

Optimizing Advertising Campaigns in Online Travel Agencies: Leveraging the LRFM Method for Customer Segmentation and Promotional Effectiveness

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Abstract

The research focuses on exploring how promotional activities impact customer purchasing behavior in the online travel agency industry using the LRFM method (Latency, Frequency, Value for Money, and Lifetime Value). By developing a segmentation model based on these dimensions, the study aims to optimize personalized targeting in advertising campaigns. The methodology involved implementing promotions like discounts, utilizing the LRFM method to categorize customers, and using clustering techniques to refine customer groups for personalized promotions. Statistical methods, including K-Means clustering, were used to analyze customer behaviors. The findings highlighted the complex relationship between promotions and customer behavior, showing how the LRFM model can significantly impact advertising campaign segmentation outcomes. Clustering based on refined LRFM criteria provided insights into the differential impact of promotions across customer groups. Implications of the research include academic contributions to understanding promotional strategies and LRFM dimensions in customer behavior and practical insights for optimizing

advertising campaigns in online travel agencies. The segmentation model and personalized promotions offer a foundation for future marketing strategies and more effective advertising campaigns in the online travel industry.

Keywords: Promotional activities, LRFM method, Online travel agencies

Introduction

2 In today's competitive online travel industry, optimizing advertising campaigns is crucial for attracting and retaining customers. Online travel agencies (OTAs) invest heavily in marketing activities to stand out in a crowded marketplace and convert potential customers into loyal ones. This research focuses on the application of the LRFM (Latency, Recency, Frequency, Monetary) method to enhance the effectiveness of promotional activities in OTAs. The LRFM model builds on the traditional RFM (Recency, Frequency, Monetary) method by adding the dimension of Latency, which measures the time delay between customer interactions. This addition provides a more comprehensive understanding of customer behavior and helps in predicting customer lifetime value more accurately. The primary objective of this study is to investigate the impact of various promotional activities on customer buying behavior within the context of online travel agencies. By implementing the LRFM method, the research aims to develop a robust analytical model that can classify customers into distinct segments based on their purchasing patterns. This segmentation allows for more targeted and personalized marketing efforts, which are essential for optimizing advertising campaigns. The study also seeks to identify the key dimensions within the LRFM model that significantly influence the success of these campaigns.

Several research questions guide this investigation: How do different promotional activities affect customer buying behavior in online travel agencies? Which dimensions of the LRFM model are most critical in predicting customer lifetime value? How can the insights gained from the LRFM analysis be applied to optimize advertising strategies? Addressing these questions will not only contribute to the academic understanding of consumer dynamics but also provide practical recommendations for enhancing marketing effectiveness in the online travel sector.

The significance of this study lies in its dual contribution to both theory and practice. Academically, it enriches the literature on customer segmentation and behavior by introducing the LRFM model's application in a dynamic and competitive industry. Practically, it offers actionable insights for online travel agencies to refine their promotional strategies, thereby improving customer retention and increasing return on investment. By bridging the gap between theoretical research and practical application, this study aims to set a foundation for future advancements in marketing strategies within the online travel industry.

Methodology

The research design for this study employs a multifaceted approach to thoroughly investigate the effectiveness of promotional activities and their impact on customer behavior within online travel agencies. Central to this design is the application of the LRFM (Latency, Recency, Frequency, Monetary) model for customer segmentation. This model enhances the traditional RFM method by incorporating the Latency dimension, which measures the time delay between customer interactions. This addition provides a deeper understanding of customer engagement and helps predict customer lifetime value more accurately.

To implement the LRFM model, historical data from over 120,000 users of online travel agencies was collected for the months of June and July 2023. This data includes detailed records of customer transactions, such as the timing of purchases, frequency of transactions, monetary value of purchases, and the duration of the customer relationship. By applying the LRFM method, customers were categorized into distinct segments that reflect their transactional behaviors and historical engagement with the platform. This segmentation served as the foundation for analyzing the impact of various promotional activities.

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Promotional activities, including discounts and free gifts, were strategically implemented to assess their effectiveness. These activities were designed to target specific customer segments identified through the LRFM analysis. The effectiveness of these promotions was evaluated using metrics such as conversion rates and changes in customer behavior post-promotion. To ensure the robustness of the findings, an experimental design involving control groups was employed. Customers in the control groups did not receive any promotional incentives, allowing for a comparative analysis of the impact of promotions on customer behavior.

The data analysis process incorporated advanced clustering techniques, particularly the K-Means algorithm, to further refine customer segments and analyze their behavior. The K-Means method, a widely used unsupervised machine learning technique, was applied to partition the dataset into distinct groups based on inherent patterns and similarities. This clustering approach helped identify homogeneous groups within the heterogeneous dataset, facilitating a more precise analysis of promotional effectiveness across different customer segments. The integration of LRFM categorization with K-Means clustering provided a comprehensive framework for understanding the nuanced variations in customer behavior and optimizing advertising strategies accordingly.

Findings

The study's findings reveal significant insights into the interaction between promotional activities and customer buying behavior within online travel agencies. By employing the LRFM model, the research identified key dimensions—Latency, Recency, Frequency, and Monetary value—that play crucial roles in determining the effectiveness of advertising campaigns. The integration of these dimensions allowed for a nuanced segmentation of customers, which proved essential in tailoring promotional strategies to specific customer groups.

The analysis showed that customers segmented based on high recency and frequency values responded more positively to promotional activities, such as discounts and free gifts. These segments exhibited higher conversion rates compared to those with lower recency and frequency values. For instance, customers who had made recent purchases and frequently interacted with the platform showed a significant increase in transaction volume when targeted with promotional offers. This indicates that timely and frequent engagement is a strong predictor of responsiveness to marketing efforts.

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Moreover, the study highlighted the differential impact of promotions across various customer segments. Customers with high latency, or those who had longer intervals between interactions, were less responsive to standard promotional activities. However, when these customers were offered personalized promotions with higher monetary value, their conversion rates improved. This finding underscores the importance of customizing promotional strategies based on the latency dimension to re-engage fewer active customers effectively.

The use of control groups further validated these findings. Customers who did not receive any promotional incentives demonstrated lower engagement and conversion rates, reinforcing the effectiveness of targeted promotions identified through the LRFM model. The comparative analysis between the experimental and control groups provided robust evidence that strategic promotional activities significantly enhance customer engagement and purchasing behavior.

Overall, the findings suggest that the LRFM model is a powerful tool for optimizing advertising campaigns in online travel agencies. By accurately segmenting customers and tailoring promotions to their specific behaviors, businesses can achieve higher conversion rates and better customer retention. These insights offer valuable guidance for future marketing strategies, emphasizing the need for personalized and data-driven approaches in the competitive online travel industry.

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Conclusion

This research underscores the critical role of the LRFM method in enhancing customer segmentation and optimizing promotional activities within online travel agencies. By incorporating the Latency dimension into the traditional RFM model, the study provides a more nuanced understanding of customer behavior, allowing for more targeted and effective marketing strategies. The findings demonstrate that customers segmented based on high recency and frequency values are more responsive to standard promotional activities, while those with high latency require more personalized and high-value promotions. These insights are pivotal for online travel agencies aiming to maximize their marketing efficiency and improve customer retention. The study's contributions to the field of marketing and customer relationship management are significant. It extends the application of the LRFM model to the dynamic and competitive context of online travel agencies, offering new perspectives on customer segmentation and behavior.

5 For businesses looking to implement similar strategies, the practical recommendations from this study are clear. Online travel agencies should prioritize segments with high recency and frequency values for broad promotional campaigns, such as discounts and free gifts, to achieve higher conversion rates. Conversely, segments with high latency should be targeted with more personalized and higher-value promotions to re-engage less active customers. By leveraging the LRFM model and advanced data analytics, businesses can achieve more effective and efficient marketing outcomes, ultimately driving sustained growth and customer loyalty. In summary, the LRFM method offers a powerful tool for optimizing advertising campaigns within online travel agencies. By accurately segmenting customers and tailoring promotions to their specific behaviors, businesses can achieve higher conversion rates and better customer retention. This study not only enriches the academic understanding of customer segmentation and behavior but also provides actionable insights for practical application. Future research should continue to refine the LRFM model and explore its applicability across different industries, ensuring that businesses can leverage these insights to enhance their marketing strategies and drive sustained growth.

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