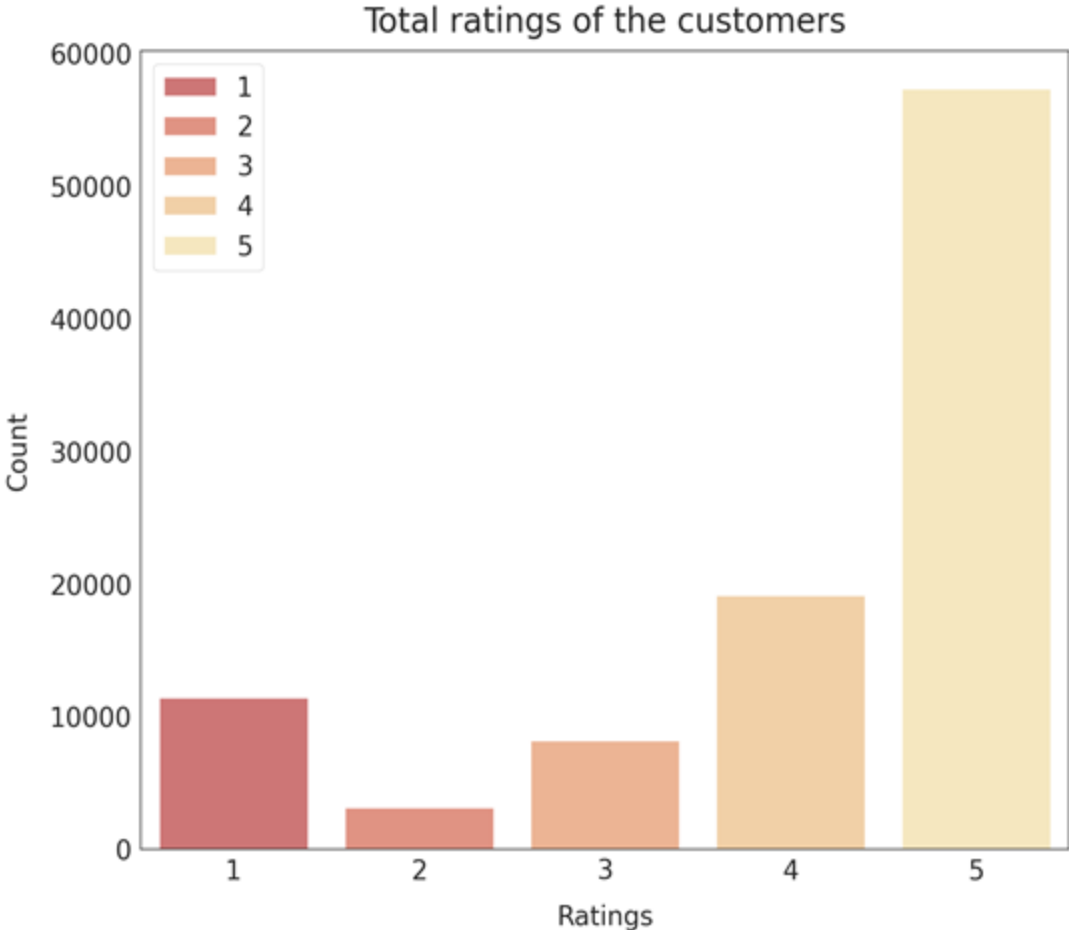
Key words are commonly mentioned in the bad reviews
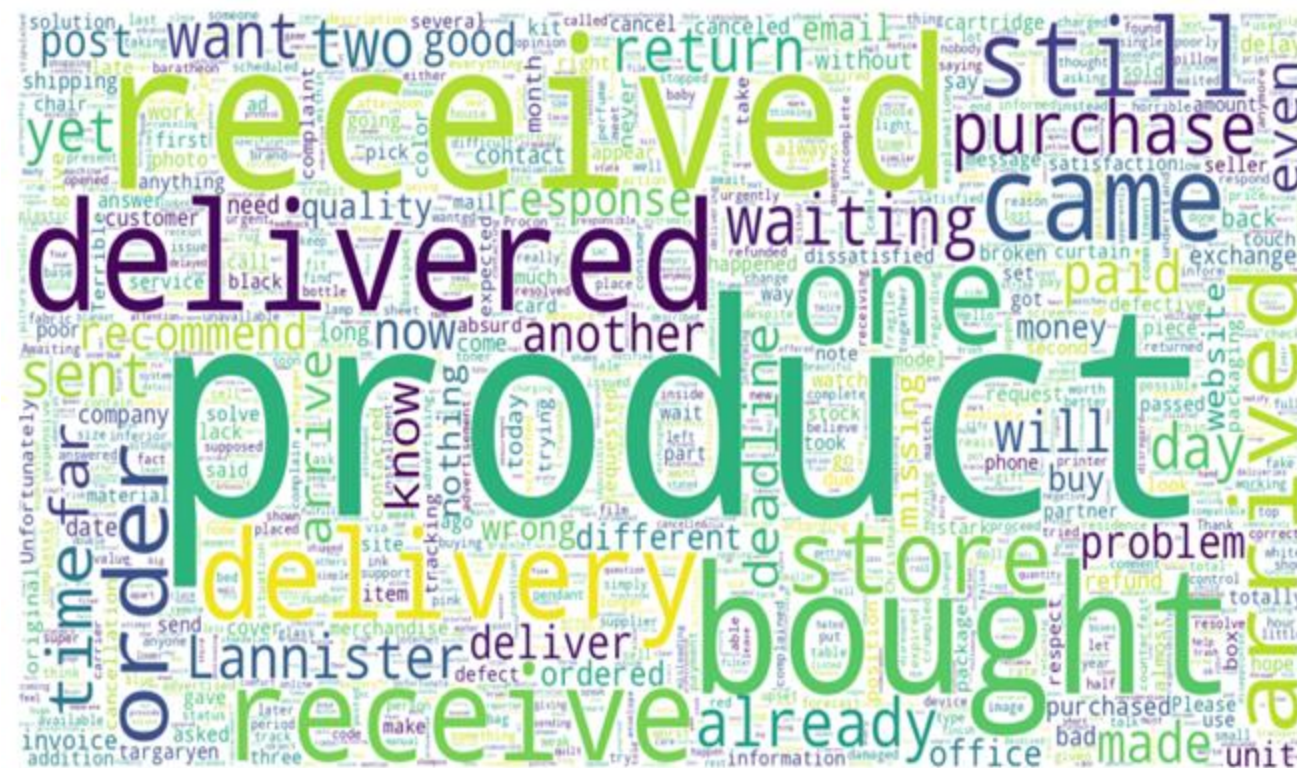
Notably, TOP 5 potential product categories are well-performed that bring positive experience toward customers

Ratings of TOP 5 potential Product Categories
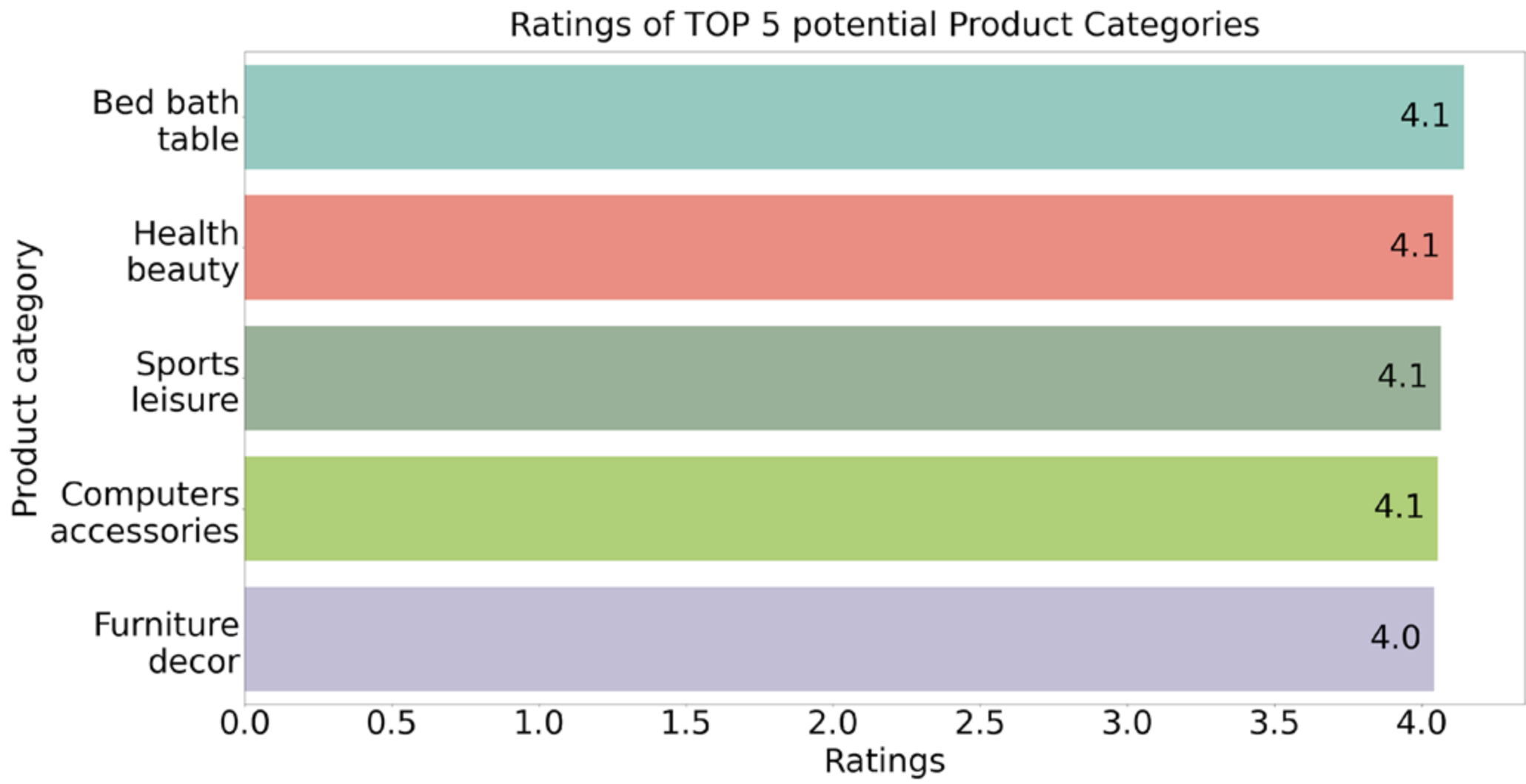
03

Summary & Moving forward

Key takeaways

Bed bath table	Health beauty	Sports leisure	Furniture décor	Computer accessories
✓ **High customers' demand**	✓ **High customers' demand**	✓ **High customers' demand**	✓ **Relatively high customers' demand**	✓ **Relatively high customers' demand**
✓ **Consistent growth in market demand**	✓ **Constant and long-term growth in order volumes and total sales**	✓ **Consistent growth over time in order volumes and sales**	✓ **Most affordable price among others in TOP 5**	✓ **Consistent growth in order volumes and sales**
✓ **Low competitiveness**	✗ **High competitiveness** compared to others in TOP 5	✗ **High competitiveness**	✓ **Relatively high in order volumes and total sales over time, and strategic event**	✓ **Relatively high total sales – driven by both order volumes and high-priced product items**
✓ **High contribution to total sales over time, even strategic event**			✗ **Rather high competitiveness**	

Recommendations for the next moves

Strengthen customers' loyalty	Differentiate customer experience			Order Volumes concentration
Bed bath table	**Health beauty**	**Sports leisure**	**Computer accessories**	**Furniture décor**
- **Focus on materials** to assure long-term value - **Deliver multinational or smart functions** (e.g. easy-to-clean, space-saving, etc.) to brings convenience with better price - **Offers lucrative packages or sets** - **Provide appropriate warranties** for customer satisfaction / experience	- **Differentiate the products** (e.g. natural ingredients) - **Personalize the customer experience** considering factors such as ethnicity, skin tone, skin concerns and gender - **Focus on WOM or customers' reviews** to enhance trust - **Consider source of suppliers for better price** than other sellers	- **Offers specialized products** (e.g. eco-friendly sportswear, etc.) - **Emphasize on the product quality or materials, and unique features** to promise interesting experience - **Focus on convenience regarding return policies** - **OR fit assurance** for athletic wear / shoes	- **Deliver product quality and durability** to enhance customers' reliance - **Offers attractive promotions / events** to trigger interest in purchase - **Consider creatin bundle offers** (e.g. keyboard with wrist support)	- **Offer diverse and eye-catching style or designs** for different preferences - **Consider to serve as getaway items for cross-selling** of related products (i.e., Home goods) **or Bundle offers** to increase average order value

THANK YOU!