



Online Retail Company Customer Segmentation

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Problem/Need



A Online Retail company wants to know what should its marketing campaign be focusing on.

- Want to know the who are the potential valuable customers (VIP)
- Understand the retention rate
- Expand their profits

Impact Hypothesis



- Customer Segmentation can help us identify which customers has more potential a.k.a V.I.P
- Do promotions on the products that the V.I.P buys the most
- Cohort Analysis can give us the retention rate of all the customers , so we can do marketing campaign based on the life span of customers
- Cross-selling can create more profits to the company

Solution Path



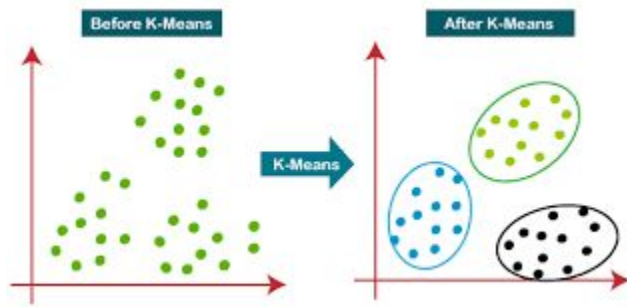
1. Exploratory Data Analysis : Evaluate the useful features from the dataset
2. Grouping the customers by using the RFM method (Recency, Frequency, Monetary),
3. Use Kmeans clustering algorithm to define the V.I.P class
4. Create a Cohort pivot table to see the retention rate per month
5. Use the mlxtend module to find the related items for cross-selling

Data

- Online Retail.xlsx from UCI database
- 541909 rows with 8 columns
- 4372 unique customers
- From Dec 2010 to Dec 2011



Algorithm

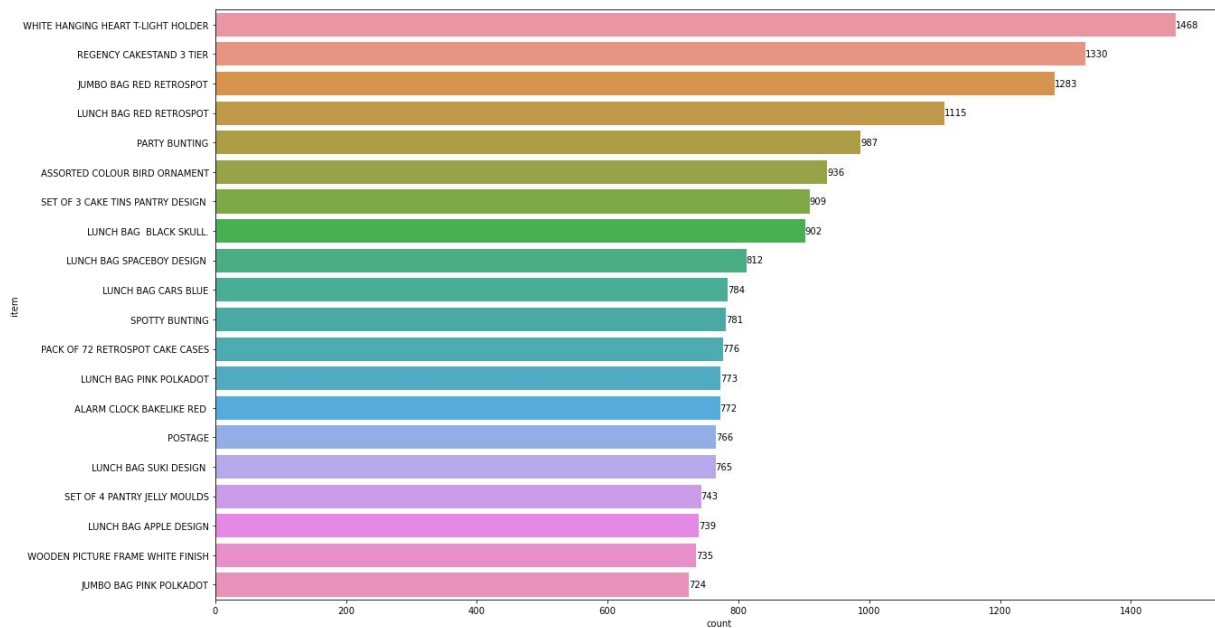


- K Means Clustering



- Apriori , Association Rule

Results - Products that V.I.P buys



[illegible]

Cross-Selling products

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction
160	(ROSES REGENCY TEACUP AND SAUCER, GREEN REGENC...	(PINK REGENCY TEACUP AND SAUCER)	0.034291	0.034291	0.024742	0.721519	21.040955	0.023566	3.467773
161	(PINK REGENCY TEACUP AND SAUCER)	(ROSES REGENCY TEACUP AND SAUCER, GREEN REGENC...	0.034291	0.034291	0.024742	0.721519	21.040955	0.023566	3.467773
158	(PINK REGENCY TEACUP AND SAUCER, ROSES REGENCY...	(GREEN REGENCY TEACUP AND SAUCER)	0.027954	0.042278	0.024742	0.885093	20.935089	0.023560	8.334770
163	(GREEN REGENCY TEACUP AND SAUCER)	(PINK REGENCY TEACUP AND SAUCER, ROSES REGENCY...	0.042278	0.027954	0.024742	0.585216	20.935089	0.023560	2.343497
21	(GREEN REGENCY TEACUP AND SAUCER)	(PINK REGENCY TEACUP AND SAUCER)	0.042278	0.034291	0.028388	0.671458	19.581072	0.026938	2.939376
...
154	(WOODEN PICTURE FRAME WHITE FINISH)	(WHITE HANGING HEART T-LIGHT HOLDER)	0.061550	0.121365	0.023092	0.375176	3.091313	0.015622	1.406213
63	(JUMBO BAG RED RETROSPOT)	(LUNCH BAG PINK POLKADOT)	0.106780	0.063808	0.020575	0.192683	3.019748	0.013761	1.159634
62	(LUNCH BAG PINK POLKADOT)	(JUMBO BAG RED RETROSPOT)	0.063808	0.106780	0.020575	0.322449	3.019748	0.013761	1.318306
61	(JUMBO BAG RED RETROSPOT)	(LUNCH BAG BLACK SKULL.)	0.106780	0.073010	0.020748	0.194309	2.661409	0.012952	1.150553
60	(LUNCH BAG BLACK SKULL.)	(JUMBO BAG RED RETROSPOT)	0.073010	0.106780	0.020748	0.284185	2.661409	0.012952	1.247837

Communication

- Visualizing the products that the V.I.P class buys the most can give an insight to the company on what products should be promoted
- The retention rate table gives us the customer lifespan, so the company can arrange its spending based on that
- Recommending the related products to the customer can gain more profits

Further step

- Discuss with the marketing team on what and when should the company promote
- Dig into the V.I.P group to see their buying habits
- Email the V.I.P customers with rewards to keep them as loyal customers