SUMMER RETENTION PREDICTION

Presented by Group 3
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INTRODUCTION

- H&M sales peak occur in every summer season (June to August), accounting 30.29% of total transactions in a year

- Will customers retain to H&M in the month (September) after the peak summer season

- Our goal is to figure out whether customers will retain to H&M after the peak summer season and with what kind of features
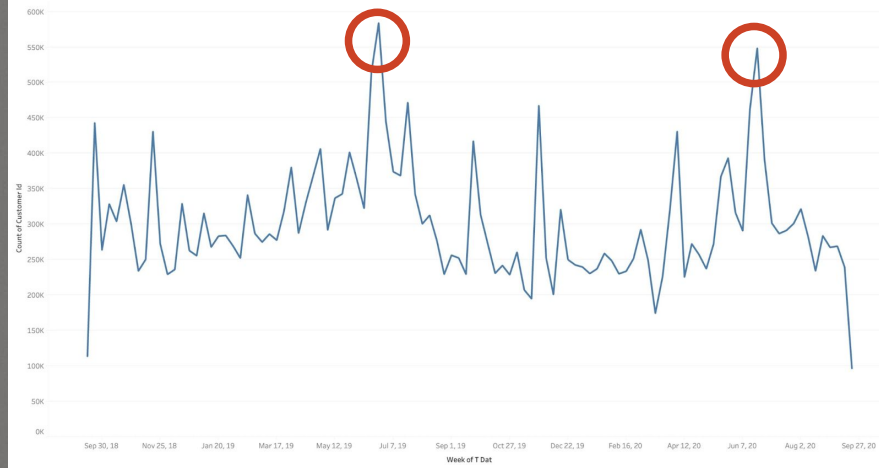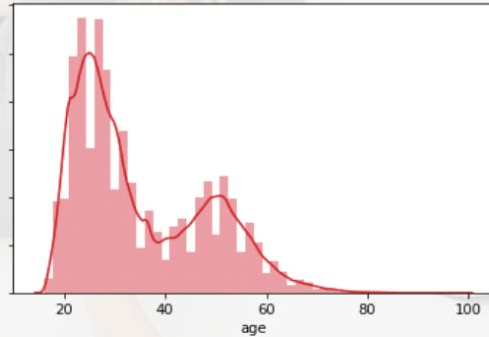

H&M Sales (Sep 2018 - Sep 2020)
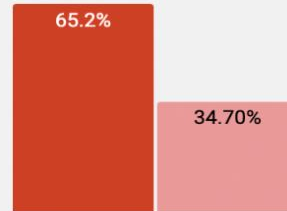
Exploratory Data Analysis

43.5%
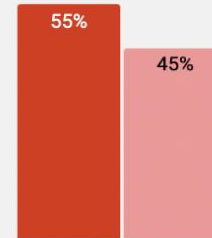transactions from age 21-30

65%
from online channel

■ Online ■ In-store

65.2%

34.70%

55%
Active in H&M membership club

■ Active ■ Non-active

55%

45%

Exploratory Data Analysis

65%
of total sales from Ladieswear
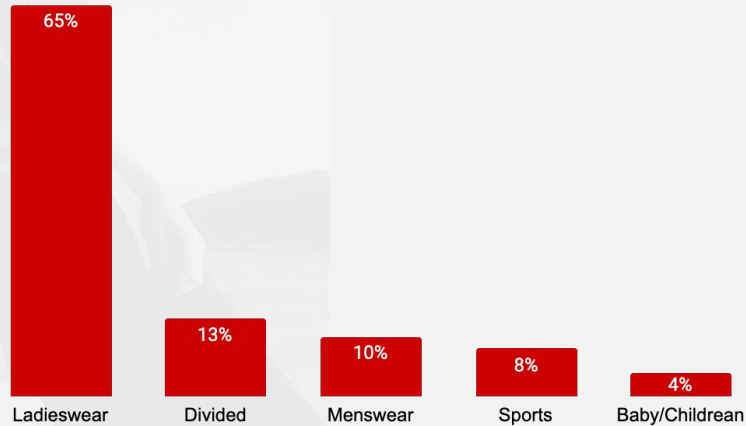
25%
of total sales on weekends

65%	
13%	
10%	
8%	
4%	
Ladieswear	Divided	Menswear	Sports	Baby/Childrean

| 75% |
| 25% |
| ■ Weekends ■ Weekdays |
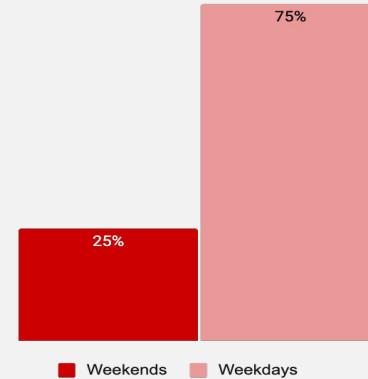
DATA PROCESSING

Subset Creation

Extracted peak summer season data in 2020 from transaction dataset and merged with customer and product datasets

Aggregated the merging dataset to customer level and created a peak summer season subset with new variables organized from the merging dataset

Created a random subset that is 10% from the peak summer season subset

Feature Engineering

Removed price outlier and created new dummy variables:

- customer age groups
- purchasing channel: online or physical store
- membership status
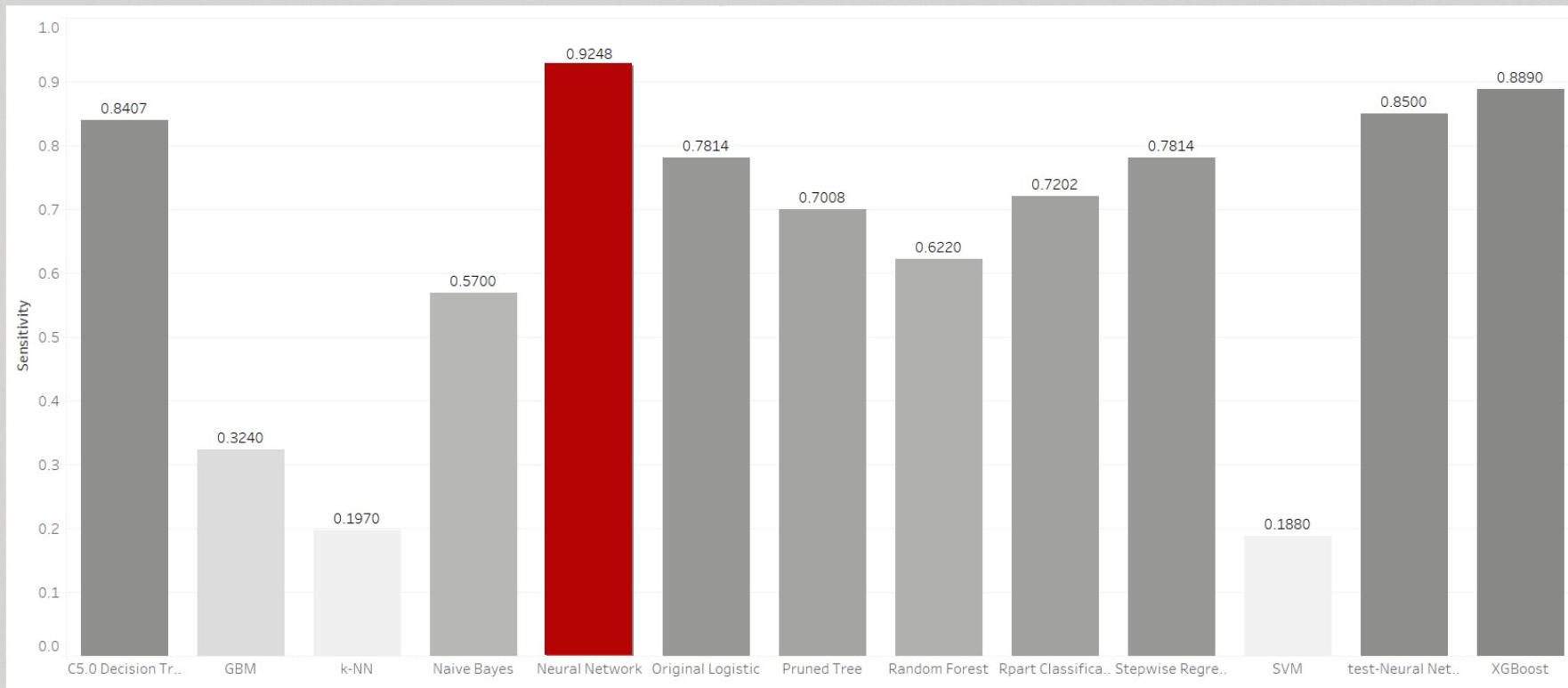- purchased product features

Feature Selection

Selected features based on correlations between independent variables and the dependent variable (retention in September)

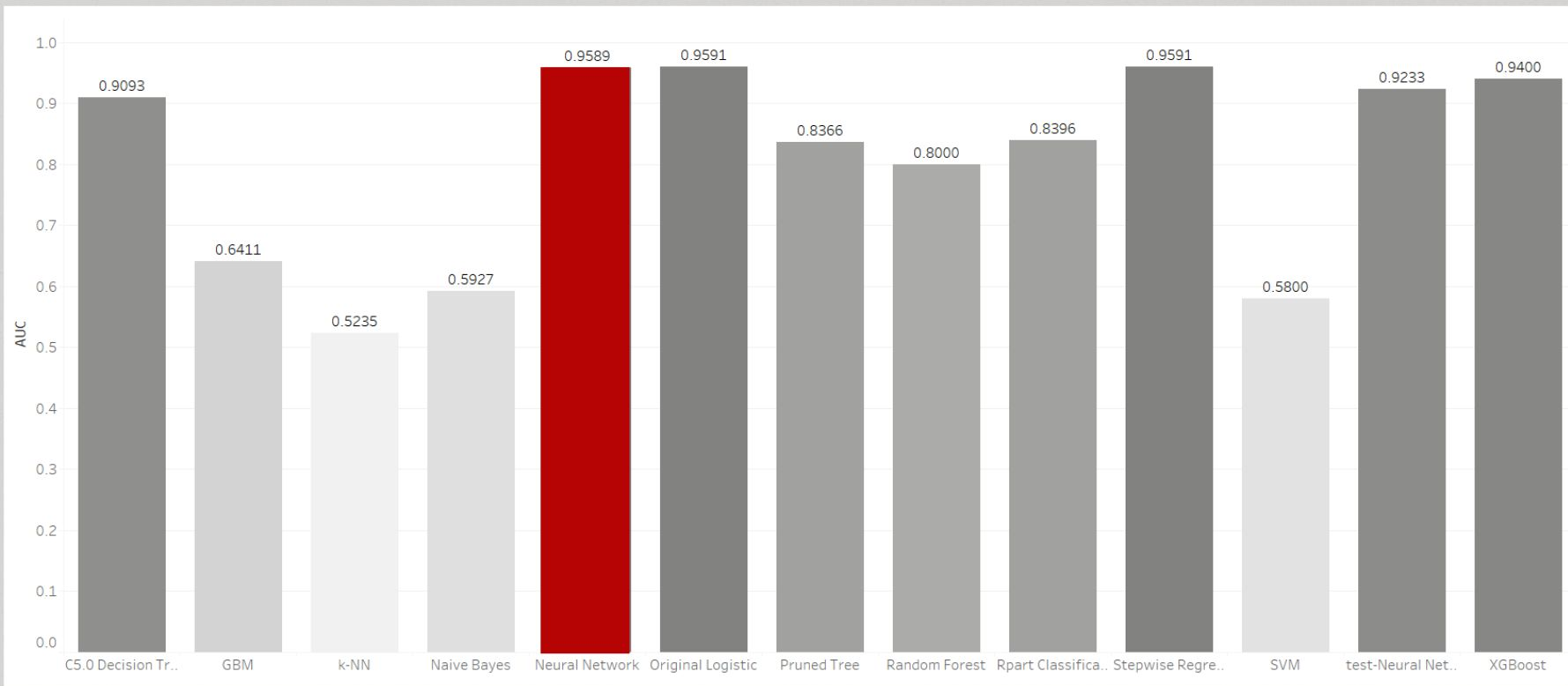Chose variables sharing correlations that are larger than 0.14
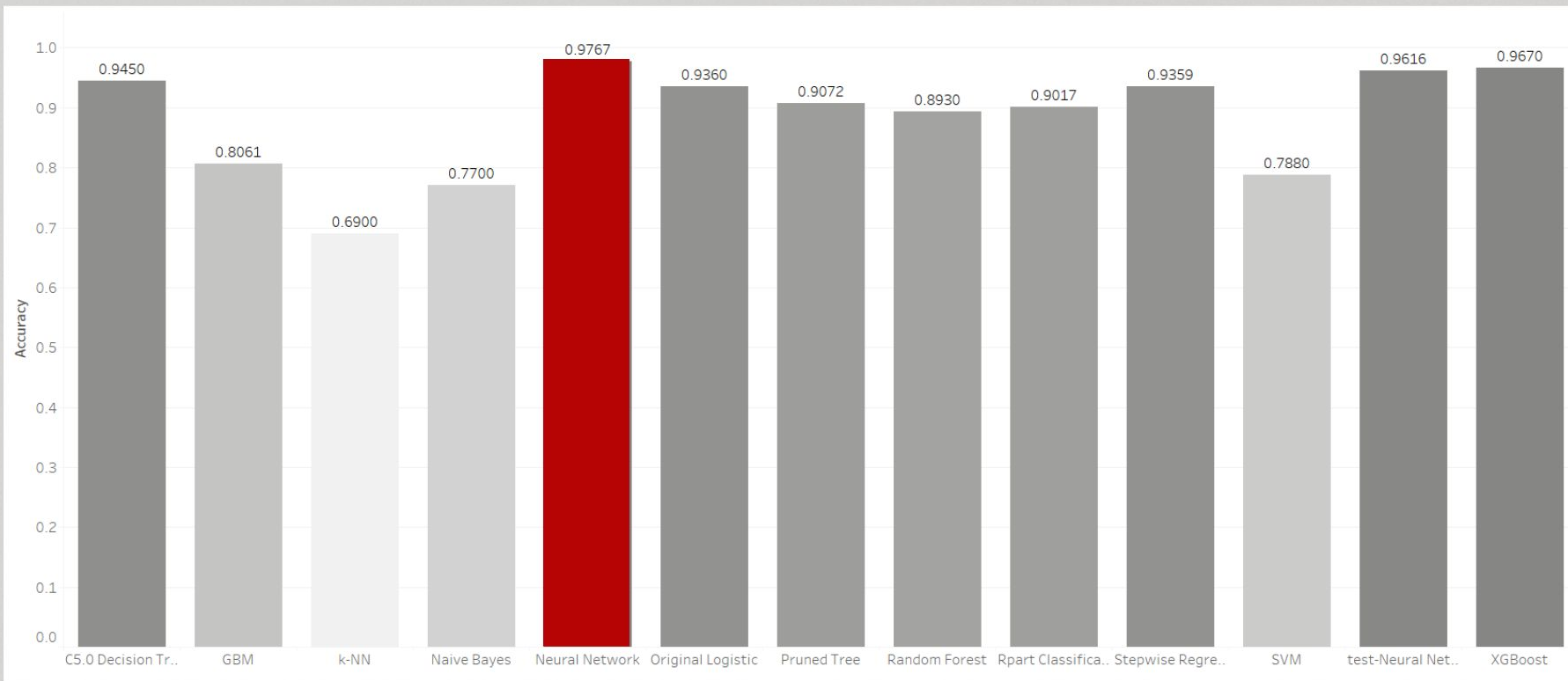
SENSITIVITY

Neural Network:0.9248
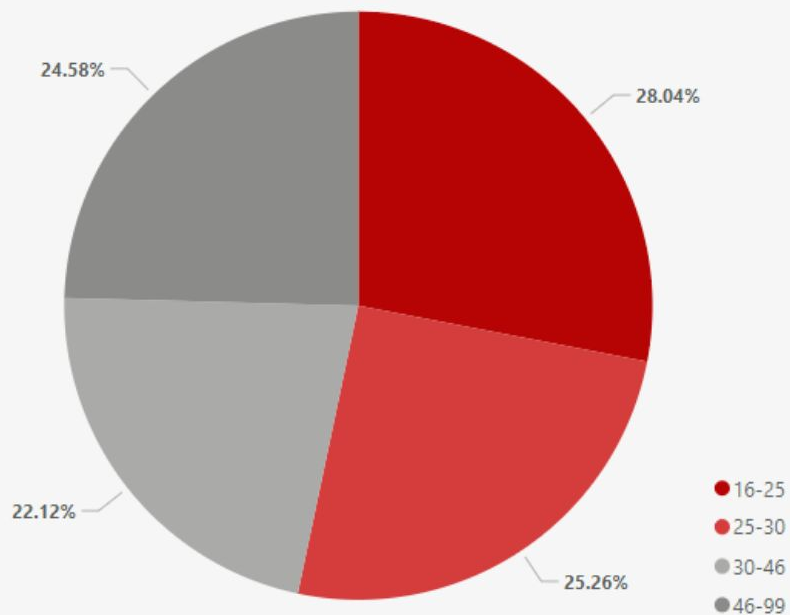
AUC

Neural Network:0.9589

ACCURACY

Neural Network:0.9767

INSIGHT

Past Purchases across Age Groups

24.58%
28.04%
22.12%
25.26%

- 16-25
- 25-30
- 30-46
- 46-99

Past Purchases Across Sections

20.57%
13.74%
13.23%
14.28%
38.18%

- Women Lingerie Section
- Women Swimwear Sectio
- Women Tailor Section
- Women Collection Sectio
- Divided Collection Sectio
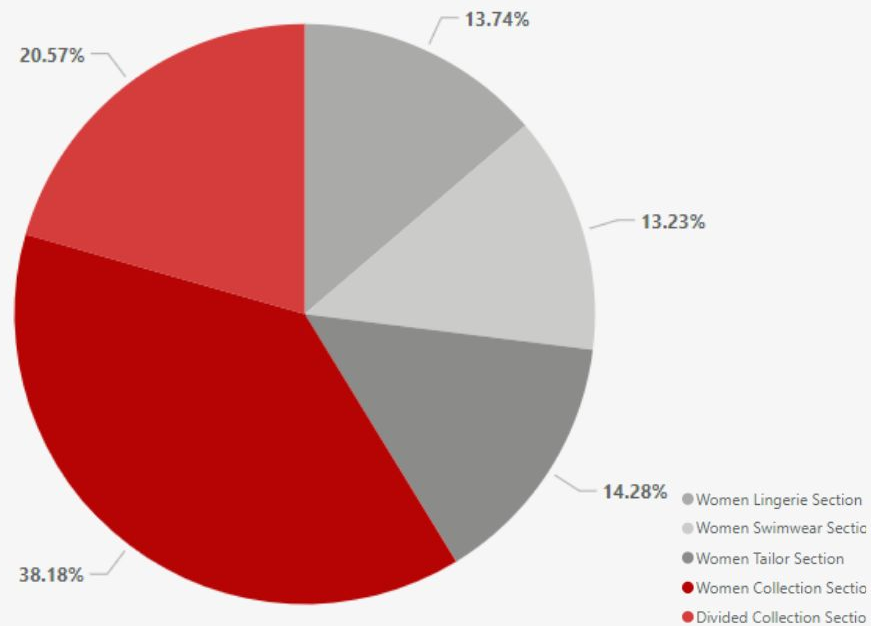
INSIGHT

Past Purchases Across Colors

- 45.76% Black
- 21.12% White
- 14.05% Blue
- 11.4% Beige
- 7.67% Pink

Legend:
- Black
- Beige
- Blue
- White
- Pink
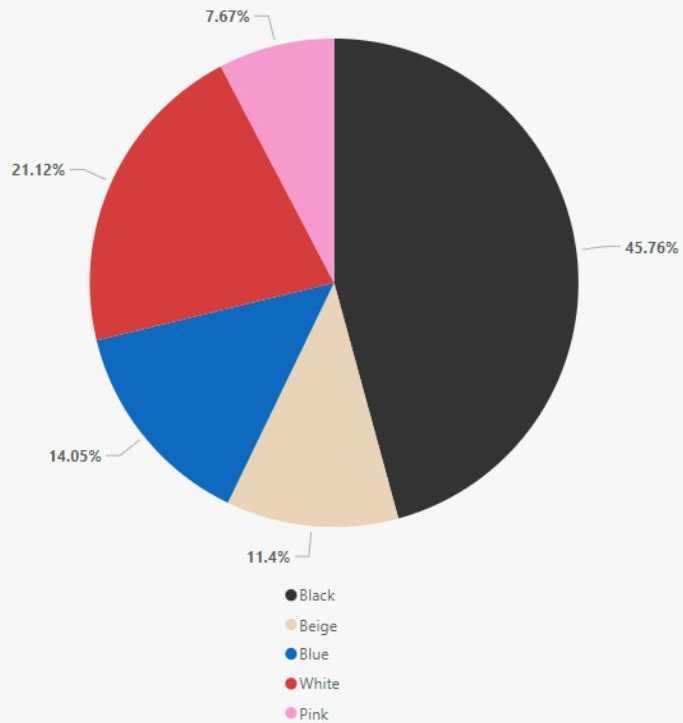
Past Purchases for Solid/Pattern Garments

- 85.94% Solid
- 14.06% Pattern

Legend:
- Solid
- Pattern
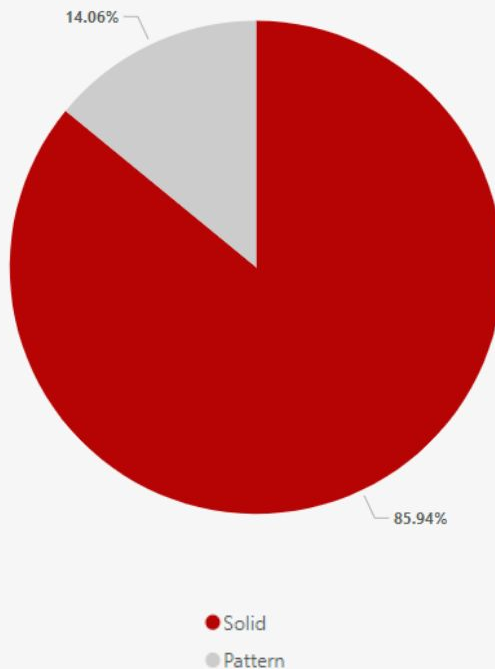
Past Purchases Across Garment Types

- 52.04% Upper Body Garments
- 30.9% Lower Body Garments
- 17.06% Full Body Garments

Legend:
- Lower Body Garments
- Upper Body Garments
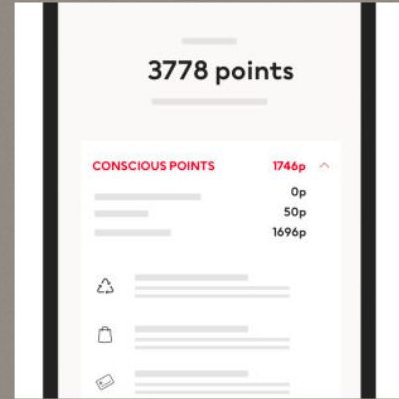- Full Body Garments
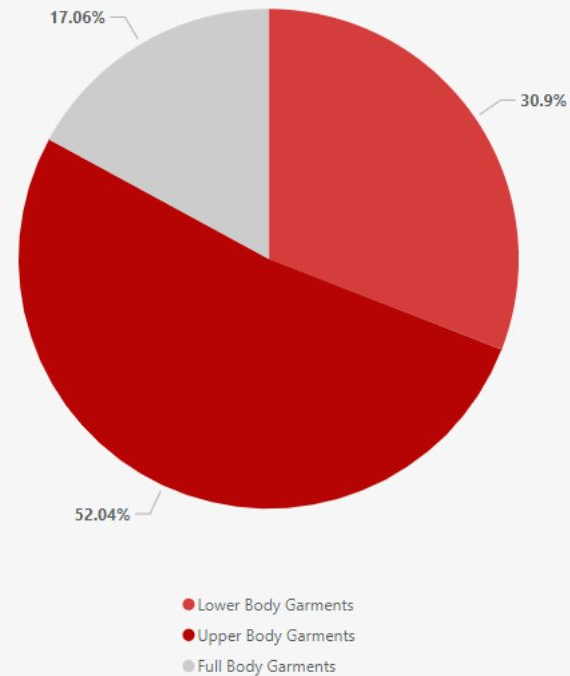
RECOMMENDTION

- Collaboration: Design and Sales Team
- Sensitivity: Better predicted retention and recommendations
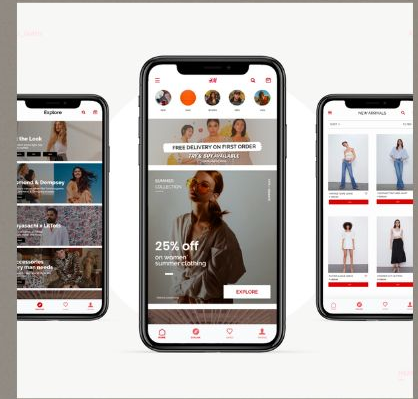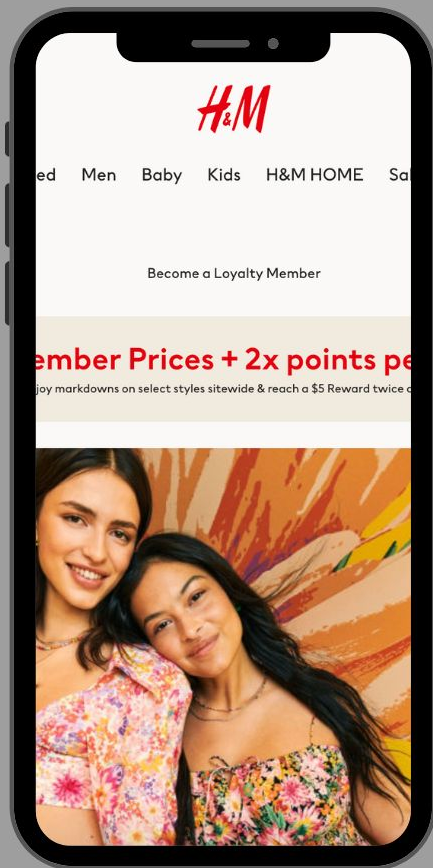

Design & Forecast

Sale & Planning

Loyalty Program

Personalize Recommendation

THANK YOU!

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