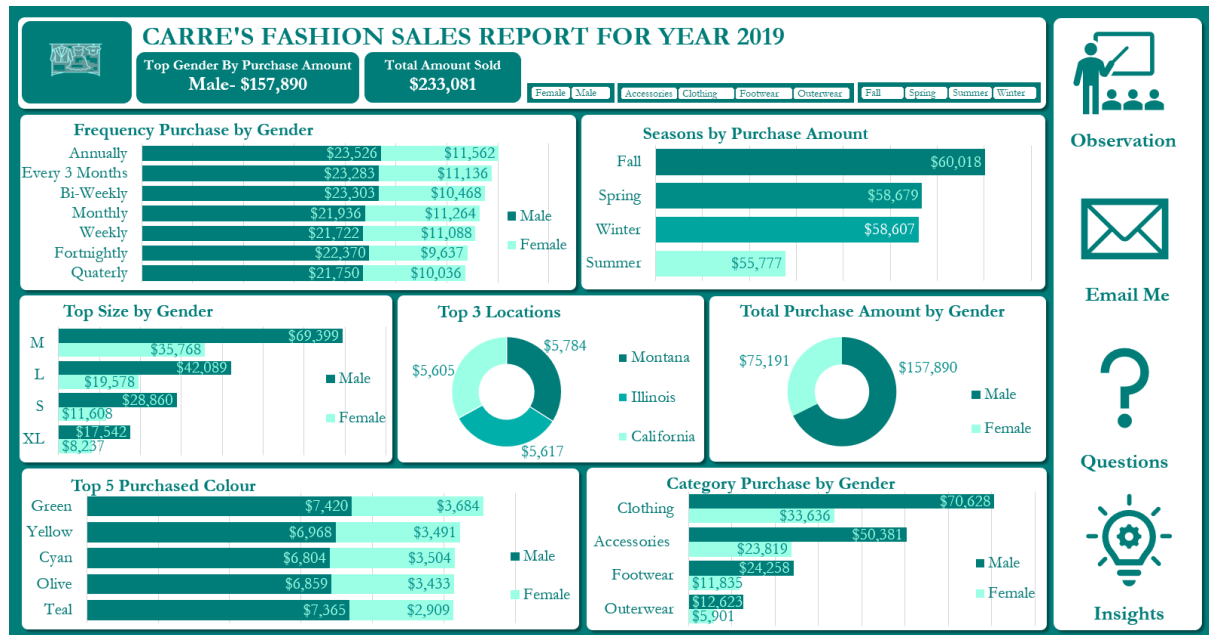


Carrie's Fashion Store: Men and Women's Fashion Hub Analysis Report for Year 2019



Carrie's Fashion Store Sales Report, 2019.

Introduction:

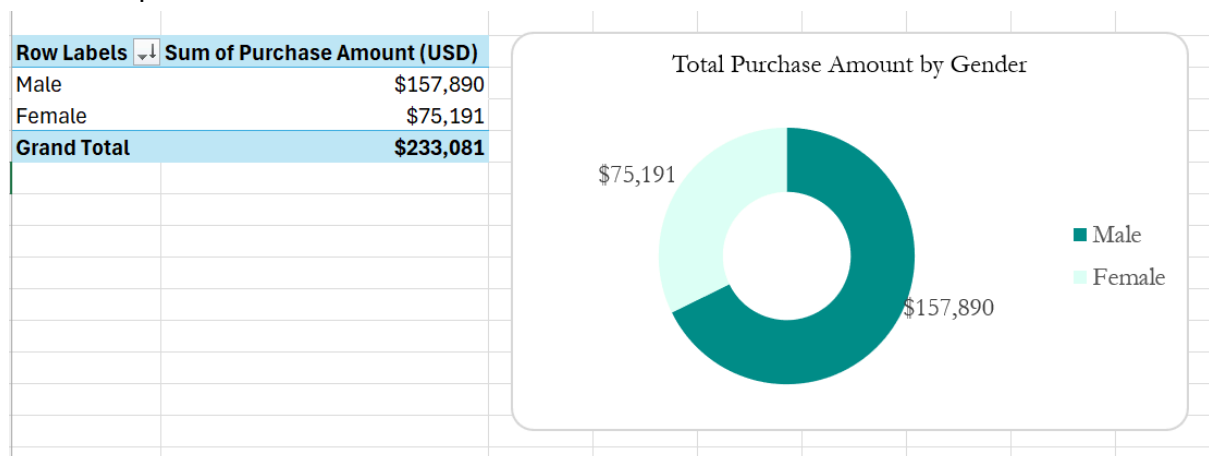
The clothing store industry is a fast changing market that is driven by trends, seasons and customer preferences. Understanding customer behaviour and sales patterns is vital for businesses to thrive. Therefore, this analysis seeks to understand customer purchasing patterns, behaviour and preferences and provide recommendations for business growth.

Objectives:

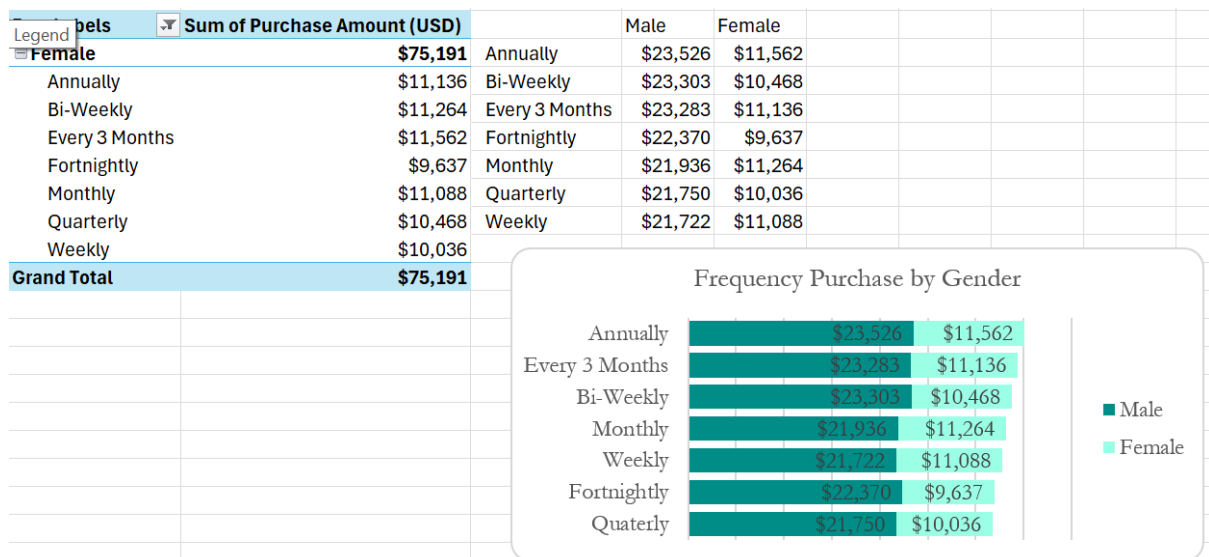
- 1) To determine which season generates the most revenue.
- 2) To understand differences in purchasing behaviour between male and female gender.
- 3) To identify top performing locations.

Methodology:

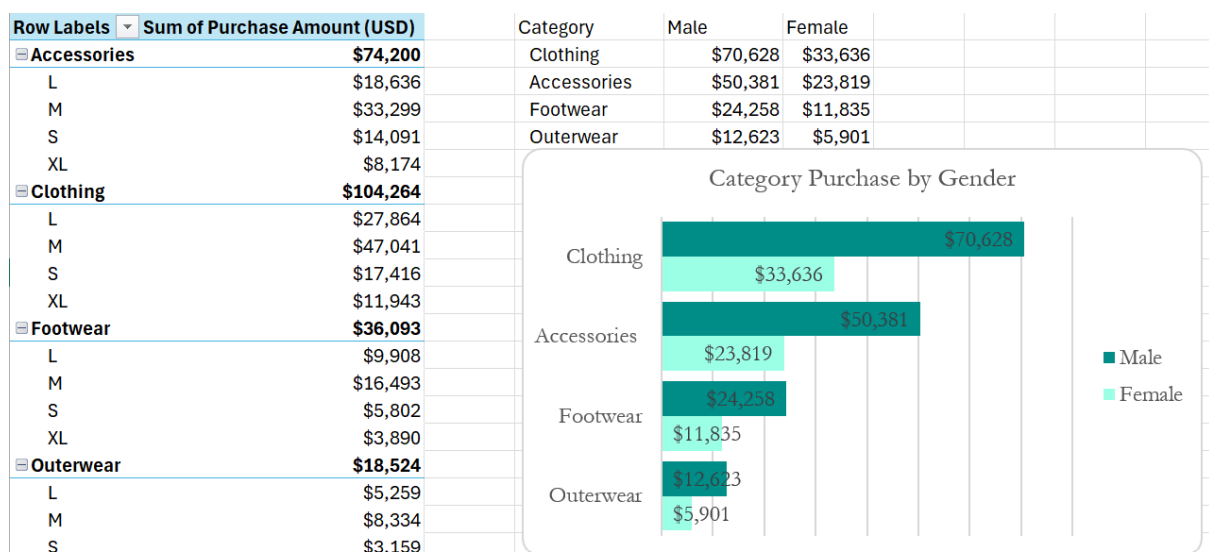
The next step taken for this analysis was to input the data in a pivot table to find the relationship between variables.



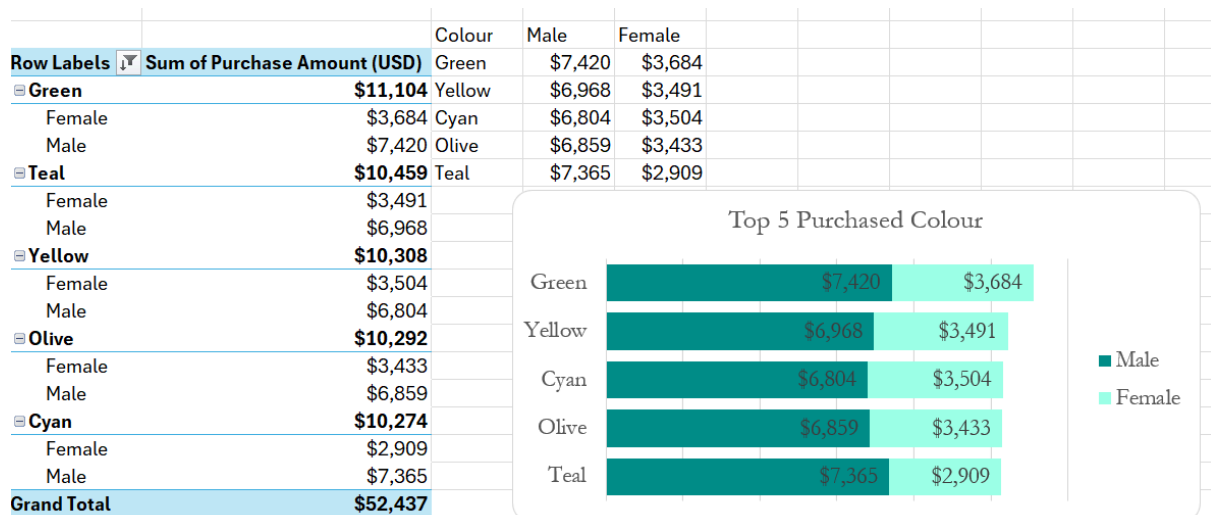
The total purchase amount by gender is represented in a Pie-chart. The male gender purchased about \$157,890 items while the female gender purchased \$75,191 items.



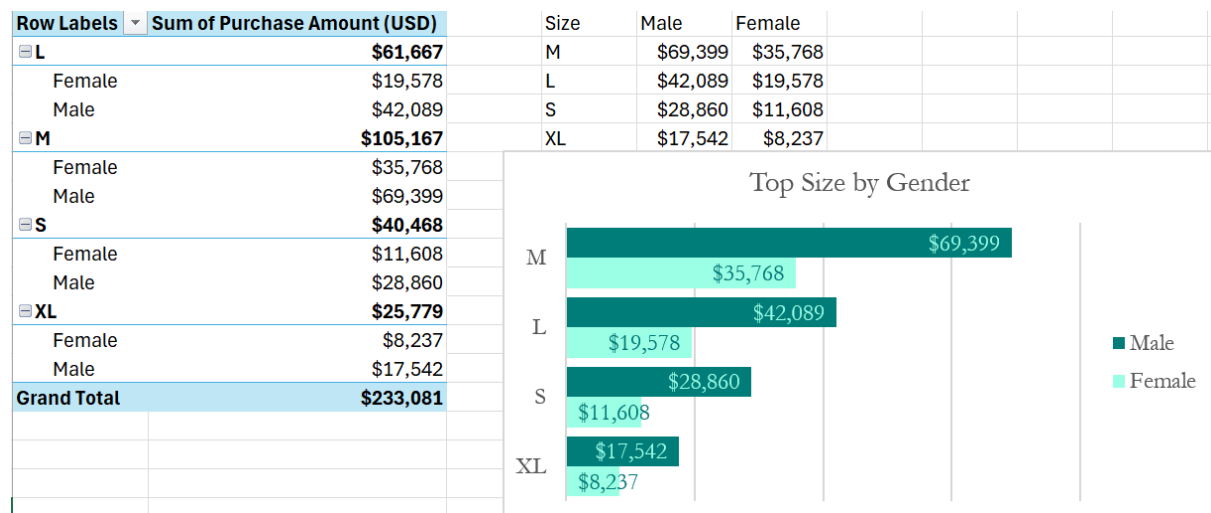
The stacked bar chart above is the frequency of purchase by gender. By frequency level, customers who purchase Bi-Weekly tend to spend more in total than the others. This means, Bi-Weekly has the highest total spend.



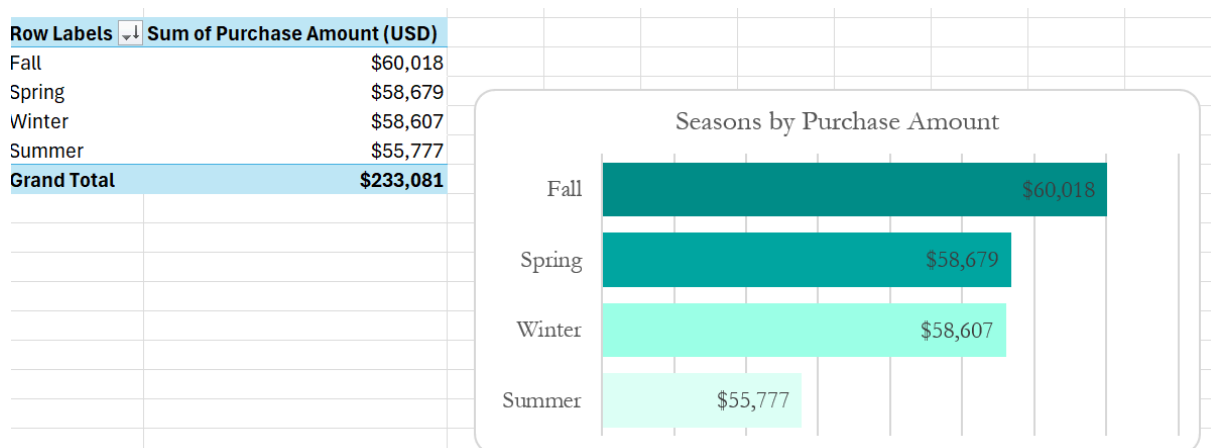
The Category purchase by gender is represented in a clustered bar chart. The chart tells us that both genders bought more clothing items than other products.



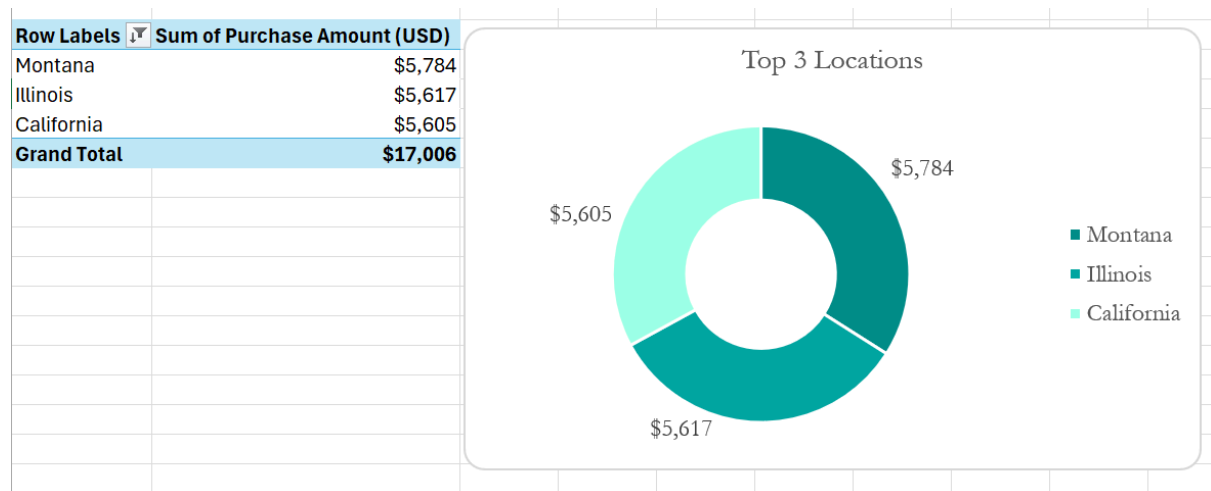
Top 5 purchased colours are represented in a stacked bar chart. The Male gender purchased more of Green colour while the female gender purchased more of Green colour items as well.



The Clustered bar chart shows the most purchased size by gender. Both genders purchased medium size than other sizes, while the least purchased size is the size labelled XL.



Seasons by Purchase Amount is represented by a Bar chart. It shows us that clothes and other items were most bought during the Fall season with about \$60,018.



The above chart is a pie-chart that shows the top 3 locations of buyers. From this visualization, one can see that customers from Montana purchased the most products than those from other locations.

Story of Data:

This project is a project linked to the Clothing Industry that shows factors influencing car sales with the dataset gotten from [kaggle.com](https://www.kaggle.com). It consists of 3,900 rows and 18 columns. The key variables of this data are purchase amount, gender, category, location, size, colour, frequency of purchases and seasons. These variables will help to understand customer behaviour, preferences and purchasing patterns which will help businesses make informed decisions.

Data Splitting and Preprocessing:

- Data Cleaning

The dataset was downloaded from [kaggle.com](https://www.kaggle.com) and loaded into an Excel Workbook. Checks were performed for blanks and duplicates while a currency sign was added to the price column.

In order to preserve the original dataset, the raw data was duplicated and retained for reference.

- Data Splitting

Independent

- Age
- Gender
- Items purchased
- Category
- Payment type
- Location
- Season
- Shipping type
- Size

- Previous purchase
- Frequency of purchase

Dependent

- Purchase Amount

Industry context and Stakeholders

This project is linked to the Clothing/Fashion Industry and its stakeholders are the Store owner and Sales persons.

Potential-Analysis Questions:

- What is the total purchase amount by gender?
- Which category is the top purchased category?
- What is the most sold colour?
- Which is the most purchased size by gender?
- Which is the top season by total purchase amount?
- Which location has the highest customers?
- What is the frequency of purchase by gender?

Pre-Analysis Insights:

- To find out the total amount of products purchased by both genders and come up with strategies that will help retain these customers so as to generate more revenue.
- To discover the top purchased category and come up with ways to maintain its performance.
- To pin-point the top purchased size by gender and uncover the reasons behind its high demand so as to maintain its position.
- To find out the season with the highest revenue and fine tune out ways to double its revenue while coming up with strategies to increase sales during other seasons.
- To find out the location with more customers and come up with ways to retain such customers.
- To discover the frequency with the highest purchase and come up with ways to retain customers in that frequency.

Data Visualizations:

- Top Size by Gender: A Clustered Bar chart was used
- Top 3 Locations: A Pie-Chart was used.
- Frequency of Purchase by Gender: A Stacked Bar-chart was used.
- Seasons of Purchase by Amount: A Bar-chart was used.
- Total Purchase Amount by Gender: A Pie-chart was used.
- Top 5 Purchased Colour: A Stacked Bar Chart was used.
- Category Purchase by Gender: A Clustered Bar Chart was used.

In-Analysis Observations:

Analysis: Seasons Of Purchase

- Amongst the 4 Seasons, products were purchased more during the Fall Season. In this season, goods worth \$60,018 were purchased.

- The Spring season ranked 2nd, with goods worth \$58,679 purchased during this season.
- Winter season ranked 3rd, with goods worth \$58,607 purchased during this season.
- Summer ranked the least with goods worth \$55,777 purchased.
- The difference in total amount of goods purchased during the Spring and Winter season is 0.12%.

Analysis: Category of Purchase by Gender

- Amongst the 4 Categories of Purchase, Clothing category topped the chart with a total of \$104,264.
- Accessories ranked 2nd with the Male gender purchasing the most (\$50,381), while the Female gender purchased the least (\$23,819).
- For Footwear that ranked 3rd, the Male gender purchased the most items with a total of \$24,258 while the Female gender purchased a total of \$11,835.
- Outerwear ranked the least amongst the 4 categories with the Male gender purchasing the most items (\$12,623) while the Female gender purchased a total of \$5,901.

Analysis: Top 3 Locations

- The top 3 locations with the highest purchase of items are Montana, Illinois and California.
- Montana topped the chart with \$5,784 of goods purchased from customers in the location.
- Illinois ranked 2nd with \$5,617 of goods purchased while California ranked 3rd with goods worth \$5,605 purchased from customers.
- There is a slight difference in revenue generated between these 3 locations.

Analysis: Frequency of Purchase by Gender

- By frequency level, customers who purchase Bi-Weekly tend to spend more in total than the others. This means, Bi-Weekly has the highest total spend.
- The Male gender spent more in all of the frequencies with a huge difference in total cost.
- The total amount spent annually is low, compared to other frequencies. This means there is higher spending in shorter cycles and more frequent purchases (bi-weekly) generates more revenue than less frequent ones (annually).

Analysis: Top 5 Purchased Colour

- The top sold colour by gender is the colour Green, with a total of \$11,104.
- The top 5 colours by rank are Green (\$11,104), Teal (\$10,459), Yellow (\$10,308), Olive (\$10,292) and Cyan (\$10,274).
- For the female gender, the most purchased colour is Green (\$3,684), next is Yellow (\$3,504), 3rd is Teal (\$3,491), 4th is Olive (\$3,433) and the least is Cyan (\$2,909).
- For the Male gender, the most purchased colour is Green (\$7,420), followed by Cyan (\$7,365), 3rd is Teal (\$6,968), 4th is Olive (\$6,804) and least is Yellow (\$6,804).

Analysis: Top Size by Gender

- The most purchased size is the size labeled M (Medium), with a total of \$105,167 from both genders.
- Sizes labeled L (Large), the Male counterpart purchased the most items, with a total of \$42,089, while Female purchased the least with \$19,578.
- Male purchased the most products for items labeled M (Medium), with a total of \$69,399, while females purchased the least items with \$35,768.

- For sizes labeled S (Small), Male purchased the most items with \$28,860, while females purchased the least with \$11,608.
- Male purchased the most products for items labeled XL (Extra Large) with a total of \$17,542 while females purchased the least with a total of \$8,237.
- In this category, the least sold size is the size labeled XL, with a total of \$25,779 from both genders.

Analysis: Total Purchase by Gender

- The Male gender purchased the most items with a total of \$157,890, while the Female gender purchased the least with a total of \$75,191.

In-Analysis Recommendations:

Analysis: Season by Purchase Amount

- Products for each season should be readily available for sale e.g winter jackets, boots, mittens and head warmers for Winter Season.
- New marketing strategies should be developed for seasons with low sales.
- Seasonal deals can be offered in order to attract new customers.

Analysis: Category of Purchase by Gender

- Customers should be rewarded for repeat purchases so as to increase loyalty and retention.
- For categories that are ranked low, discounts should be offered and fresh or new designs should be added to their collections.
- Overall, Customer feedback should be collected and analyzed so as to know areas of improvement.
- There should be seasonal specific products for each category so as to attract new customers and retain old ones.

Analysis: Top 3 Locations

- For the top locations by gender, discounts should be offered to customers in these locations so as to increase patronage and boost sales.
- For customers who need to get their products delivered to them, free delivery can be offered as a form of reward for past patronage for customer retention.

Analysis: Frequency of Purchase by Gender

- Customers who purchase frequently (Bi-weekly and Weekly) should be focused on to encourage loyalty and retention.
- Promotions or discounts should be offered to frequent buyers so as to increase their spendings.

Analysis: Top 5 Purchased Colour

- The top category for the female gender is Clothing. With this, clothing items that are green and yellow in colour should be readily available for sale, so as to retain customers.
- The male gender seems to have purchased many products branded by its top 5 colours. with this, products for this gender branded with its top 5 colours should be readily available for sale

Analysis: Top Size by Gender

- Marketing strategies should be tailored towards sizes with low sales.
- Diverse sizes should be showcased during marketing or advertising.

Analysis: Total Purchase by Gender

- There should be a wide range of products specifically for the male gender. Also, more designs and styles should be added to their collection so as to increase sales.
- Marketing strategies and campaigns towards the female gender should be developed.
- Female influencers can be collaborated with to showcase new designs and styles in order to draw in female customers and boost sales.

Post-Analysis Observations:

Analysis: Seasons by Purchase Amount

- The Fall Season had the highest revenue with a total of \$60,018, next is Spring (\$58,679), 3rd is Winter (\$58,607) and the least is Summer (\$55,777).
- There is a very slight difference between revenue generated in the Spring and Winter Season.
- The top 3 locations that purchased more products during the Fall Season are Texas, California and Idaho. The Male gender purchased more products (\$39,825) during this Season than the Female gender (\$20,193). During this Season, Clothing was sold the most, with a total of \$26,220, while Outerwear was the least sold with a total of \$5,259. During this season, the most sold size is the size labeled M (Medium) with a total of \$26,546, while the least purchased is XL (\$6,813). The top colour purchased during this Season is the Yellow Colour (\$3,113).
- The Spring season ranked 2nd amongst the 4 Seasons with a total of \$58,679. The Male gender purchased more during this season (\$40,101), than the Female Gender (\$18,578). The top 3 locations during this Season are Nevada, Alaska and Illinois. The most sold Category during this season is Clothing Category (\$27,692) while the least is Outerwear (\$4,425). During this season, the most sold size is the size labeled M (Medium) with a total of \$26,909, while the least purchased is XL (\$6,566). The top colour purchased during this Season is the Olive Colour (\$2,911).
- The Winter Season ranked 3rd amongst the 4 Seasons, generating a total of \$58,607 revenue. The top 3 locations that purchased more products during this Season are Vermont, Virginia and Montana. The Male gender purchased more products (\$40,247) during this Season than the Female gender (\$18,360). During this Season, Clothing was sold the most, with a total of \$27,274, while Outerwear was the least sold with a total of \$4,562. During this season, the most sold size is the size labeled M (Medium) with a total of \$25,786, while the least purchased is XL (\$6,896). The top colour purchased during this Season is the Green Colour (\$3,186).
- The least amongst the 4 Seasons is the Summer Season (\$55,777). In this Season, the Male gender purchased the most items with a total of \$37,717, while the Female gender purchased a total of \$18,060. The top 3 locations that purchased more products during this season are Pennsylvania, North Dakota and Alabama. The most sold Category during this season is Clothing (\$23,078) while Outerwear is the least (\$4,278). The most sold colour is Silver (\$3,312) while the top purchased size is Medium (\$25,926).

Analysis: Category of Purchase by Gender

- The most sold Category is the Clothing Category, with a total of \$104,264. The Male gender purchased this Category the most with a total of \$70,628, while the Female gender

purchased a total of \$33,636. By size, the medium size was mostly sold in this Category with a total of \$47,041. The Clothing category was mostly sold in the Spring season (\$27,692) and was least sold in the Summer season (\$23,078) while by location, the Clothing category was mostly purchased in Montana (\$2,768).

- The 2nd most sold Category is the Accessories, with a total of \$74,200. By size, the medium size was mostly sold in this Category with a total of \$33,299. The Male gender purchased this Category the most with a total of \$50,381, while the Female gender purchased a total of \$23,819. The Accessories category was mostly sold in the Fall season (\$19,874) and was least sold in the Spring season (\$17,007) while by location, the Accessories category was mostly purchased in Illinois (\$1,854).

- The 3rd most purchased Category is the Footwear Category, with a total of \$36,093. By size, the medium size was mostly sold in this Category with a total of \$16,493. The Footwear category was mostly sold in the Spring season (\$9,555) and was least sold in the Winter season (\$8,480) while by location, the Footwear category was mostly purchased in Illinois (\$665). The Male gender purchased this Category the most with a total of \$24,258, while the Female gender purchased a total of \$11,835.
- The least purchased Category is the Outerwear Category, with a total of \$18,524. The Male gender purchased this Category the most with a total of \$12,623, while the Female gender purchased a total of \$5,901. By size, the medium size was mostly sold in this Category with a total of \$8,334. The Outerwear category was mostly sold in the Fall season (\$5,259) and was least sold in the Summer season (\$4,278) while by location, the Outerwear category was mostly purchased in Montana (\$664).

Analysis: Top 3 Locations

- Adding up the total amount of products bought by both genders from these locations, the top 3 locations by rank are Montana (\$5,784), Illinois (\$5,617) and California (\$5,605).
- By gender based, the location with the highest purchase for the Male is West Virginia (\$3,935), while for the Female, it is Montana (\$2,184).

Analysis: Frequency of Purchase by Gender

- By frequency level, customers who purchase Bi-Weekly tend to spend more in total than the others. This means, Bi-Weekly has the highest total spend.
- The Male gender spent more in all of the frequencies with a huge difference in total cost.
- The total amount spent annually is low, compared to other frequencies. This means there is higher spending in shorter cycles, and more frequent purchases (bi-weekly) generates more revenue than less frequent ones (annually).

Analysis: Top Size by Gender

- The most sold size is the size labeled M (Medium) with a total of \$105,167. It had a huge difference in revenue generated between other sizes. The Male gender purchased this size the most with a total of \$69,399, while the Female gender purchased the least with a total of \$35,768. In the Category purchase, Medium size was mostly sold in the Clothing category, with a total of \$47,041 and was least sold in Outerwear (\$8,334). This size was mostly purchased during the Spring Season with a total of \$26,909, next is the Fall Season (\$25,546), followed by Summer (\$25,926) and Winter (\$25,786). There was no huge difference in revenue generated in this size between the Fall and Spring Season and also

between the Summer and Winter Season. Amongst the top 3 locations, Medium size was mostly sold in California (\$2,475).

- The 2nd most purchased size is the size labeled L (Large) with a total of \$61,667. This size was mostly purchased during the Winter Season with a total of \$16,625, next is the Fall Season (\$15,977), followed by Summer (\$14,595) and Spring (\$14,470). There was no huge difference in revenue generated in this size between the Spring and Summer Season. Amongst the top 3 locations, L size was mostly sold in Illinois (\$1,671). The Male gender purchased this size the most with a total of \$42,089, while the Female gender purchased the least with a total of \$19,578. In the Category purchase, Large size was mostly sold in the Clothing category, with a total of \$27,864 and was least sold in Outerwear (\$5,259). This size was mostly purchased during the Winter Season with a total of \$16,625, next is the Fall Season (\$15,977), followed by Summer (\$14,595) and Spring (\$14,470). There was no huge difference in revenue generated in this size between the Spring and Summer Season.

- The 3rd most purchased size is the size labeled S (Small) with a total of \$40,468. The Male gender purchased this size the most with a total of \$28,860, while the Female gender purchased the least with a total of \$11,608. In the Category purchase, Small size was mostly sold in the Clothing category, with a total of \$17,416 and was least sold in Outerwear (\$3,159). This size was mostly purchased during the Spring Season with a total of \$10,734, next is the Fall Season (\$10,682), followed by Summer (\$9,752) and Winter (\$9,300). There was no huge difference in revenue generated in this size between the Fall and Spring Season and also between the Summer and Winter Season. Amongst the top 3 locations, Small size was mostly sold in Illinois (\$1,485).

- The least sold size is the size labeled XL (Extra Large) with a total of \$25,779. Amongst the top 3 locations, XL size was mostly sold in California (\$876). The Male gender purchased this size the most with a total of \$17,542, while the Female gender purchased the least with a total of \$8,237. In the Category purchase, XL size was mostly sold in the Clothing category, with a total of \$11,943 and was least sold in Outerwear (\$1,772). This size was mostly purchased during the Winter Season with a total of \$6,896, next is the Fall Season (\$6,813), followed by Spring (\$6,566) and Summer (\$5,504). There was no huge difference in revenue generated in this size between the Fall and Winter Season.

Analysis: Total Purchase Amount by Gender

- The Female Gender purchased a total of \$75,191. Its highest category of purchase is the Clothing Category with a total of \$33,636. Most of this gender's product was bought during the Fall Season with a total of \$20,193. The top 3 locations with the highest purchase for this gender are Montana (\$2,184), Texas (\$2,059) and Illinois (\$1,919). The most purchased size of this gender is the size labeled M (Medium) while the most purchased colour is Yellow.

- The Male gender bought products worth \$157,890. Most of this gender's product was bought during the fall season (\$39,825). Its highest category of purchase is the Clothing Category (\$70,628). Most purchased colour for this gender is Green (\$7,420) while the top purchased size is the size labelled M (Medium) with a total of \$69,399. The top 3 locations with the highest purchase for this gender are West Virginia (\$3,935), California (\$3,869) and Idaho (\$3,715).

Post-Analysis Insights:

Analysis: Seasons by Purchase Amount

- Products for each season should be readily available for sale e.g winter jackets, boots, mittens and head warmers for Winter Season.
- New marketing strategies should be developed for seasons with low sales.
- Seasonal deals can be offered in order to attract new customers.

Analysis: Category of Purchase by Gender

- For the clothing category that had the highest sales, more designs or style should be added to its sub-categories such as shirts, gowns, trousers etc so as to increase spendings of customers.
- Customers should be rewarded for repeat purchases so as to increase loyalty and retention.
- For categories that are ranked low, discounts should be offered and fresh or new designs should be added to their collections.
- Overall, Customer feedback should be collected and analyzed so as to know areas of improvement.
- There should be seasonal specific products for each category so as to attract new customers and retain old ones.

Analysis: Top 3 Locations

- For the top locations by gender, discounts should be offered to customers in these locations so as to increase patronage and boost sales.
- For customers who need to get their products delivered to them, free delivery can be offered as a form of reward for past patronage for customer retention.

Analysis: Frequency of Purchase by Gender

- Customers who purchase frequently (Bi-weekly and Weekly) should be focused on to encourage loyalty and retention.
- Promotions or discounts should be offered to frequent buyers so as to increase their spendings.

Analysis: Top Size by Gender

- For the most sold size (Medium), this size can be analyzed to know why it is the most popular. Also, such size should be readily available for pick-up or sale so as to increase revenue and retain customers.
- Marketing strategies should be tailored towards sizes with low sales.
- Diverse sizes should be showcased during marketing or advertising.

Analysis: Total Purchase Amount by Gender

- Male customers' needs and interests should be focused on (being the highest purchaser) so as to retain customers.
- There should be a wide range of products specifically for the male gender. Also, more designs and styles should be added to their collection so as to increase sales.
- Marketing strategies and campaigns towards the female gender should be developed.
- Female influencers can be collaborated with to showcase new designs and styles in order to draw in female customers and boost sales.

Conclusion:

This analysis of a clothing store data discloses key insights into customer purchasing behavior and pattern, showcasing the popularity of different seasons, product categories, locations, and frequency of purchases which can inform targeted marketing strategies and inventory management decisions. The findings suggest that men's clothing and accessories are high in sales, with bi-weekly purchases and medium-sized items being particularly popular, providing valuable insights for business growth and success.

Reference: [kaggle.com](https://www.kaggle.com)