

Merchandising Analytics
Case Study

Product Content Optimization for Wayfair

Babson Analytics Hackathon 2022

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AGENDA



PROBLEMS

Fill gaps in digital content



REVENUE & CONVERSION RATE

Analysis and findings from the perspective of boosting revenue and conversion rate



CUSTOMER EXPERIENCE

Analysis and findings from the perspective of enhancing CX



RECOMMENDATIONS

Supplier outreach strategy and content strategy

PROBLEMS

Wayfair wants to leverage Rich Media by deriving insights from multiple datasets at the product class, supplier, and SKU level.

Challenges:

- Limited resources and time
- Large quantities of products and suppliers

Questions:

- Which content types should we add for different products?
- Which suppliers should we prioritize with respect to different product classes?
- Which content types or product classes should we focus on to enhance customer experience?



REVENUE & CONVERSION RATE

Find specific content types that certain suppliers should add

Product Class Segmentation

K-means clustering groups product classes into 4 clusters

revenue-focused

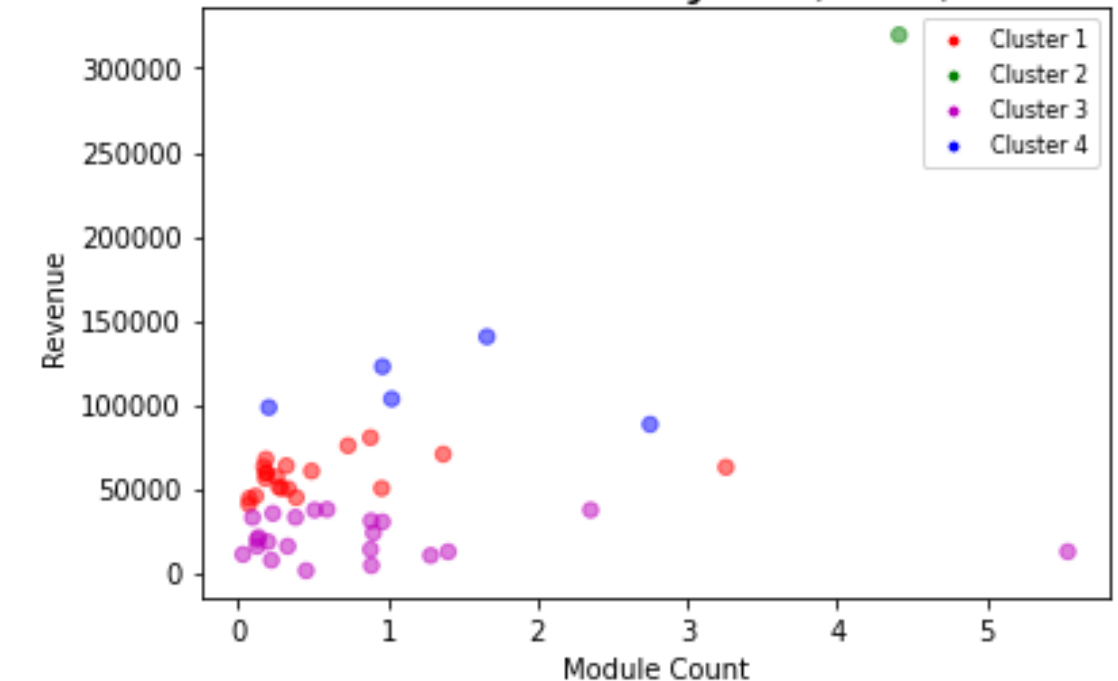
conversion-focused

Product-level metrics:

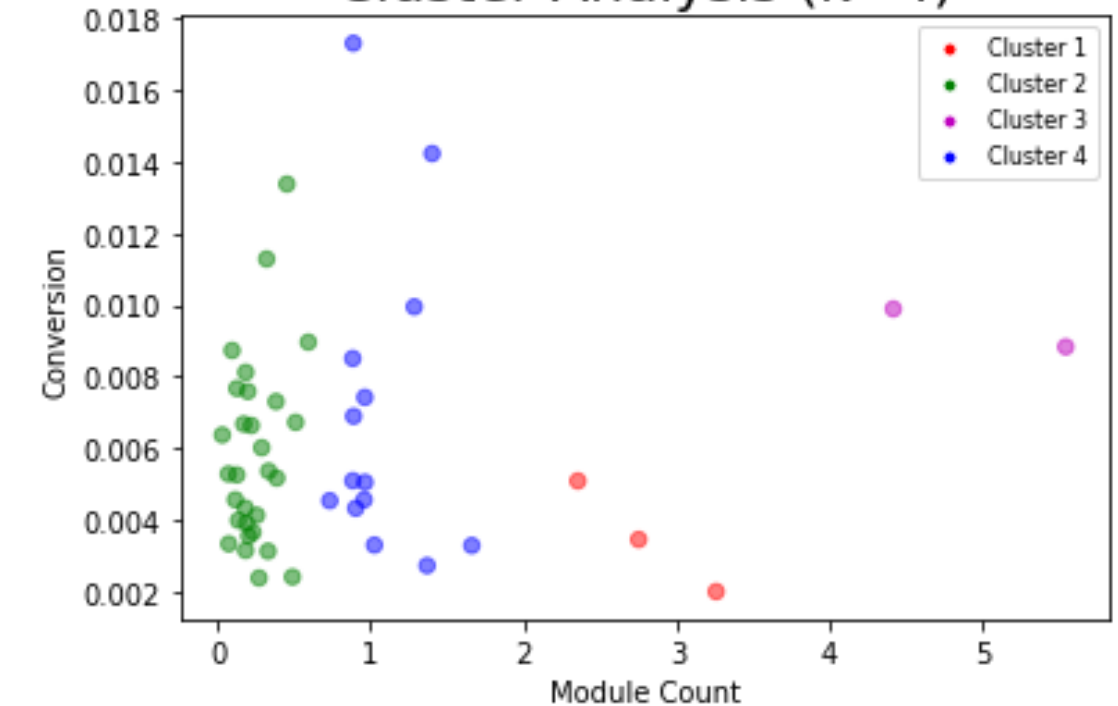
Revenue = 12-month Revenue + Projected Revenue

Conversion Rate = 30-day Number of Orders Placed / 30-day Traffic Amount

Cluster Analysis (k=4)



Cluster Analysis (k=4)



REVENUE & CONVERSION RATE

Find specific content types that certain suppliers should add

13 Product Classes

Common product classes when both average revenue and average conversion rate are considered

Content Types

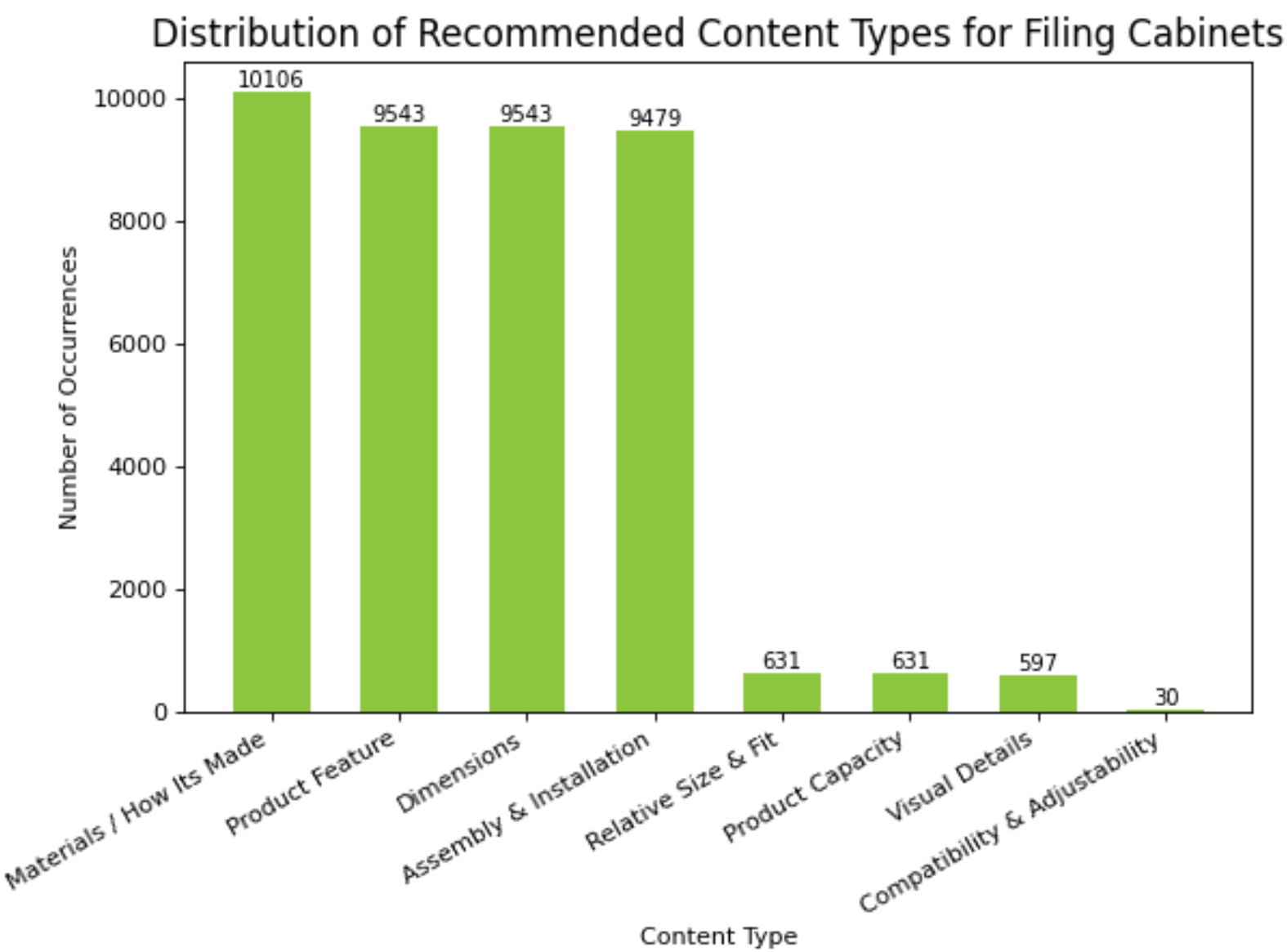
Based on customer research results, find the most wanted content types for each target product class

Suppliers

In terms of production scale (number of unique product offerings), find the top suppliers of each target product class

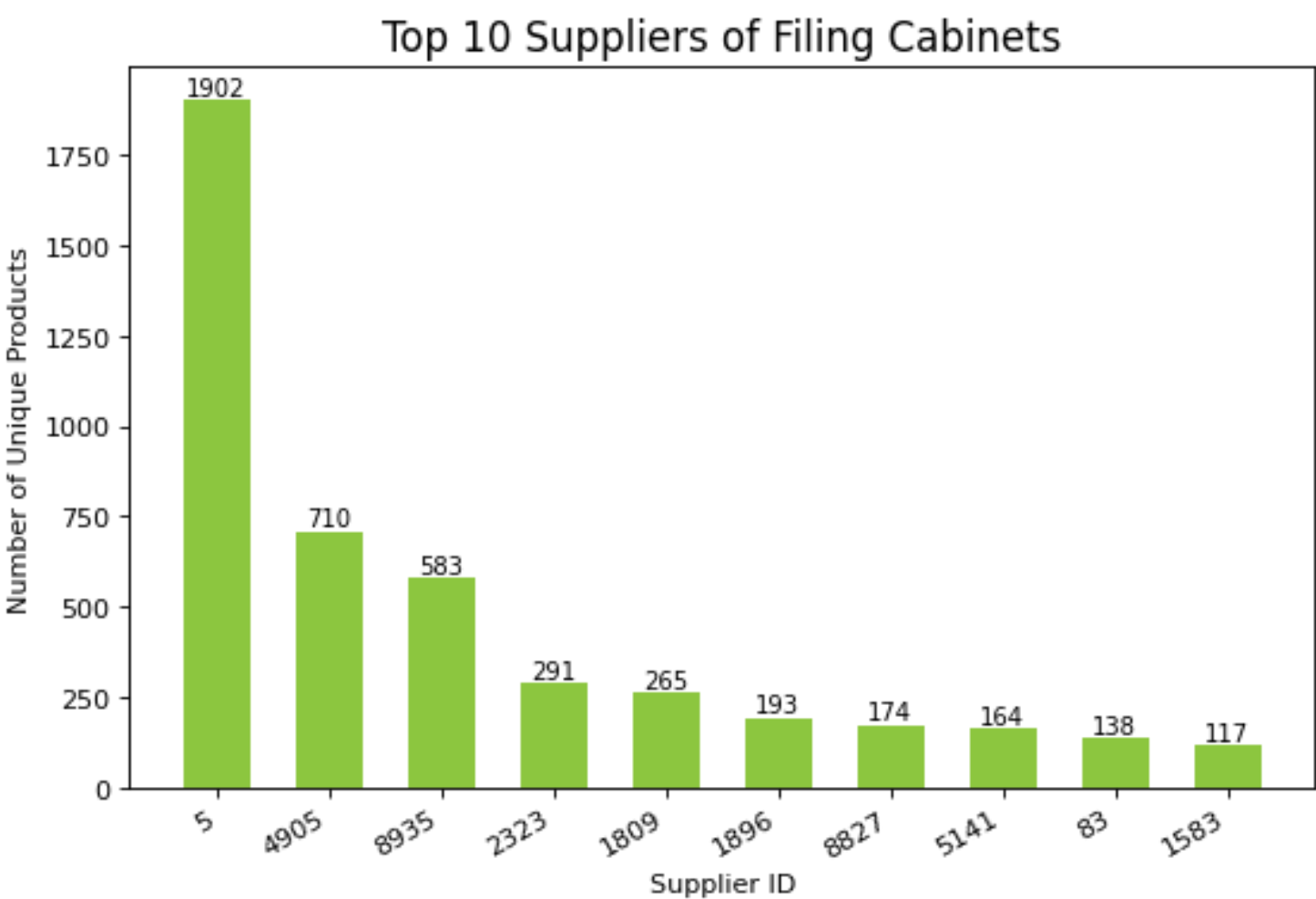
Add

Example 1: Filing Cabinets



Content Types

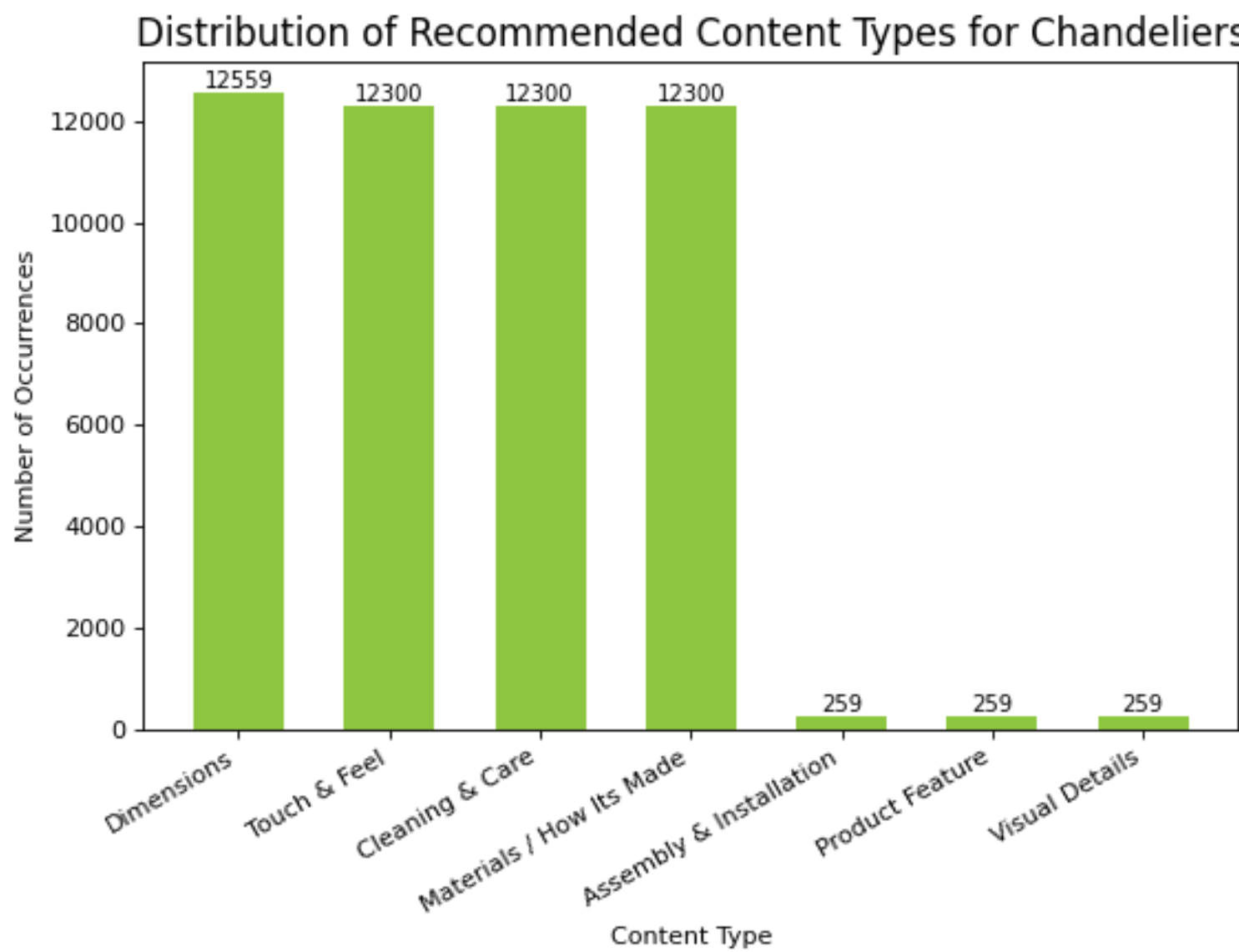
Materials/How It's Made, Product Feature, Dimensions, Assembly & Installation



Suppliers

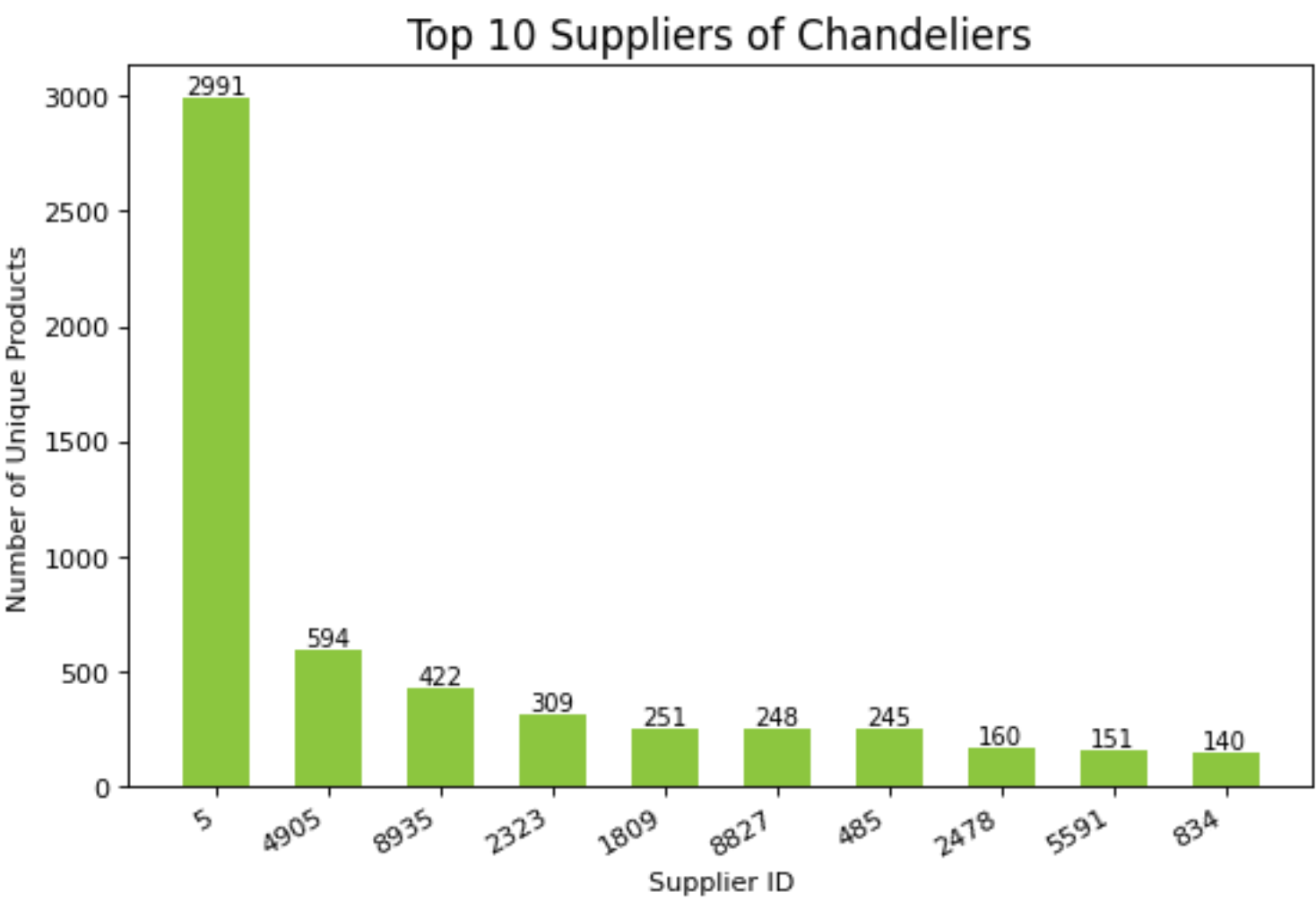
Suppliers with ID 5, 4905, 8935

Example 2: Chandeliers



Content Types

Dimensions, Touch & Feel, Cleaning & Care, Materials/How It's Made



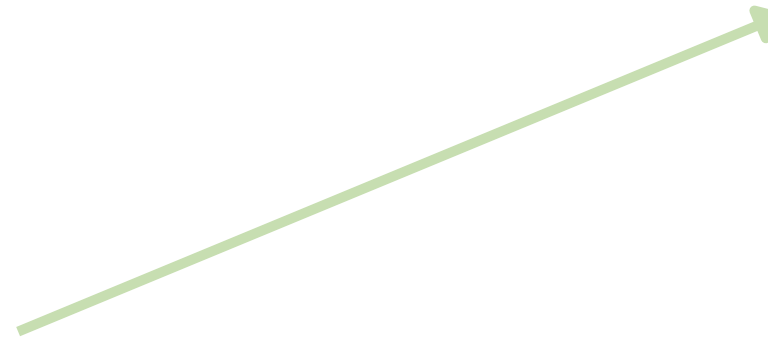
Suppliers

Suppliers with ID 5, 4905, 8935

CUSTOMER EXPERIENCE

Find specific content types and product classes to enhance CX

WayMore Content & Product Class



Kruskal-Wallis Test

Some content types are significantly different from others in terms of CX



Post-hoc Analysis

Find out special content types and product classes using the Wilcoxon rank-sum test



Effect Checking

Check the potential positive/negative effects on CX using group means

Product-level metric:

Customer Experience = Added to Cart / Traffic Amount

Assume that customers are driven by detailed product content to add a product to cart

CUSTOMER EXPERIENCE

Content Type	Number of Significant P-values	Effective?
About the Brand	0	No
Assembly & Installation	3	
Cleaning & Care	4	
Compatibility & Adjustability	4	
Dimensions	5	
Materials / How Its Made	7	
Product Capacity	1	
Product Feature	9	
Relative Size & Fit	5	
Safety Certifications & Details	1	
Touch & Feel	3	Yes
Visual Details	9	
Warranty & Guarantees	12	
What's In the Box	3	

Product Class	Number of Significant P-values	Effective?
Mattress Toppers and Pads	36	Yes
Tubs and Whirlpools	23	No
Wall Art	27	Yes
End Tables	18	Yes
Innerspring Mattresses	14	Yes
Desks	14	No
Kids Beds	14	Yes
Sofas	14	No
...	...	
Smokers	2	
Charcoal Grills	2	
Adjustable Beds	2	
Pantry Cabinets	1	
Electric Grills	0	

RECOMMENDATIONS

1. Focus on 13 product classes

Lack WayMore content and have more potential for growth

Accent Chests / Cabinets

Bar Stools

Bathroom Storage

Bedding Sets

Chandeliers

Electric Grills

End Tables

Filing Cabinets

Garage Storage Cabinets

Interior Doors

Reception Seating Chairs

Tubs And Whirlpools

Wall Art



2. Top suppliers of those product classes should add content of specific types

E.g. Suppliers with ID 5, 4905, 8935 should all add 4 specific modules to the PDPs of its filing cabinets AND 4 modules to the PDPs of its chandeliers

RECOMMENDATIONS

3. Have Warranty & Guarantees in PDPs

If customer experience is a major concern, we recommend having Warranty & Guarantees, Visual Details, and Product Feature in a product's PDP.

Unless otherwise specified, we do not recommend About the Brand, Safety Certifications & Details, or Product Capacity.



4. Drill down into interaction effects and effects of combinations

Customers are driven to add design related products to cart, such as Wall Art, when these products have more WayMore content.

In comparison, products focused more on utility, such as Desks and Sofas, might not be suitable for rich content.

Investigate the interaction effect between product usage and WayMore content on customer experience as well as if any combination of content types tend to drive more revenue.

THANK YOU!

A Special Thanks to Srihas Sampath

GitHub Repository: <https://github.com/JRWei2021/2022-Babson-Bentley-Hackathon>

