Positives:  
•    Thorough analysis of the toothpaste category within Pernalonga.  
•    Segmented customers generally and with respect to the toothpaste category identifying Colgate-Loyal customers, Cherry Pickers, etc.  
•    Identified substitutes; excluded banana as a complement.  
•    Computed estimated incremental sales from customers expected to switch to Colgate.  
•    Computed expected probability of customers switching to Colgate with reasonable justification.  
•    Code is generally well-commented.  
Improvements:  
•    How does Colgate’s sales share in the toothpaste category at Pernalonga compare to the overall share in Pernalonga’s market?  
•    Profit computation assumes a fix margin (Base - Min) for each transaction which lack justification.  
•    Unrelated/unnecessary info on products sold in KG units.  
•    Failed to identify customers who are likely to buy any brand of toothpaste when discounted.  
•    Should have analyzed and concluded that the “infant” product should be recommended to customers who buy other baby/toddler products.  
•    Complement product analysis missed the important question of “What other products (e.g., toothbrush, dental floss, mouthwash, etc.) sell when toothpaste (Colgate) is promoted?”.  This is needed to estimate incremental revenue and profits from the other products.  
•    Water and iced tea as top complements should be scrutinized further like what you did with bananas.  
•    Did not mention/justify the features (frequency of co-occurrence categories?) used in similarity computation.  
•    Proposed A/B testing on stores instead of customer groups.  The campaign is personalized, so less to do with stores than customers with similar profiles.  
•    No justification for the 10% discount rate.  
•    Identified customers to target (in the code) but not the products to offer each customer.  
•    Did not consider cost (related to discount offers) of the campaign.  
•    Did not consider the expected net increase/decrease to Pernalonga sales/profits when targeting customers buying non-Colgate toothpaste.  
•    Did not compute expected net incremental profits from toothpaste and complement products.  
•    Computing total quantities and unit prices across brands and products do not make much sense.  
•    Complements were based on top co-occurrence in transaction rather than support and confidence.  
•    Improve organization and flow of report, e.g., profit margin was mentioned before definition/assumptions about it were presented.  
•    There are some typos and grammatical errors in the report.  
•    Hard-coding of toothpaste brands and other parameters within the code.  
•    Comments do not provide justification of computations or chosen methods.  
Grading:  
•    Integration of domain knowledge/practicality into solution (17/20%)  
•    Creativity and mathematically sound application/execution of chosen technique/model (22/25%)  
•    Robustness and efficiency of solution/code (20/25%)  
•    Report and presentation flow (16/20%)  
•    Bonus (2/10%)