

Marketing Analytics

Demonstration of A Use Case of Cross-Selling

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Introduction

- ❑ Cross selling and Upselling is one of the most widely discussed concept in marketing analytics.
- ❑ Cross-sell involves the sale of multiple products offered by a single product/service provider to a new or existing customer.
- ❑ Up-sell is selling higher value products/services to an existing customer.
- ❑ Cross-selling is a core component of a customer centric relationship strategy and requires an integrated view of the customer. The success of a cross-sell program depends on enablers such as organizational commitment; well-defined business strategy; effective execution; regular monitoring; and effective targeting strategy.
- ❑ Cross-selling has proved to be a defining strategy for profitable growth across multiple sectors.

Benefits of Cross Selling

Cross Selling offers benefit to both the ends of marketing cycle i.e. customer and firm.

For the Firm

- Builds customer equity
- Differentiates from competition, enhances market position
- Promotes diversification and innovation
- Stimulates universe expansion and entry into new markets
- Balances growth between new and existing customers, low and high margin products and segments
- Enhance customer profitability
- Discourages customer attrition, improves customer loyalty

For the Customer

- Patronizes the brand
- Broadens choices of product and services
- Offers convenience through one-stop shopping, flexibility, consolidated bill and others
- Increases customer satisfaction
- Lowers price
- Encourages better customer service from relationship marketing

Industry Exemplars

E-commerce

- Ability to recognize customers one-on-one and effectively cross-sell across categories based on targeted recommendations.
- The decision engine is “collaborative filtering”, which recommends items deemed to be similar to the items that the “user or a similar like minded consumer” liked in the past.



Retail

- Segmentation based cross-sell and product diversification is the key enabler to reach top supermarket status in Britain.
- Targeting is based on differentiated profiles using segmentation and effective data usage of loyalty program, demographics and lifestyle attributes.



Financial Services

- Cross-sell is a core strategy for revenue growth, which has the highest cross-sell ratio in the industry at 6 products per household.
- The bank is an adopter of a successful bundling strategy backed by strong analytics support and effective tracking of cross-sell initiatives.



Cross-sell Offer Strategy

Bundling Strategy:

Bundling the sale of products or services together as a combined offering using demand for the primary product to sell the secondary product. An example is a package / combo deal. This combined product or offer is at a discount so that it is more attractive to buy the bundle than products standalone. For example – Selling a combo meal for McDonalds is a good example of bundled sale.

Sequential cross-sell:

It involves selling different products or services at different points of the customer's tenure with the firm.

A good example of this is life-stage marketing, i.e. if a customer has bought a printer from you 6 months back, it might be time to check if he needs a cartridge.

Cross-Sell Process

The cross-sell process is outlined step by step in the following figure. Step 1, 4 and 5 will be elaborated upon subsequently.



Online Retail Case Study

- ❑ **Objective:** Build a marketing analytics model for Customer Segmentation and Effective Cross Selling for an online retail store.
- ❑ **Customer segmentation:** Customer segmentation is the problem of uncovering information about a firm's customer base, based on their interactions with the business. In most cases this interaction is in terms of their purchase behavior and patterns. We explore some of the ways in which this can be used.
- ❑ **Market basket analysis:** Market basket analysis is a method to gain insights into granular behavior of customers. This is helpful in devising strategies which uncovers deeper understanding of purchase decisions taken by the customers. This is interesting as a lot of times even the customer will be unaware of such biases or trends in their purchasing behavior.

Online Retail Case Study

❑ **Data Set Information:** This is a transnational data set which contains all the transactions occurring between 01/12/2010 and 09/12/2011 for a UK-based and registered non-store online retail. The company mainly sells unique all-occasion gifts. Many customers of the company are wholesalers.

❑ The dataset can be downloaded from <http://archive.ics.uci.edu/ml/datasets/online+retail#>

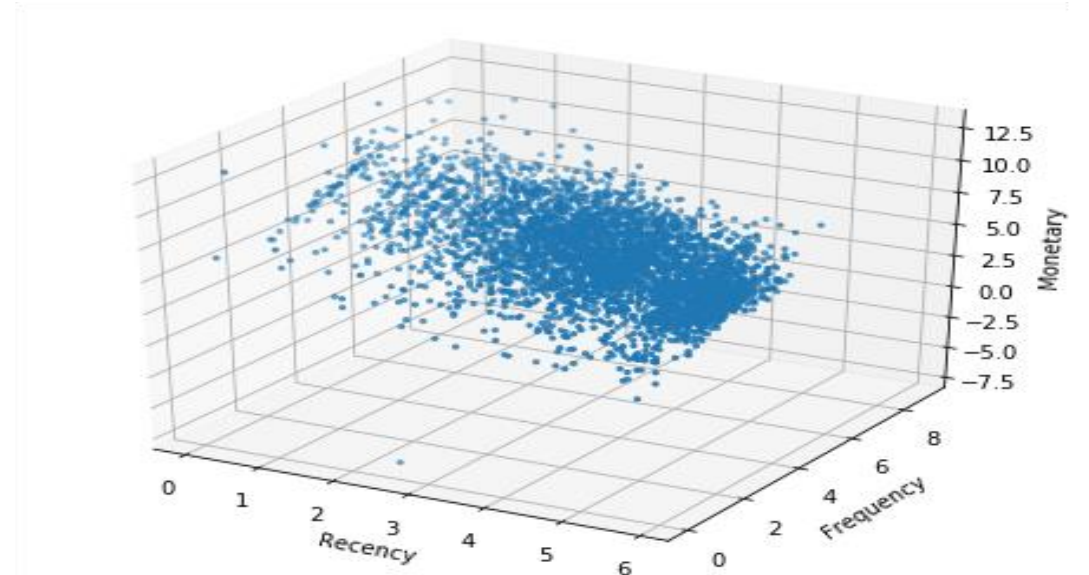
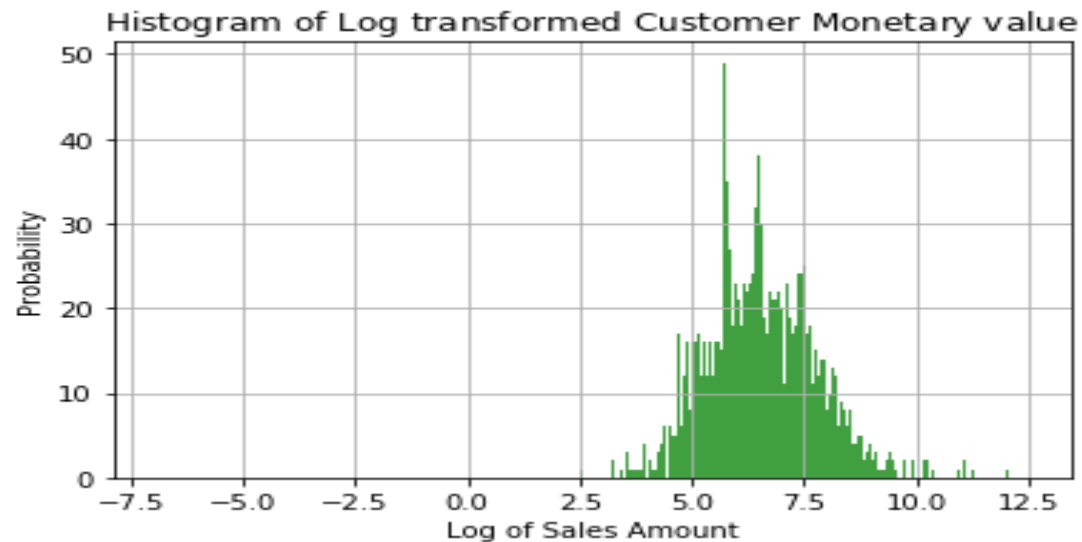
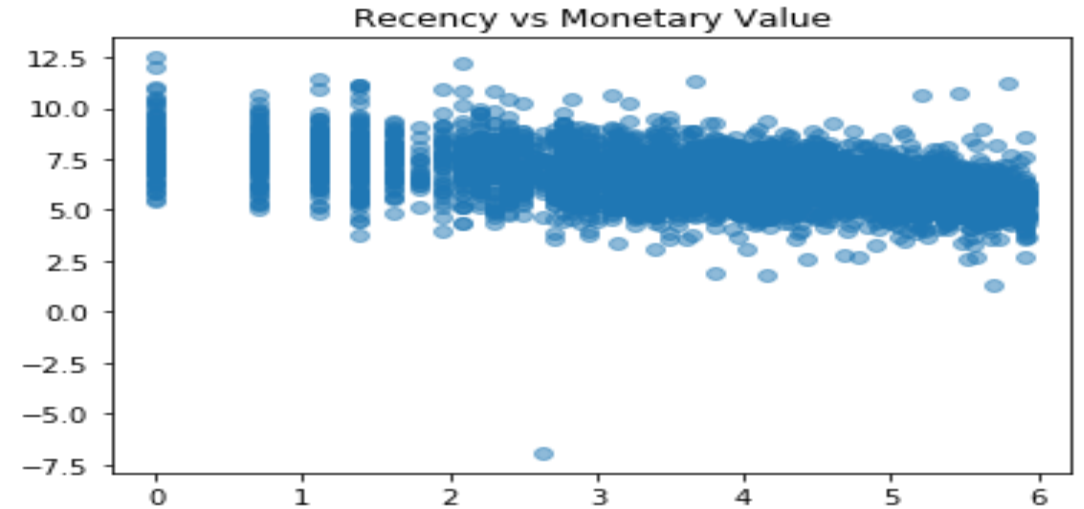
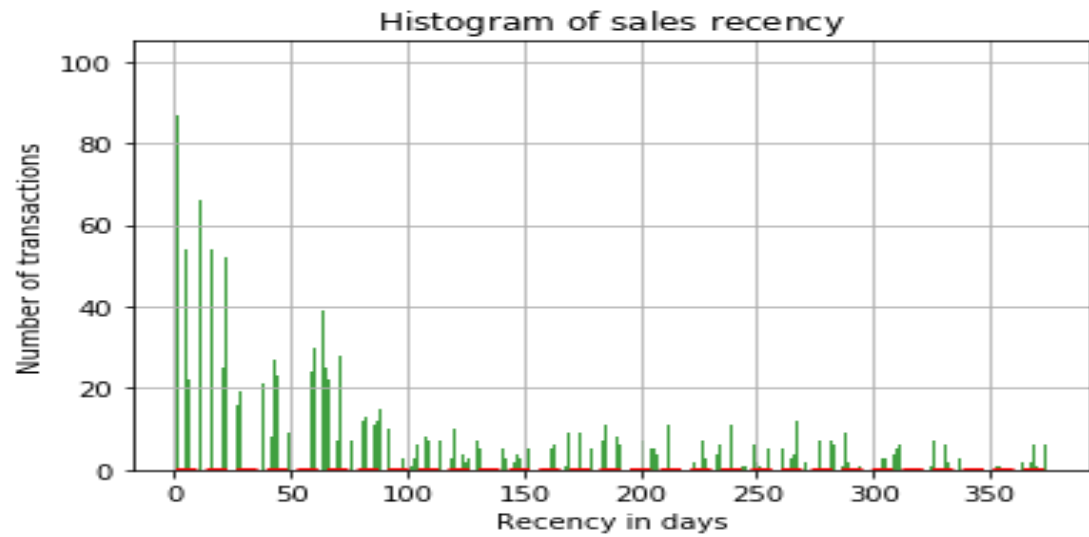
❑ The dataset has 541,909 rows and 8 columns.

❑ **Attribute Information:**

1. InvoiceNo: Invoice number. Nominal, a 6-digit integral number uniquely assigned to each transaction. If this code starts with letter 'c', it indicates a cancellation.
2. StockCode: Product (item) code. Nominal, a 5-digit integral number uniquely assigned to each distinct product.
3. Description: Product (item) name. Nominal.
4. Quantity: The quantities of each product (item) per transaction. Numeric.
5. InvoiceDate: Invoice Date and time. Numeric, the day and time when each transaction was generated.
6. UnitPrice: Unit price. Numeric, Product price per unit in sterling.
7. CustomerID: Customer number. Nominal, a 5-digit integral number uniquely assigned to each customer.
8. Country: Country name. Nominal, the name of the country where each customer resides.

Online Retail Case Study

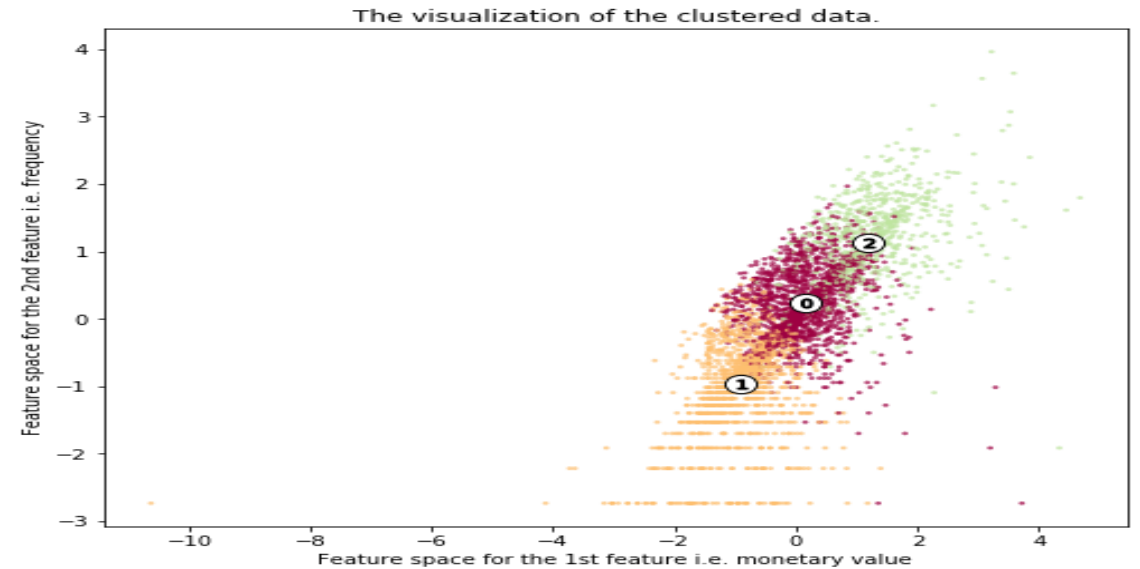
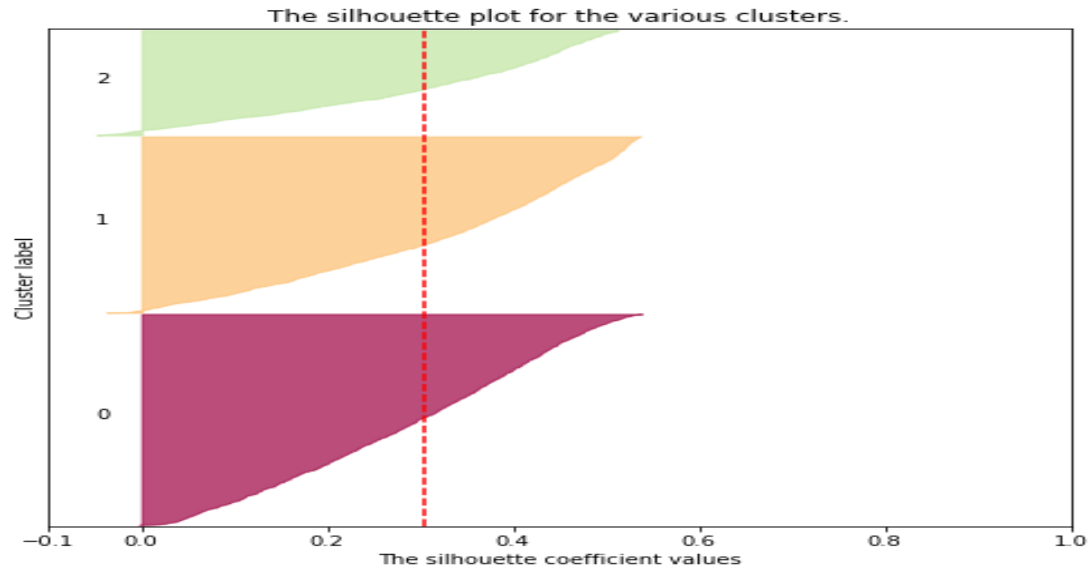
Exploratory Data Analysis



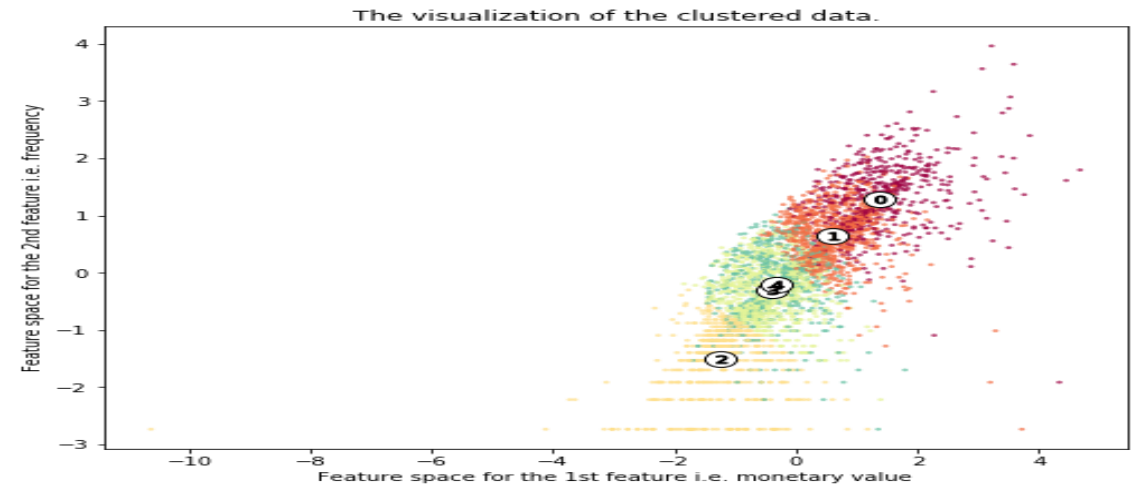
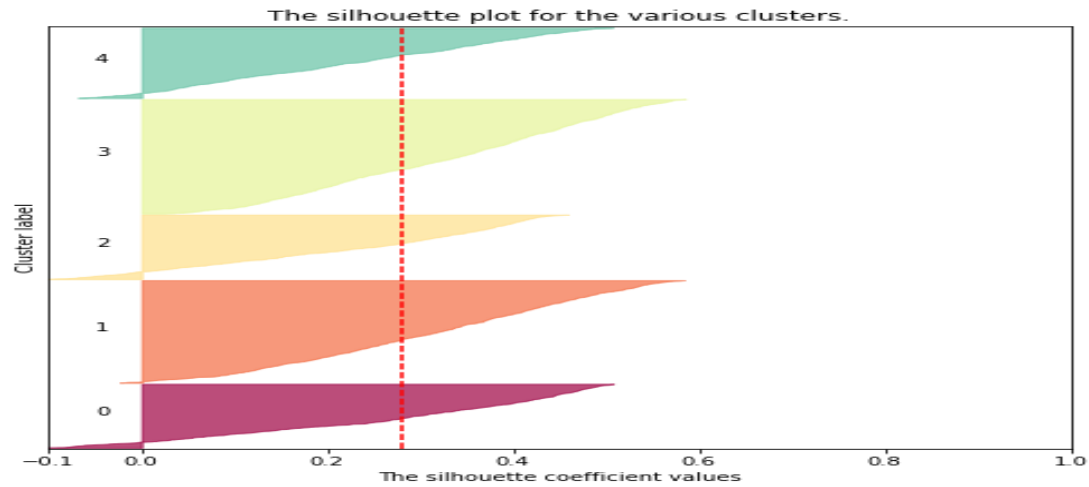
Online Retail Case Study

Cluster Analysis

Silhouette analysis for KMeans clustering on sample data with $n_clusters = 3$

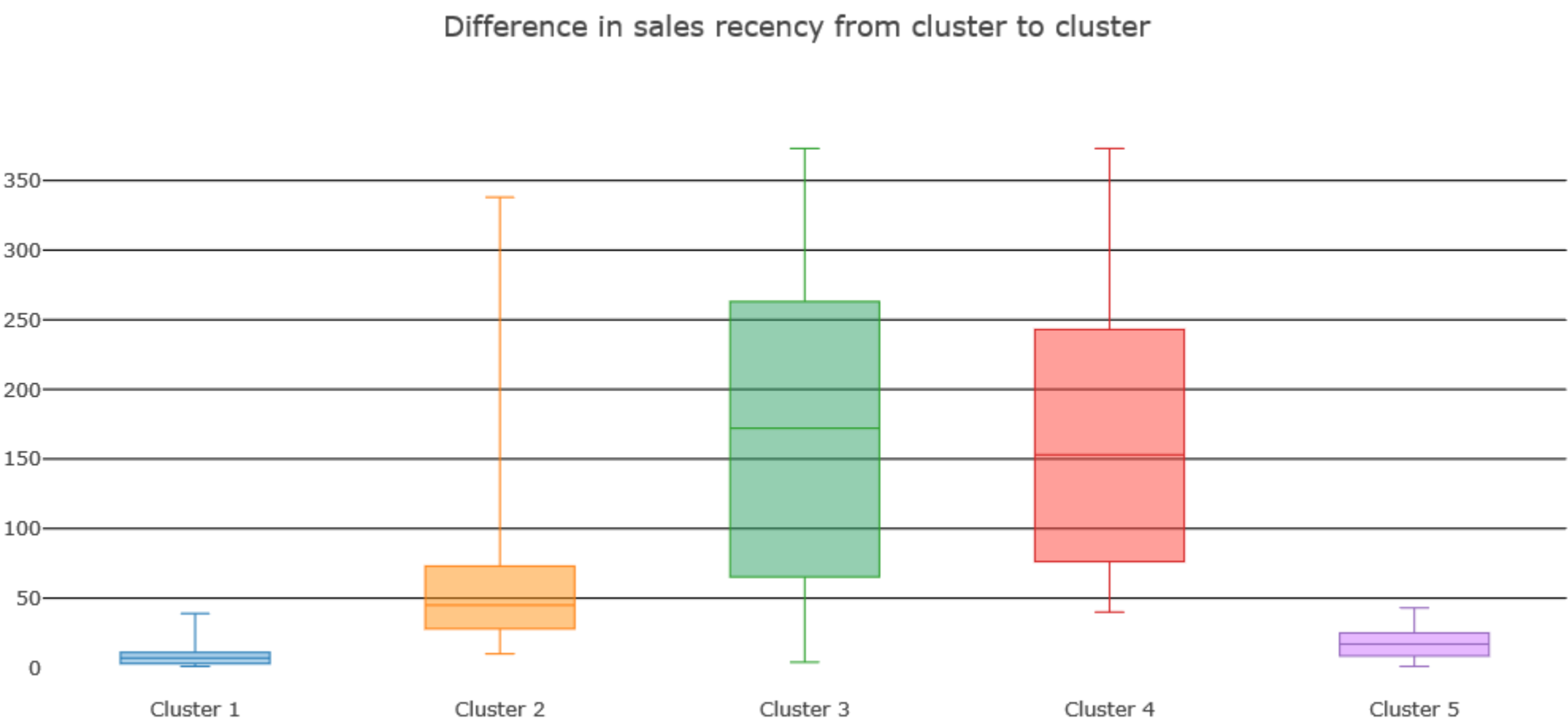


Silhouette analysis for KMeans clustering on sample data with $n_clusters = 5$



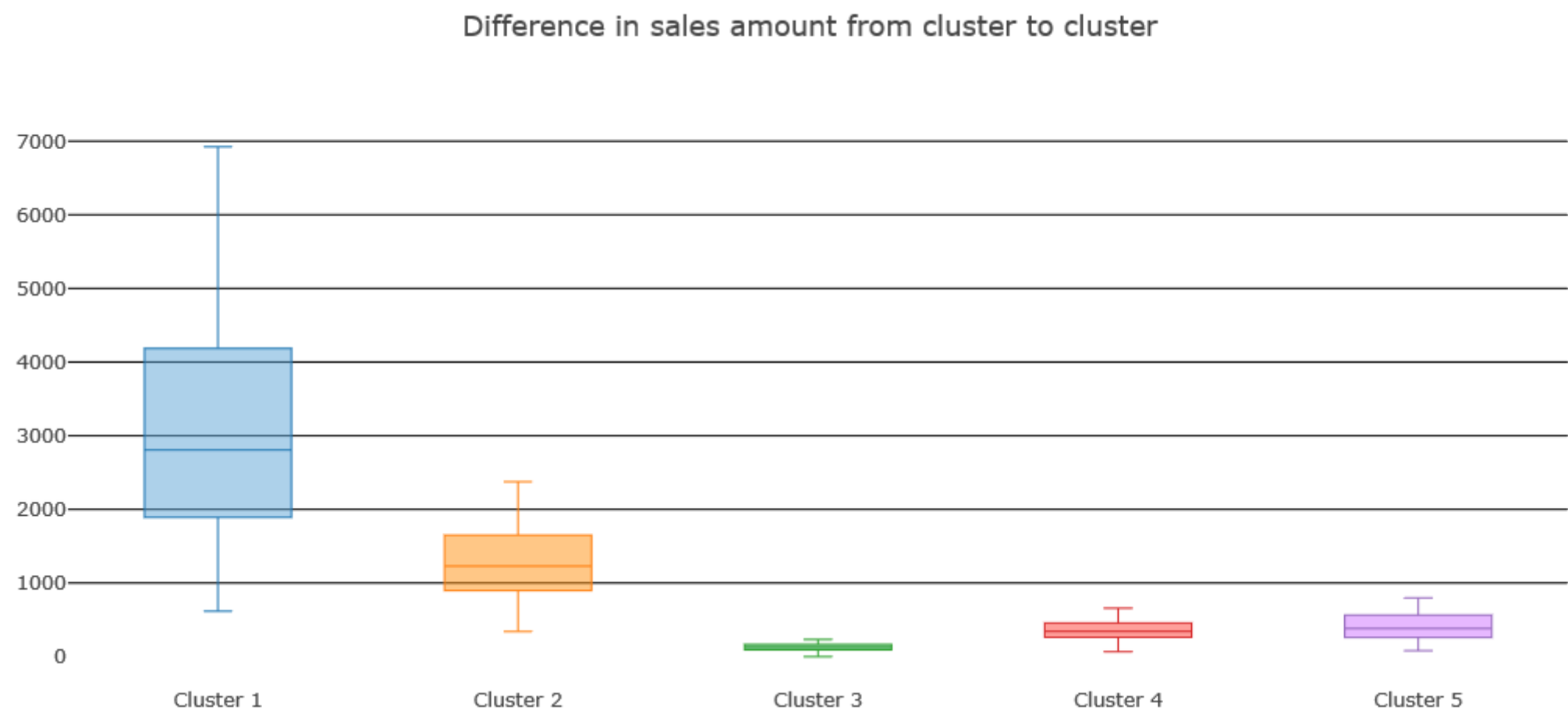
Online Retail Case Study

Cluster Analysis



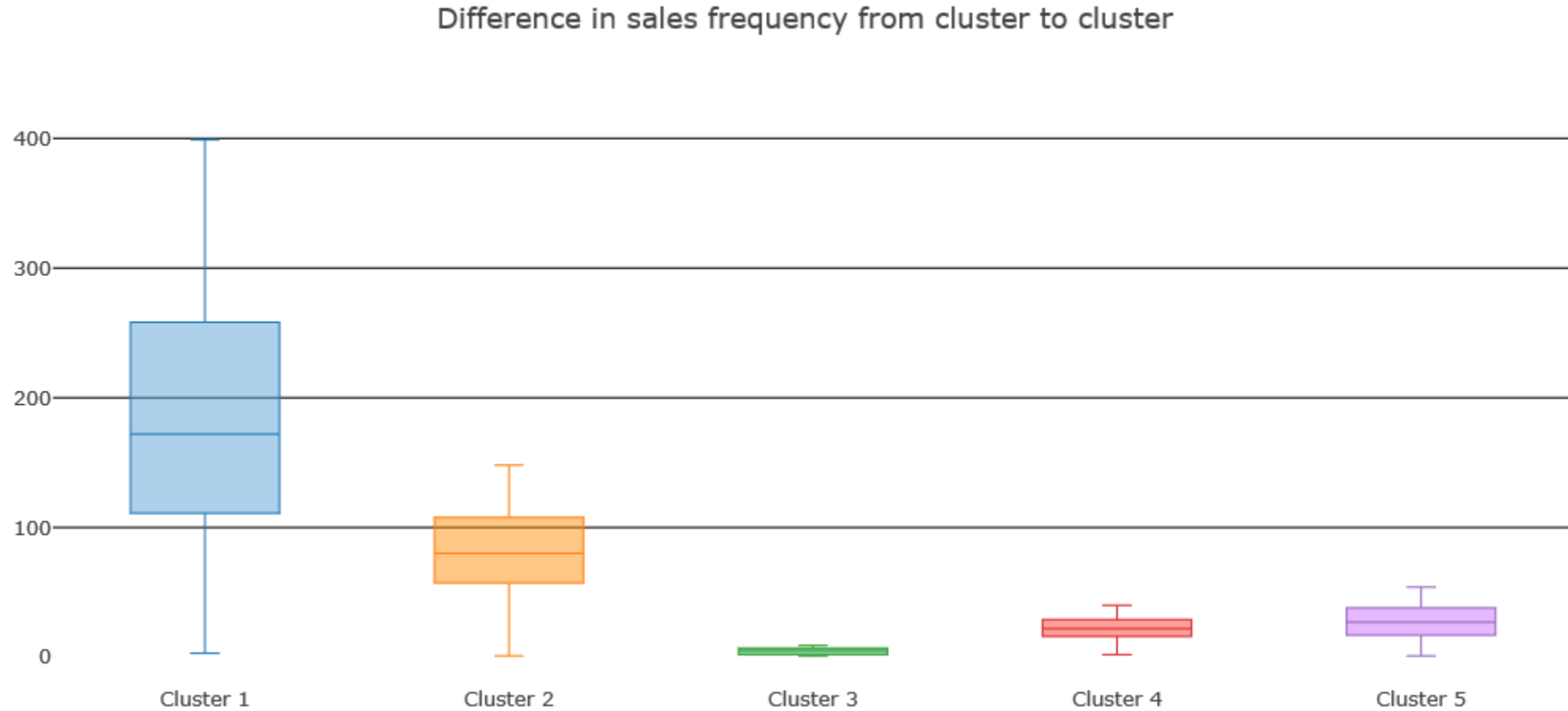
Online Retail Case Study

Cluster Analysis



Online Retail Case Study

Cluster Analysis



Online Retail Case Study

Cross Selling Strategies

❑ The below table shows 05 rows from association rules table with the following details: consequent, antecedent, Support, confidence and lift.

- Consequent— The item bought next.
- Antecedent— The item bought before Consequent.
- Support— Support is an indication of how frequently the itemset appears in the dataset.
- Confidence— Confidence is an indication of how often the rule has been found to be true.
- Lift— The ratio of the observed support to that expected if Antecedent and Consequent were independent.

❑ For the first row, it says that a person who buys 'White Hanging Heart' will also buy 'Pack of 72 Retrospot Cake' with 97% confidence.

consequent	antecedent	support	confidence	lift
PACK OF 72 RETROSPOT CAKE CASES	WHITE HANGING HEART T-LIGHT HOLDER, REGENCY CAKESTAND 3 TIER, NATURAL SLATE HEART CHALKBOARD	145	0.971014	5.394404
PAPER CHAIN KIT 50'S CHRISTMAS	WHITE HANGING HEART T-LIGHT HOLDER, REGENCY CAKESTAND 3 TIER, NATURAL SLATE HEART CHALKBOARD	94	0.597701	4.341428
JUMBO SHOPPER VINTAGE RED PAISLEY	WHITE HANGING HEART T-LIGHT HOLDER, PAPER CHAIN KIT 50'S CHRISTMAS	384	0.879310	4.218819
LUNCH BAG BLACK SKULL.	WHITE HANGING HEART T-LIGHT HOLDER, PACK OF 72 RETROSPOT CAKE CASES, LUNCH BAG RED RETROSPOT	227	0.852459	4.078157
JUMBO STORAGE BAG SUKI	WHITE HANGING HEART T-LIGHT HOLDER, SET OF 3 CAKE TINS PANTRY DESIGN , JUMBO BAG PINK POLKADOT	405	0.852459	4.016191

Thank You