Ankita Vashisht

**Using the RFM, analysis the retail\_rfm.csv file attached and good explanation for results.**

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Haven’t installed dplyr, bcz it was already installed.

So, I have installed library.

Set seed to stop iteration.

These are main codes and their explanations-

ntile: Divides data into n equally sized groups.

recency\_days\*-1: Multiplying by -1 ensures that more recent purchases (lower days) have higher scores.

**for (r in 1:groups) {**

**r\_groups[[r]] <- filter(ankita, ankita$recency\_score\_seq == r)**

**r\_groups[[r]]$frequency\_score\_seq <- ntile(r\_groups[[r]]$number\_of\_orders, groups)**

Filtering**:** filter(ankita, ankita$recency\_score\_seq == r) filters the ankita dataset to get all customers who have a recency score of r.

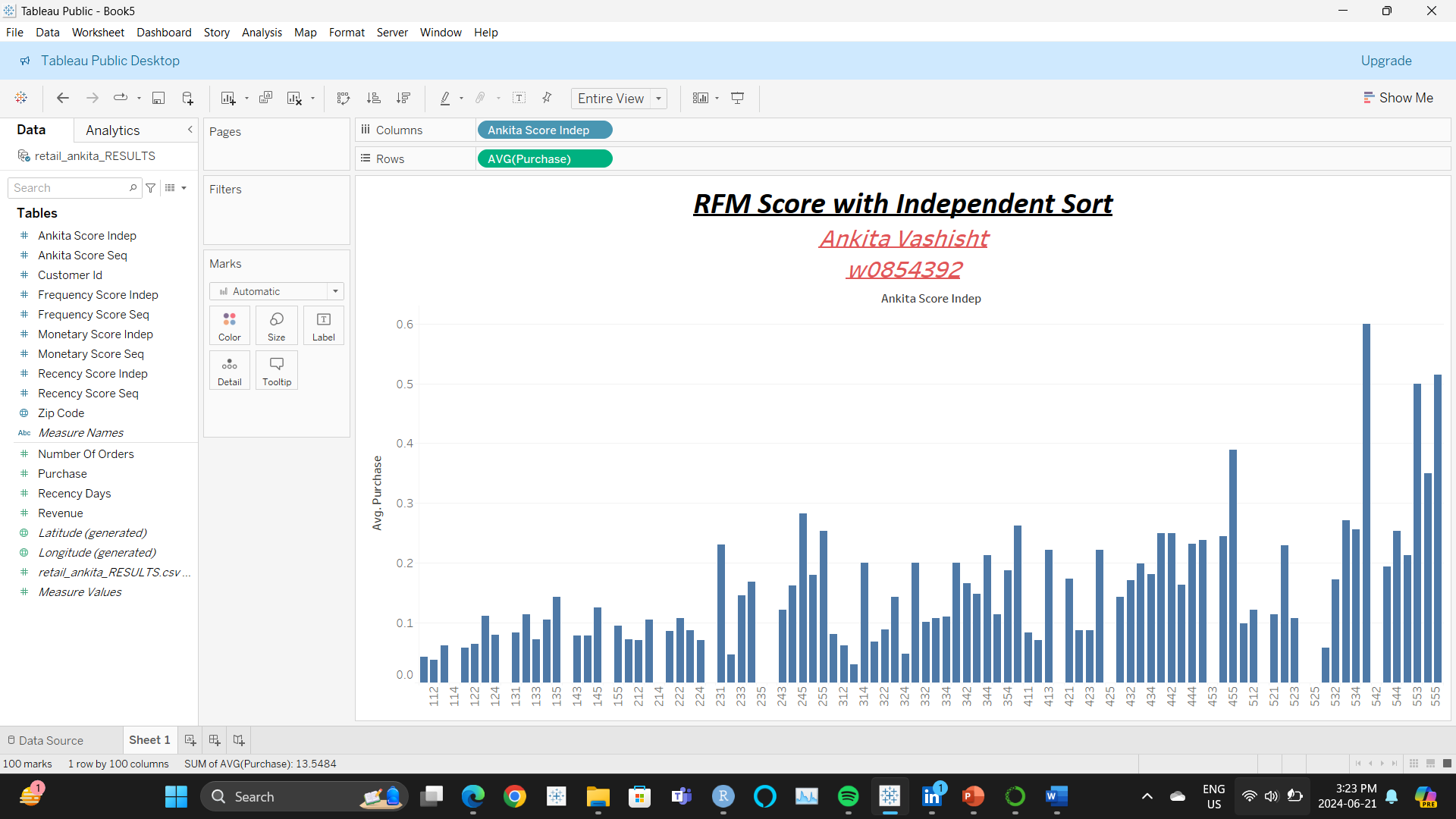
Frequency Scoring**:** ntile(r\_groups[[r]]$number\_of\_orders, groups) assigns frequency scores within each recency group.

**temp <- bind\_rows(temp, rf\_groups[[m]])**

**}**

**}**

bind\_rows**:** Appends each subgroup (filtered by recency and frequency and scored by monetary to the temp dataframe.

****

Purpose:

The Tableau visualization displays the average purchase amount for each RFM score, sorted independently.

Key Elements:-

1. Data Source:

- A CSV file named `retail\_ankita\_RESULTS.csv` containing RFM analysis results.

2. Fields Used:

- `Ankita Score Indep`: The RFM score based on independent sorting.

- `Purchase`: The purchase amount metric.

3. Visualization:

- Columns Shelf: `Ankita Score Indep` (RFM scores along the x-axis).

- Rows Shelf: `AVG(Purchase)` (average purchase amount along the y-axis).

- Chart Type: Bar chart showing the distribution of average purchases across different RFM scores.

4. Title and Labels:

- The title reads "RFM Score with Independent Sort".

- Additional text includes the creator's name "Ankita Vashisht" and ID "w0854392".

**A screenshot of a computer

Description automatically generated**

Purpose:

The Tableau visualization displays the average purchase amount for each RFM score, sorted sequentialy.

2. Fields Used:

- `Ankita Score Seq`: The RFM score based on sequential sorting.

- `Purchase`: The purchase amount metric.

3. Visualization:

- Columns Shelf: `Ankita Score seq` (RFM scores along the x-axis).

- Rows Shelf: `AVG(Purchase)` (average purchase amount along the y-axis).

- Chart Type: Bar chart showing the distribution of average purchases across different RFM scores.

4. Title and Labels:

- The title reads "RFM Score with sequantial Sort".

- Additional text includes the creator's name "Ankita Vashisht" and ID "w0854392".

**A screenshot of a computer

Description automatically generated**

This Tableau visualization shows the distribution of purchasers across different segments based on their RFM (Recency, Frequency, Monetary) scores using an independent sort. Each cell represents a unique combination of these scores, and the values and colors in the cells indicate the percentage of purchasers.

1. Rows: Represent combinations of Recency and Frequency scores.

Columns: Represent Monetary scores.

2. Cells:

Each cell represents a unique combination of RFM scores.

The value in each cell shows the percentage of purchasers for that RFM combination.

3. Color representations-

Red Cells: Indicate a higher percentage of purchasers.

White Cells: Indicate an average percentage of purchasers.

Green Cells: Indicate a lower percentage of purchasers.

4. Segments Representations-

High-Value Segments: Dark red cells represent high-value segments with a higher percentage of purchasers. These are ideal for targeted marketing efforts.

Low-Value Segments: Green cells represent low-value segments with a lower percentage of purchasers. Different strategies might be needed for these segments.

Neutral Segments: White cells represent average purchasing behavior.

**A screenshot of a computer

Description automatically generated**

**Purchased converted into Average.**

3. Color representations-

Red Cells: Indicate a higher percentage of purchasers.

White Cells: Indicate an average percentage of purchasers.

Green Cells: Indicate a lower percentage of purchasers.

4. Segments Representations-

High-Value Segments: Dark red cells represent high-value segments with a higher percentage of purchasers. These are ideal for targeted marketing efforts.

Low-Value Segments: Green cells represent low-value segments with a lower percentage of purchasers. Different strategies might be needed for these segments.

Neutral Segments: White cells represent average purchasing behavior.

**A screenshot of a computer

Description automatically generated**

**Purchase - count**

3. Color representations-

Red Cells: Indicate a higher percentage of purchasers.

White Cells: Indicate an average percentage of purchasers.

Green Cells: Indicate a lower percentage of purchasers.

4. Segments Representations-

High-Value Segments: Dark red cells represent high-value segments with a higher percentage of purchasers. These are ideal for targeted marketing efforts.

Low-Value Segments: Green cells represent low-value segments with a lower percentage of purchasers. Different strategies might be needed for these segments.

Neutral Segments: White cells represent average purchasing behavior.

**A screenshot of a computer

Description automatically generated**

**This (above) graph represents the percentage of purchasers in each cell using sequential sort.**

Darker cells to identify high-value segments with a higher percentage of purchasers.

Lighter cells represent lower-value segments where fewer purchasers are located.

This information to tailor marketing strategies and allocate resources more effectively.

**A screenshot of a computer

Description automatically generated**

**This (above) graph represents the count of purchasers in each cell using sequential sort.**

**A screenshot of a computer

Description automatically generated**

**This (above) graph represents the percentage of customers in each cell using sequential sort.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Profitability Analysis** | **Random Targeting** | **Targeted: Independent Sort RFM** | **Targeted: Sequential Sort RFM** |
| **Number of Customers** | **10,000** | **10,000** | **10,000** |
| **number targated** | **10,000** | **4,459** | **4,480** |
| **% of customers targeted** | **100.00%** | **44.59%** | **44.80%** |
| **number of buyers** | **1,779** | **1,314** | **1,306** |
| **response rate** | **17.79%** | **29.47%** | **29.15%** |
| **revenues** | **71,160** | **52,560.00** | **52,240** |
| **cost of goods sold** | **34156.80%** | **25228.8** | **25,075.20** |
| **shipping** | **10,674** | **7884** | **7,836** |
| **targeted marketing** | **20,000** | **8918** | **8,960** |
| **profit** | **6,329.20** | **10529.2** | **10,339** |
| **ROMI** | **32** | **118.07** | **115** |

**Revenue** =

(number of bottles sold) x (each bottle’s price paid by the customer)

**Cost of goods sold (COGS) =**

price the retailer paid its suppliers for the products sold

**Profit** =

revenue - COGS

**Marketing investments=**

mailing costs

**Return on marketing investment (ROMI)** =

(Profit) / (mailing costs)

Links to my tableau workbooks-

1. Link-

<https://public.tableau.com/views/purchaseofcustomersineachcellusingseqsort/Sheet2?:language=en-US&publish=yes&:sid=&:display_count=n&:origin=viz_share_link>

code embedded-

<div class='tableauPlaceholder' id='viz1719082979947' style='position: relative'><noscript><a href='#'><img alt='RFM Score with Sequential SortAnkita Vashishtw0854392 '

src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet2&#47;1\_rss.png' style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'><param name='host\_url' value='https%3A%2F%2Fpublic.tableau.com%2F' /> <param name='embed\_code\_version' value='3' /> <param name='site\_root' value='' /><param name='name' value='purchaseofcustomersineachcellusingseqsort&#47;Sheet2' /><param name='tabs' value='no' /><param name='toolbar' value='yes' /><param name='static\_image' value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet2&#47;1.png' /> <param name='animate\_transition' value='yes' /><param name='display\_static\_image' value='yes' /><param name='display\_spinner' value='yes' /><param name='display\_overlay' value='yes' /><param name='display\_count' value='yes' /><param name='language' value='en-US' /><param name='filter' value='publish=yes' /></object></div> <script type='text/javascript'> var divElement = document.getElementById('viz1719082979947'); var vizElement = divElement.getElementsByTagName('object')[0]; vizElement.style.width='100%';vizElement.style.height=(divElement.offsetWidth\*0.75)+'px'; var scriptElement = document.createElement('script'); scriptElement.src = 'https://public.tableau.com/javascripts/api/viz\_v1.js'; vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>

1. Link-

<https://public.tableau.com/views/purchaseofcustomersineachcellusingseqsort/Sheet1?:language=en-US&publish=yes&:sid=&:display_count=n&:origin=viz_share_link>

code embedded-

<div class='tableauPlaceholder' id='viz1719083244368' style='position: relative'><noscript><a href='#'><img alt='RFM Score with Independent SortAnkita Vashishtw0854392 ' src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet1&#47;1\_rss.png' style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'><param name='host\_url' value='https%3A%2F%2Fpublic.tableau.com%2F' /> <param name='embed\_code\_version' value='3' /> <param name='site\_root' value='' /><param name='name' value='purchaseofcustomersineachcellusingseqsort&#47;Sheet1' /><param name='tabs' value='no' /><param name='toolbar' value='yes' /><param name='static\_image' value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet1&#47;1.png' /> <param name='animate\_transition' value='yes' /><param name='display\_static\_image' value='yes' /><param name='display\_spinner' value='yes' /><param name='display\_overlay' value='yes' /><param name='display\_count' value='yes' /><param name='language' value='en-US' /><param name='filter' value='publish=yes' /></object></div> <script type='text/javascript'> var divElement = document.getElementById('viz1719083244368'); var vizElement = divElement.getElementsByTagName('object')[0]; vizElement.style.width='100%';vizElement.style.height=(divElement.offsetWidth\*0.75)+'px'; var scriptElement = document.createElement('script'); scriptElement.src = 'https://public.tableau.com/javascripts/api/viz\_v1.js'; vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>

1. Link-

<https://public.tableau.com/views/purchaseofcustomersineachcellusingseqsort/Sheet3?:language=en-US&publish=yes&:sid=&:display_count=n&:origin=viz_share_link>

code embedded-

<div class='tableauPlaceholder' id='viz1719083407747' style='position: relative'><noscript><a href='#'><img alt='Purchasers to CustomersAnkita Vashishtw0854392 ' src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet3&#47;1\_rss.png' style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'><param name='host\_url' value='https%3A%2F%2Fpublic.tableau.com%2F' /> <param name='embed\_code\_version' value='3' /> <param name='site\_root' value='' /><param name='name' value='purchaseofcustomersineachcellusingseqsort&#47;Sheet3' /><param name='tabs' value='no' /><param name='toolbar' value='yes' /><param name='static\_image' value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet3&#47;1.png' /> <param name='animate\_transition' value='yes' /><param name='display\_static\_image' value='yes' /><param name='display\_spinner' value='yes' /><param name='display\_overlay' value='yes' /><param name='display\_count' value='yes' /><param name='language' value='en-US' /><param name='filter' value='publish=yes' /></object></div> <script type='text/javascript'> var divElement = document.getElementById('viz1719083407747'); var vizElement = divElement.getElementsByTagName('object')[0]; vizElement.style.width='100%';vizElement.style.height=(divElement.offsetWidth\*0.75)+'px'; var scriptElement = document.createElement('script'); scriptElement.src = 'https://public.tableau.com/javascripts/api/viz\_v1.js'; vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>

1. Link-

<https://public.tableau.com/views/purchaseofcustomersineachcellusingseqsort/Sheet4?:language=en-US&publish=yes&:sid=&:display_count=n&:origin=viz_share_link>

code embedded-

<div class='tableauPlaceholder' id='viz1719083454022' style='position: relative'><noscript><a href='#'><img alt='Percentage of customers in Each Cell Using Sequential SortAnkita Vashishtw0854392 ' src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet4&#47;1\_rss.png' style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'><param name='host\_url' value='https%3A%2F%2Fpublic.tableau.com%2F' /> <param name='embed\_code\_version' value='3' /> <param name='site\_root' value='' /><param name='name' value='purchaseofcustomersineachcellusingseqsort&#47;Sheet4' /><param name='tabs' value='no' /><param name='toolbar' value='yes' /><param name='static\_image' value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;pu&#47;purchaseofcustomersineachcellusingseqsort&#47;Sheet4&#47;1.png' /> <param name='animate\_transition' value='yes' /><param name='display\_static\_image' value='yes' /><param name='display\_spinner' value='yes' /><param name='display\_overlay' value='yes' /><param name='display\_count' value='yes' /><param name='language' value='en-US' /><param name='filter' value='publish=yes' /></object></div> <script type='text/javascript'> var divElement = document.getElementById('viz1719083454022'); var vizElement = divElement.getElementsByTagName('object')[0]; vizElement.style.width='100%';vizElement.style.height=(divElement.offsetWidth\*0.75)+'px'; var scriptElement = document.createElement('script'); scriptElement.src = 'https://public.tableau.com/javascripts/api/viz\_v1.js'; vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>