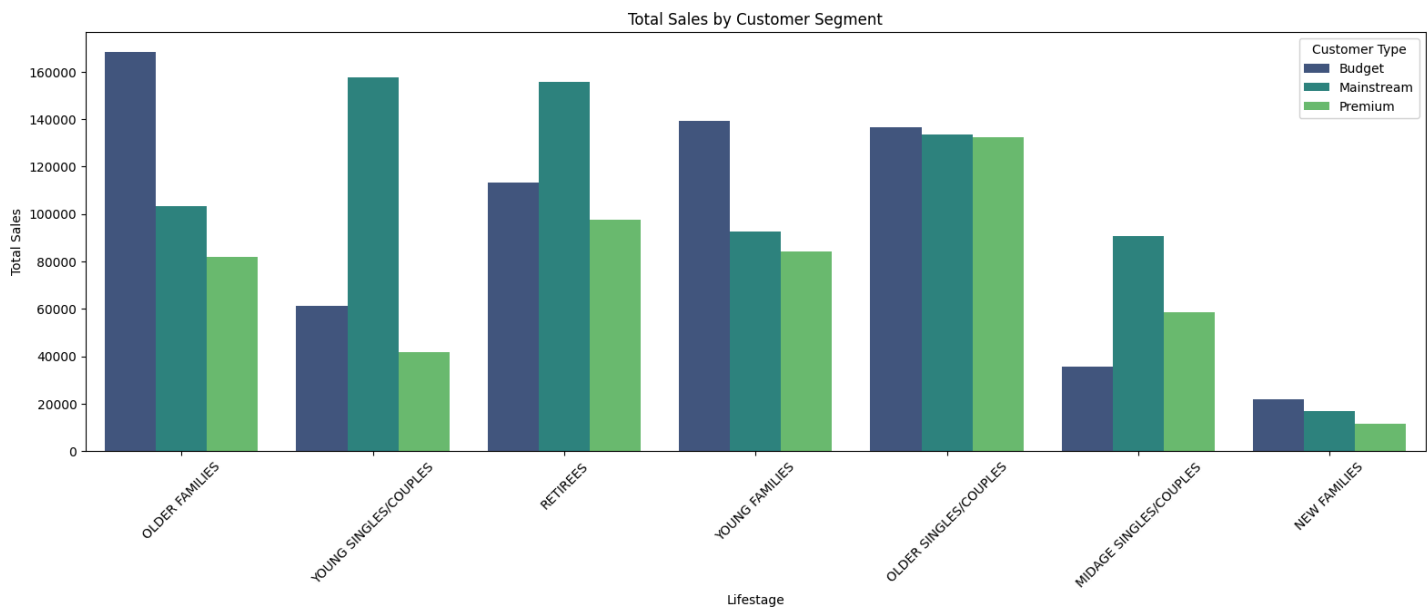
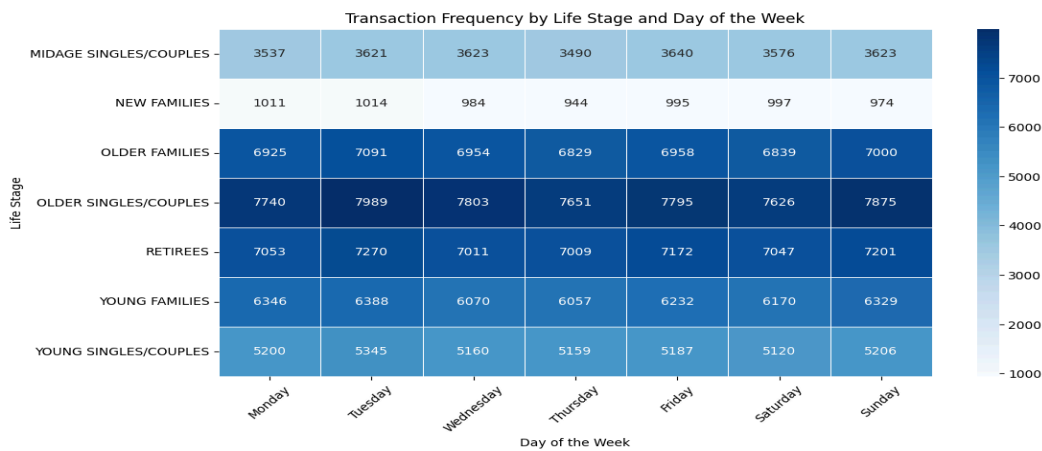


Market Analysis Summary

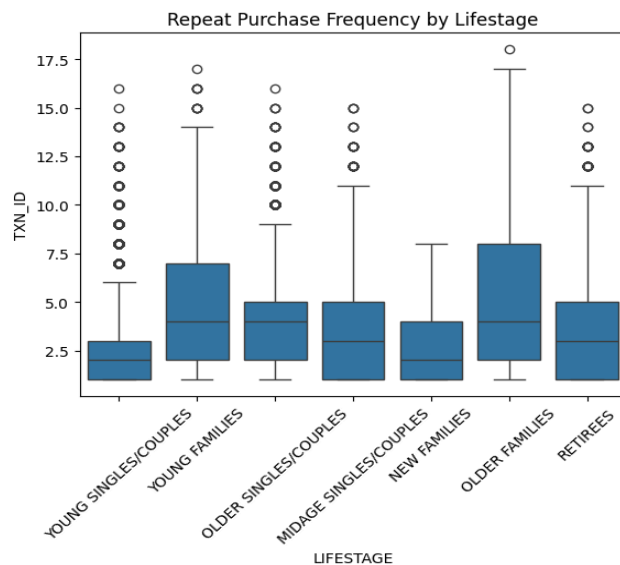
Key Findings:



- **Older Families:**
 - Particularly engaged with "Budget" products, older families contribute significantly to sales. Their purchase frequency shows a mix of frequent and occasional buying behavior, offering both opportunities for loyalty programs and occasional promotions.
 - Older families purchase more from budget-friendly products and if targeted discounts or promotions drive increased sales.



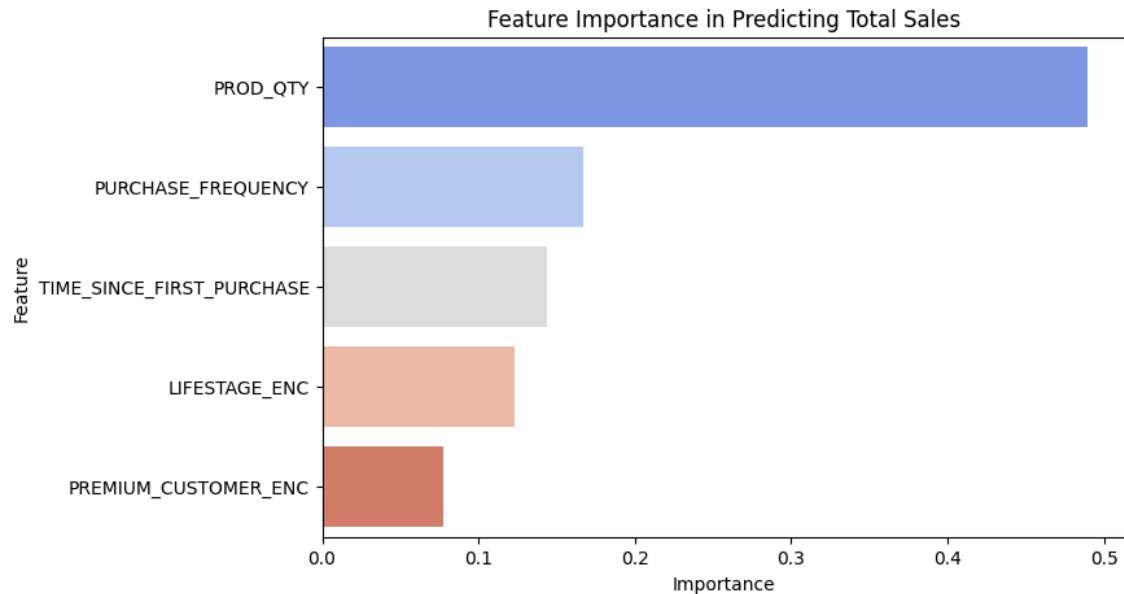
- **Leverage Tuesdays:** Given that Tuesdays are the peak transaction day across all groups, consider scheduling special promotions on this day to maximize sales
- **Peak Transaction Days by Lifestage:**
 - **Older Singles/Couples:** peak on Tuesday with 7989 transactions, reflecting strong mid-week activity.
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 - **Retirees:** Tuesday is the most active day, with 7270 transactions.
 - **Older Families:** Tuesday leads with 7091 transactions, showing high engagement on this day.
 - **Young Families:** Peak on Tuesday with 6388 transactions, indicating similar behavior to older families
 - **Young Singles/Couples:** While Tuesday is the peak day, transactions drop slightly to 5345, suggesting lower overall engagement.
 - **New Families:** Most transactions occur on Tuesday (1014 transactions), with consistent mid-week shopping.



- **Customize Offers for Older Families as they have most repeat purchase:** Focus on affordable products and offer exclusive promotion

Feature Importance in Predicting Total Sales

Based on the Random Forest Regression model, the features impacting total sales (TOT_SALES) are ranked as follows:



1. **PROD_QTY (Most Important):** The number of products purchased is the strongest predictor of total sales.
Bulk-buy promotions could increase revenue by encouraging customers to purchase more.
2. **PURCHASE_FREQUENCY (Second Most Important):** Frequent purchases are a significant driver of total sales.
Loyalty programs and personalized promotions could boost repeat purchases, enhancing sales.
3. **TIME_SINCE_FIRST_PURCHASE:** The length of time a customer has been shopping with the company affects sales, though less than product quantity or purchase frequency.
Loyal customers may contribute more in the long run, but new customers can also be engaged with targeted offers.
4. **LIFESTAGE_ENC (Demographic Influence):** A customer's lifestage impacts sales, though to a lesser extent than purchasing behavior.
Tailored marketing strategies based on lifestage preferences can improve sales.
5. **PREMIUM_CUSTOMER_ENC (Least Important):** Being a premium customer has the least impact on total sales.
Reassess the premium customer program to ensure it drives higher spending.

Overall Business Recommendations:

1. **Increase Product Quantity & Purchase Frequency:**
 - Implement bulk-buy discounts or subscription models to increase average order size.
 - Reward frequent buyers with personalized discounts or loyalty programs.
2. **Focus on Customer Loyalty:**
 - While loyal customers are valuable, purchase behavior (frequency and quantity) plays a more significant role in sales. Prioritize strategies that encourage frequent and bulk purchases.
3. **Revamp Premium Program:**
 - Since premium customers have the least impact on total sales, consider revising the program to offer more engaging benefits.
4. **Personalize Marketing by Lifestage:**
 - Target different lifestages with specific products to boost sales and customer engagement.