Title: Understanding Customer Behaviour in Retail Transactions

Introduction:

Understanding customer behaviour is essential for retail businesses to optimise their strategies and improve profitability. In this analysis, we'll explore key performance indicators (KPIs) to gain insights into customer behaviour based on the provided dataset containing transactional data.

Methodology:

1. Data Preparation:
   * Load the dataset and inspect its structure.
   * Handle any missing or inconsistent data.
2. Exploratory Data Analysis (EDA):
   * Analyse the distribution of key variables such as Quantity, UnitPrice, and InvoiceDate.
   * Explore the relationship between variables, e.g., Quantity vs. UnitPrice.
3. Customer Segmentation:
   * Segment customers based on their purchasing behaviour (e.g., frequency, recency, monetary value).
   * Use clustering techniques to identify distinct customer groups.
4. Key Performance Indicators (KPIs):
   * Calculate and visualise KPIs to understand customer behaviour:
     + Average Order Value (AOV)
     + Customer Lifetime Value (CLV)
     + Repeat Purchase Rate
     + Churn Rate
5. Recommendations:
   * Provide actionable insights and recommendations based on the analysis.

Results:

1. Average Order Value (AOV):
   * AOV = Total Revenue / Total Number of Orders
   * A high AOV indicates that customers are purchasing higher-priced items or multiple items per transaction.
   * Monitoring AOV helps in identifying trends in purchasing behaviour and optimising pricing strategies.
2. Customer Lifetime Value (CLV):
   * CLV estimates the total revenue a customer is expected to generate over their lifetime.
   * CLV = Average Purchase Value \* Purchase Frequency \* Customer Lifespan
   * Higher CLV signifies loyal and high-value customers.
   * Targeting high CLV customers with personalised offers can increase retention and profitability.
3. Repeat Purchase Rate:
   * Repeat Purchase Rate = (Number of Repeat Customers / Total Number of Customers) \* 100
   * A high repeat purchase rate indicates customer loyalty and satisfaction.
   * Implementing loyalty programs or improving customer service can enhance repeat purchase rates.
4. Churn Rate:
   * Churn Rate = (Number of Lost Customers / Total Number of Customers) \* 100
   * Churn rate measures the percentage of customers who stop purchasing from the business.
   * Identifying reasons for churn and implementing strategies to retain customers is crucial for business sustainability.

Recommendations:

1. Personalised Marketing Campaigns:
   * Utilise customer segmentation to target specific customer groups with personalised offers and promotions.
2. Enhance Customer Experience:
   * Improve website usability, customer service, and post-purchase communication to increase customer satisfaction and loyalty.
3. Optimise Pricing and Product Assortment:
   * Analyse pricing strategies and product mix to maximise revenue and profitability.
4. Invest in Customer Retention:
   * Implement loyalty programs, referral incentives, and proactive churn prevention strategies to retain valuable customers.

Conclusion:

Understanding customer behaviour through KPIs enables retailers to make informed decisions and tailor strategies to meet customer needs effectively. By focusing on improving key metrics and implementing actionable recommendations, retailers can enhance customer satisfaction, loyalty, and long-term profitability.

Thank You!

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