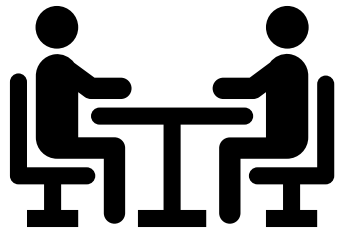




# **TURTLE GAMES**

**Customer Segmentation & Predictive Modeling**

# Analysis Objectives



- Improve overall Sales
- Build a robust loyalty program with a high retention rate
- Proactively address customers' concerns

# Objectives' Breakdown



## Loyalty Points

- Age
- Education
- Gender
- Annual Income
- Spending trends



## Customer Segments



## Reviews



Increase Sales

+

Robust Loyalty Program

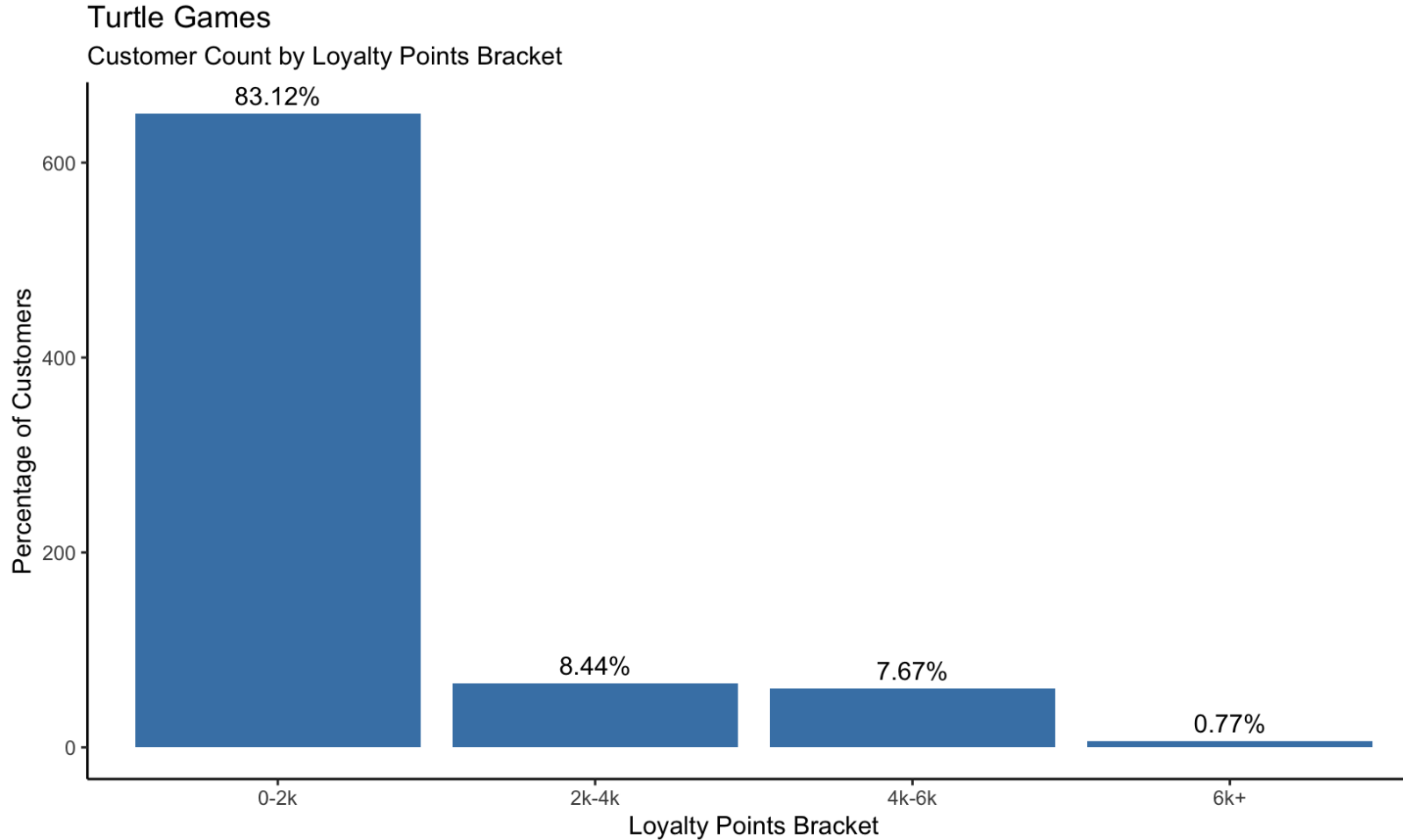
+

Address Customer Concerns

# Loyalty Points

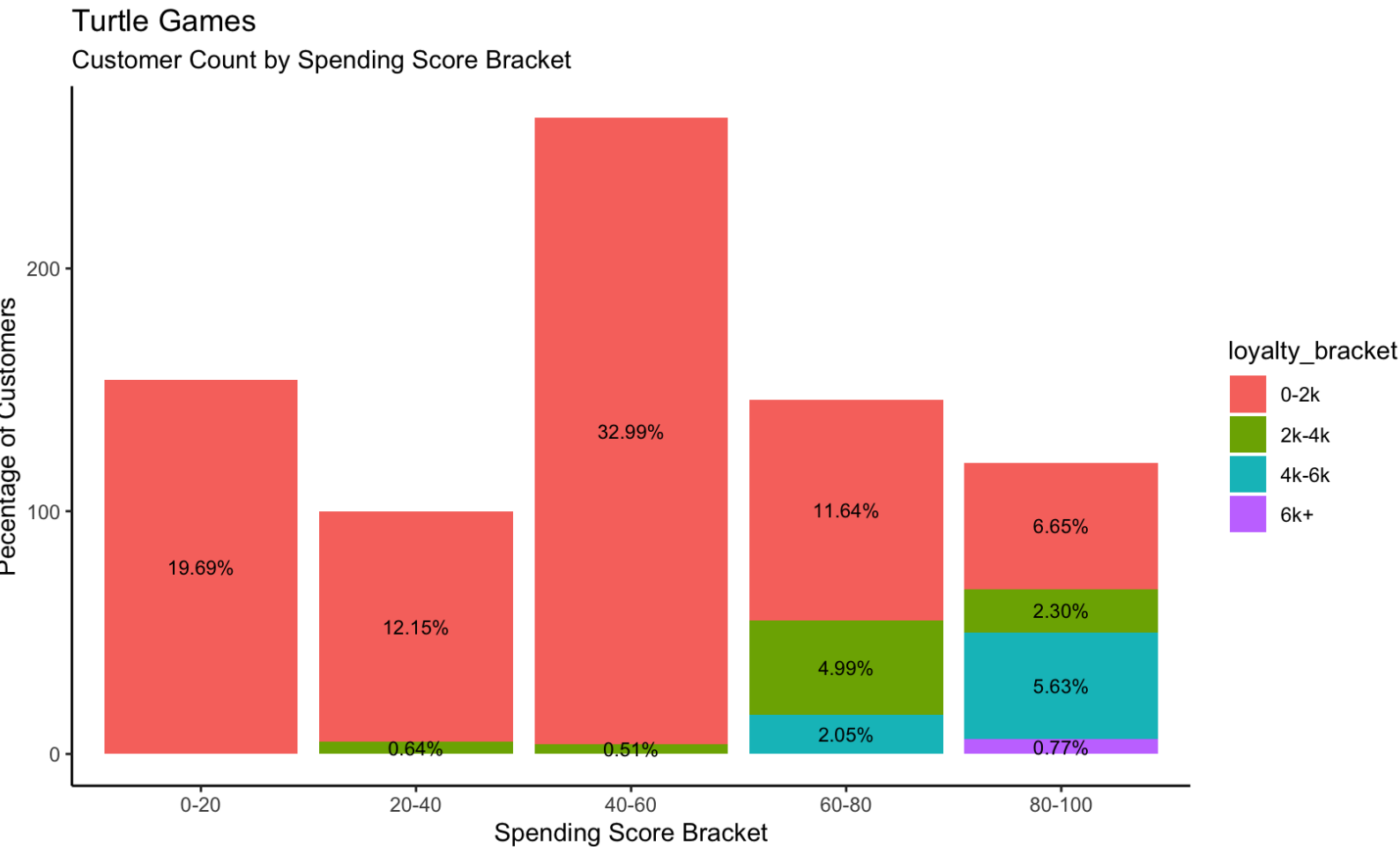


# Low Loyalty Program Engagement



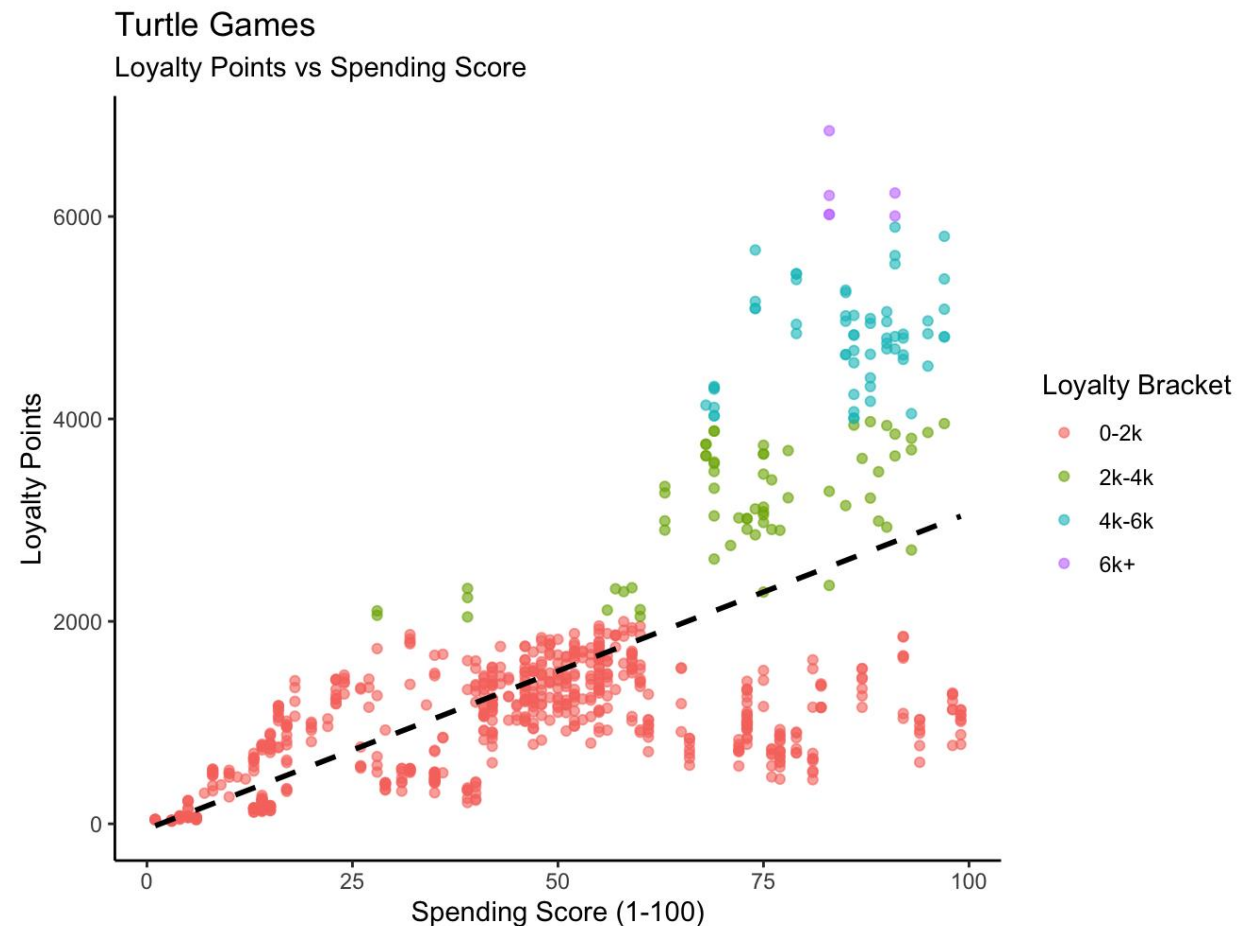
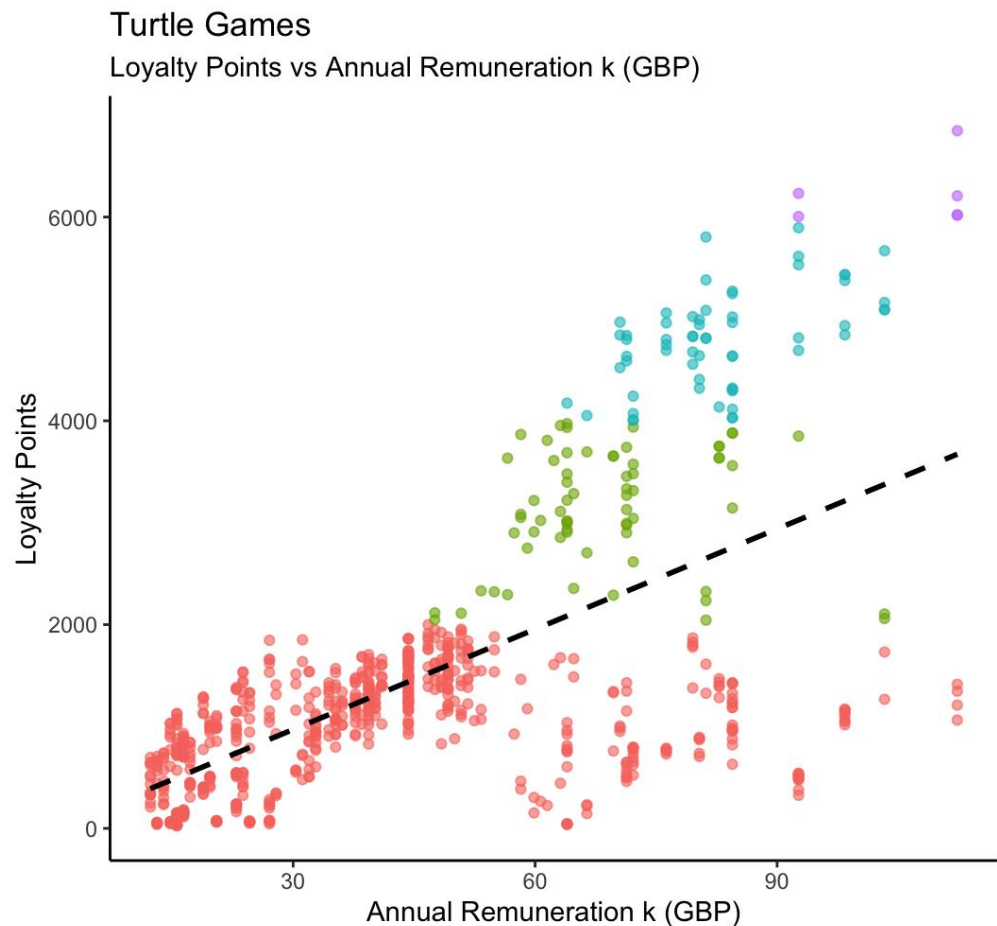
83%  
+  
0.7%

# Majority of Customers Show Moderate Spending Patterns

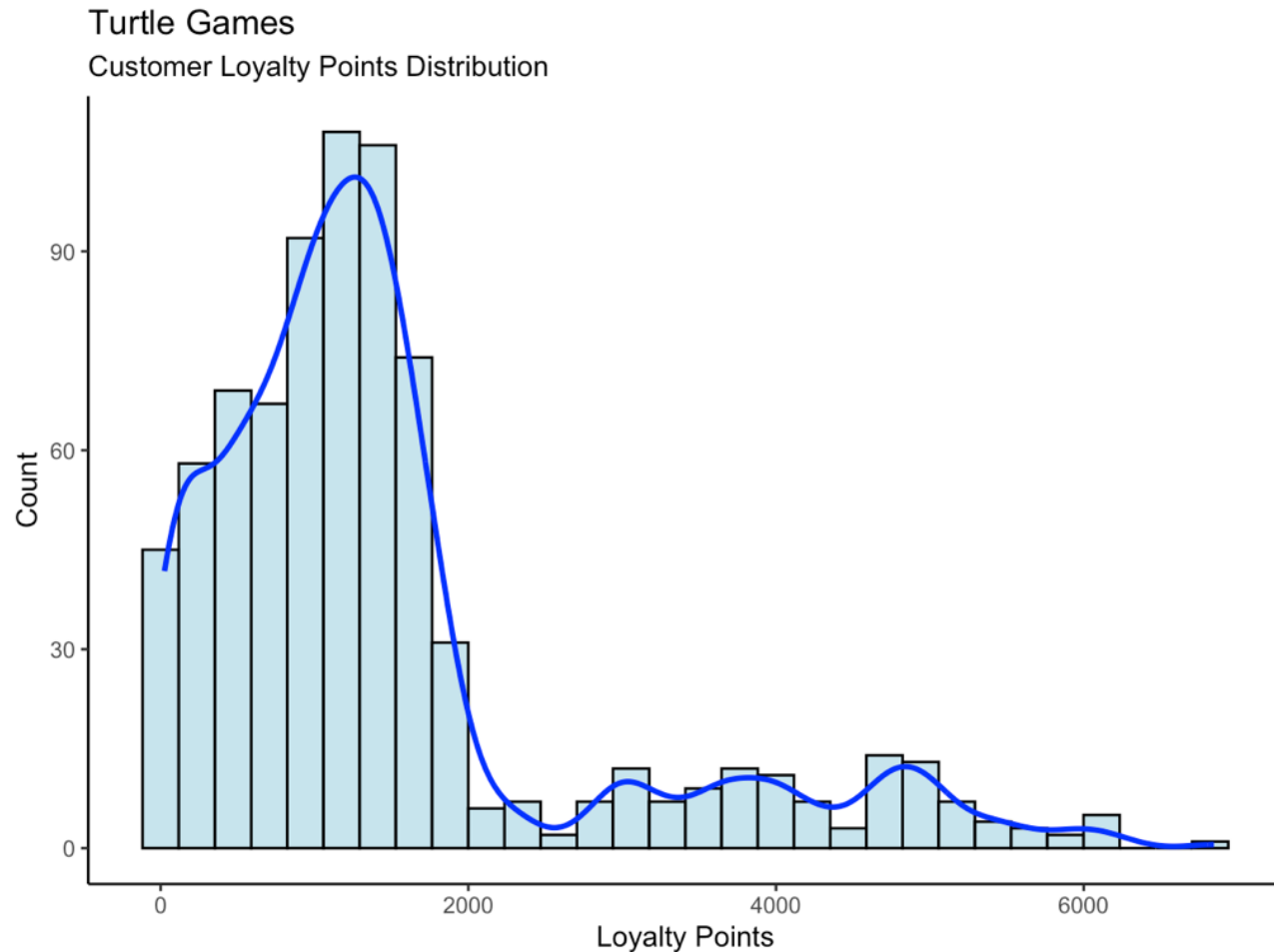


33%

# Positive Linear Relation Detected



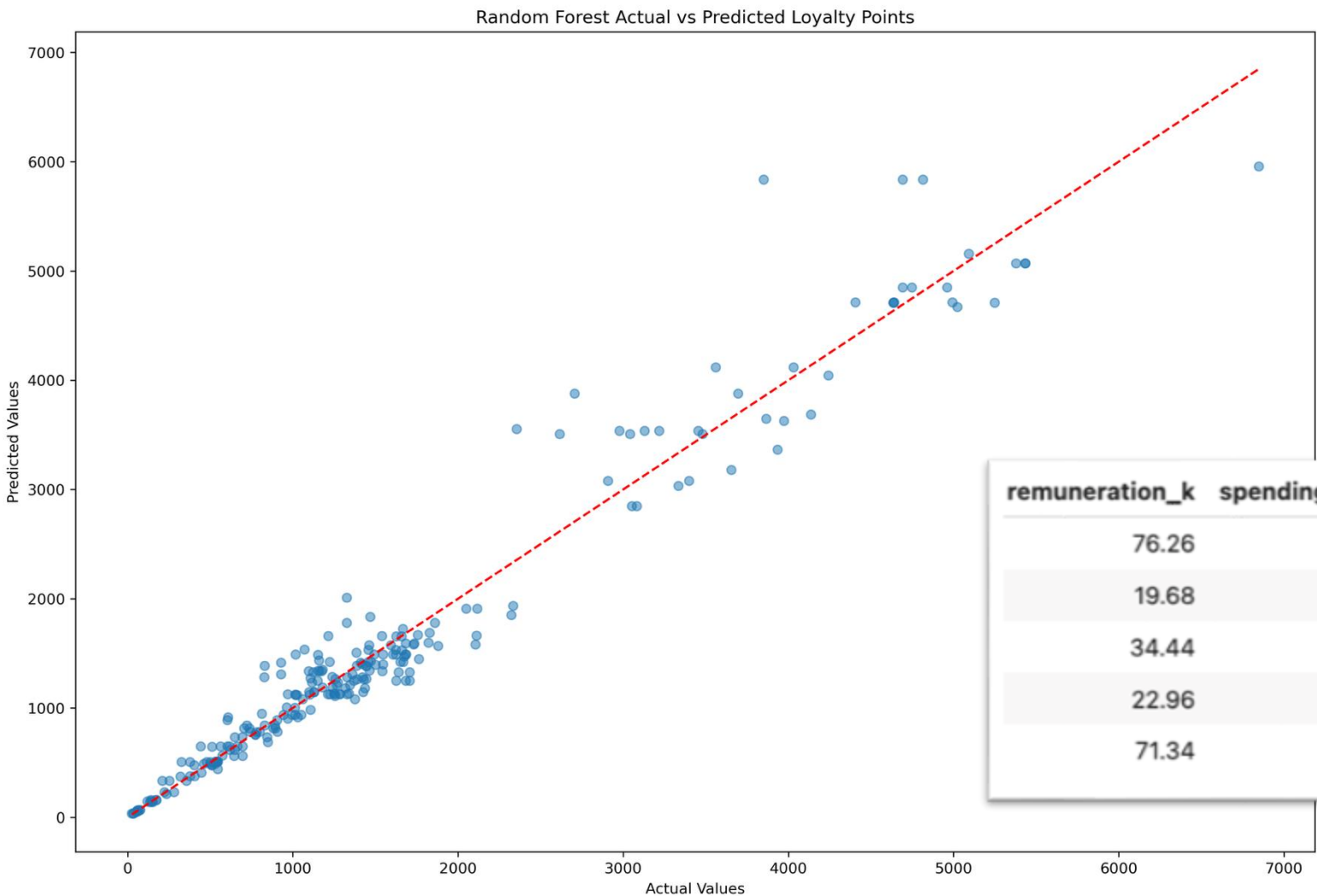
# Loyalty Points Distribution



Loyalty points are not normally distributed with a right skew



# Predict Loyalty Points



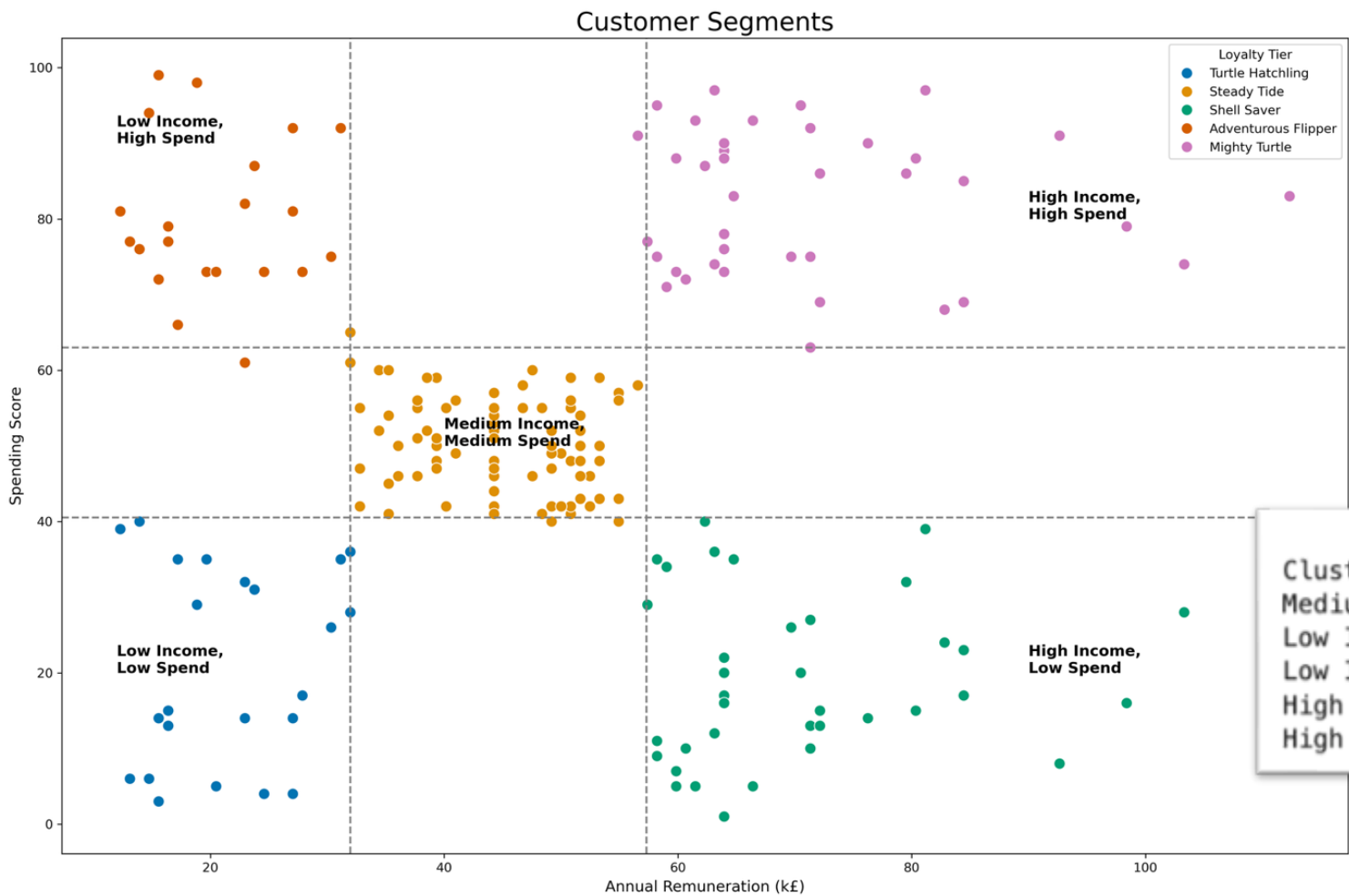
Predict 94.95% of the variability in the loyalty points

remuneration_k	spending_score	loyalty_points	predicted_loyaltypoints
76.26	90	4747	4849.624019
19.68	73	994	937.751520
34.44	60	1429	1263.722003
22.96	82	1369	1250.630798
71.34	13	618	617.529363

# Customer Segments



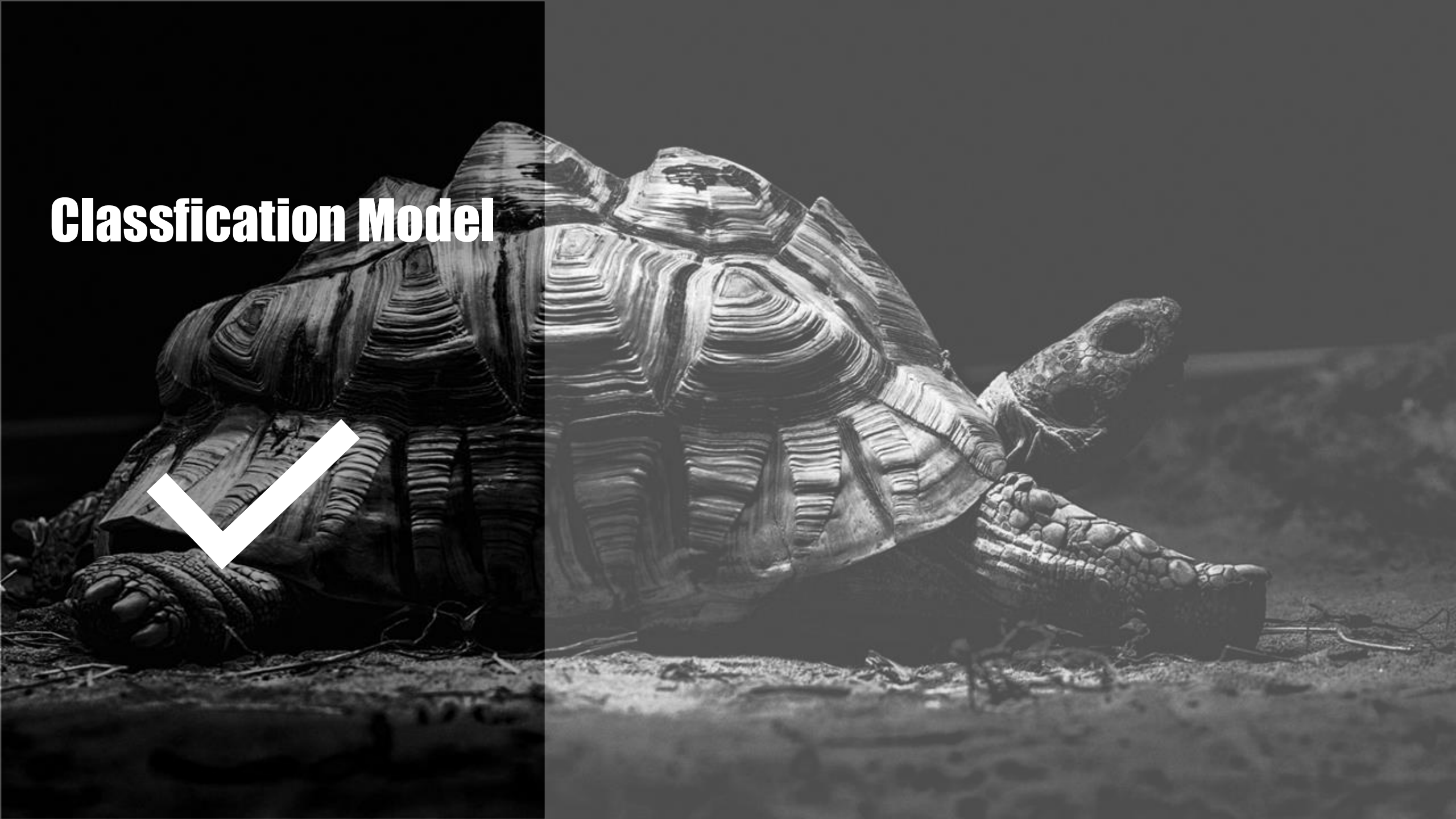
# Identify Customer Segments



Identified 5 customer segments based on income and spending patterns

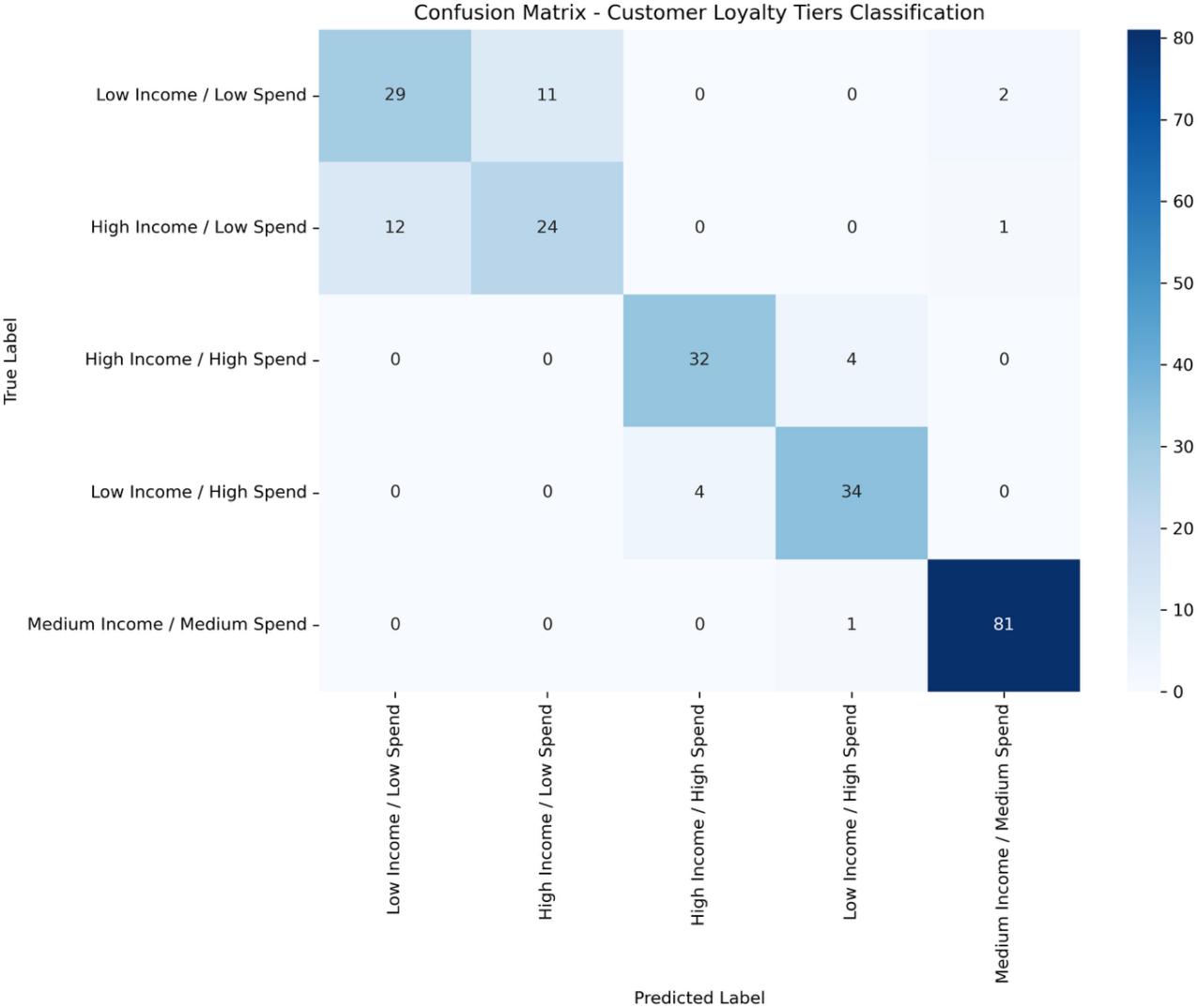
Cluster Segment	Count	Percentage
Medium Income / Medium Spend	273	34.91
Low Income / Low Spend	138	17.65
Low Income / High Spend	127	16.24
High Income / Low Spend	123	15.73
High Income / High Spend	121	15.47

**Classification Model**



# Classify New Customers

Identify high-spend customers with a precision of > 87%

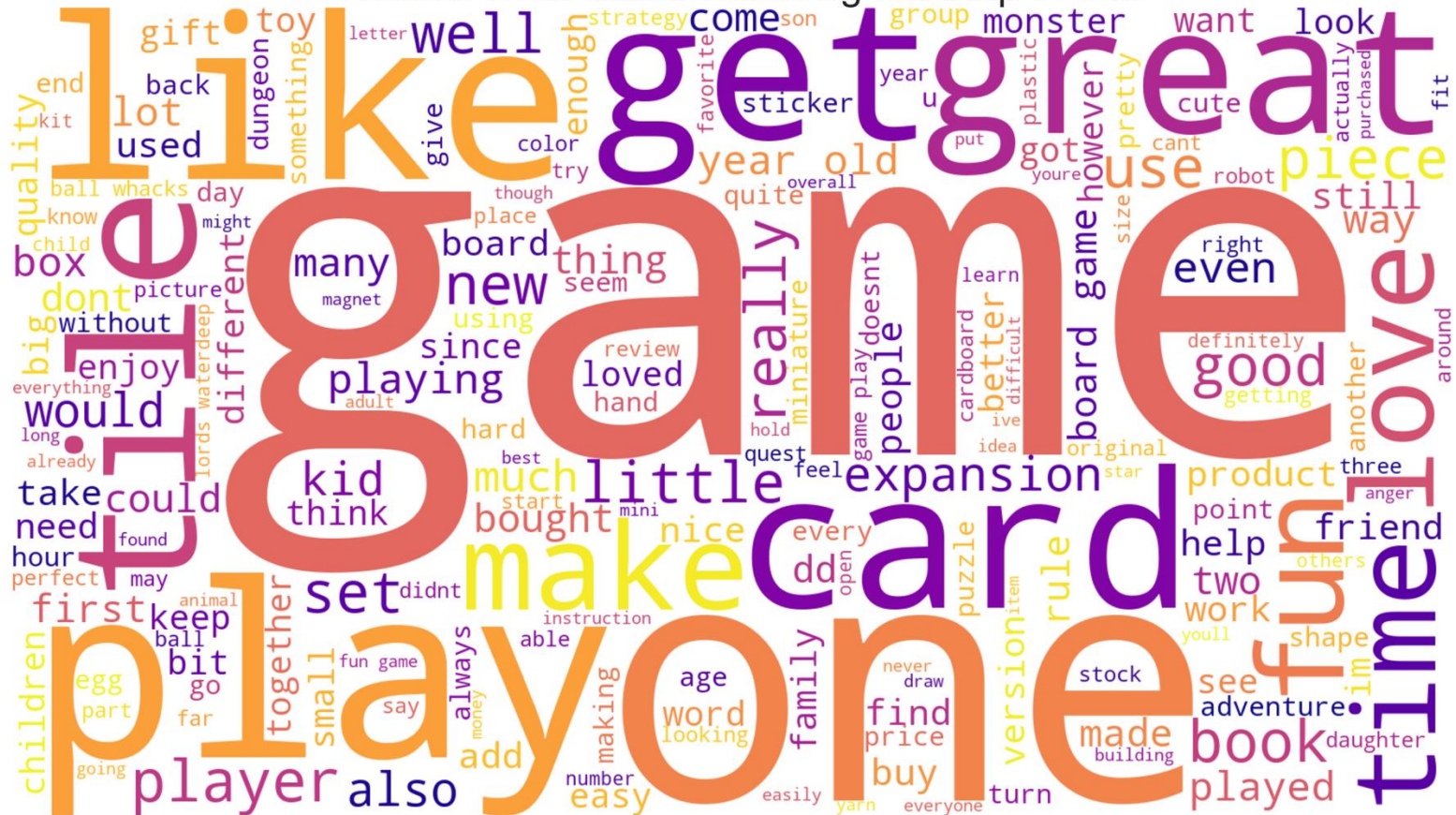


# Reviews Analysis





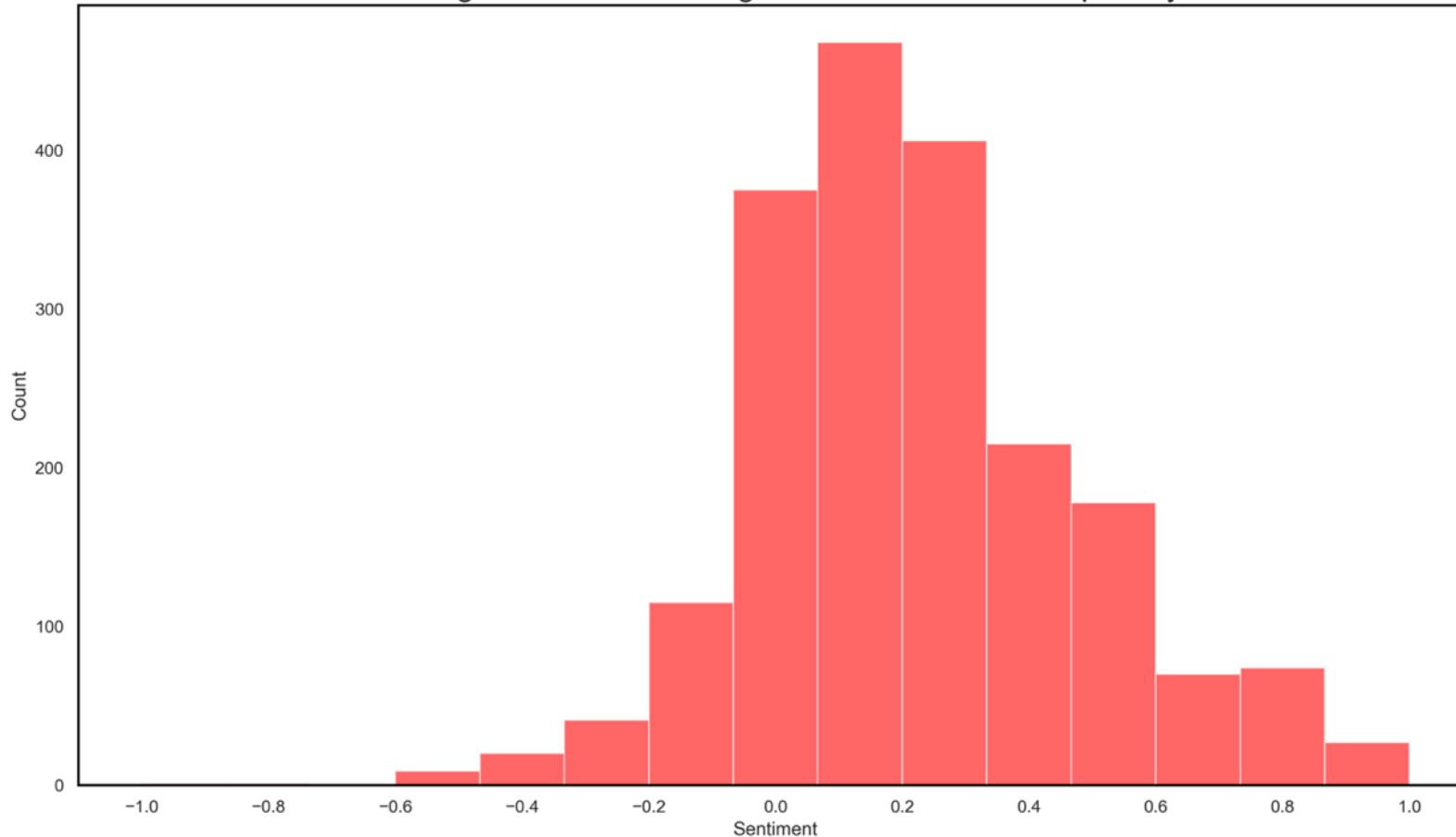
# Mix of Facts & Opinions



WordCloud confirms the noticed pattern, highlighting words like game, tile, play, card along with sentiment strong words like fun love great..etc

# Overall Moderately Positive Sentiment

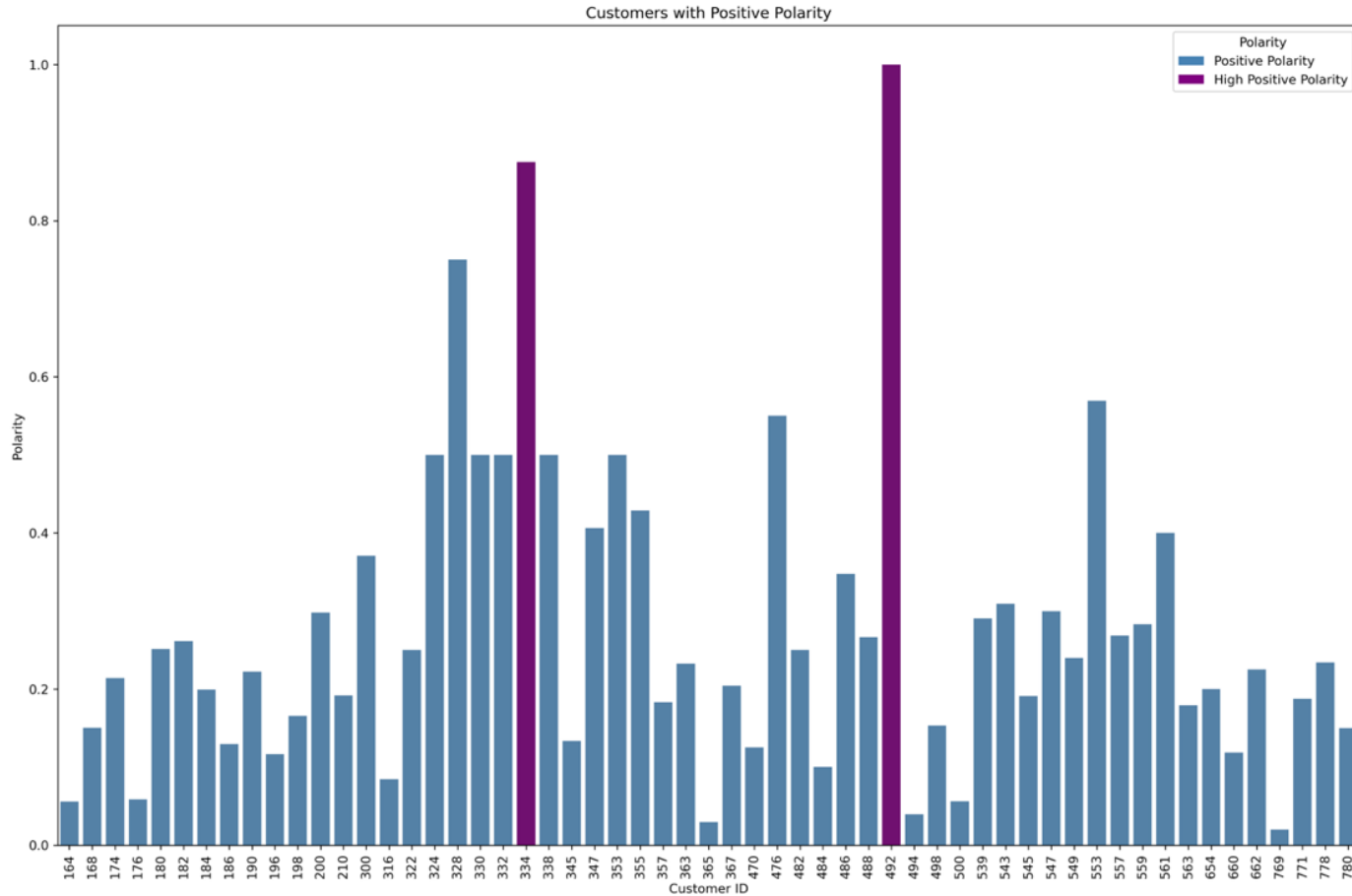
Turtle game reviews: Histogram of sentiment score polarity



Reviews don't show strong opinions or emotions  
Mostly a mix of facts and opinions

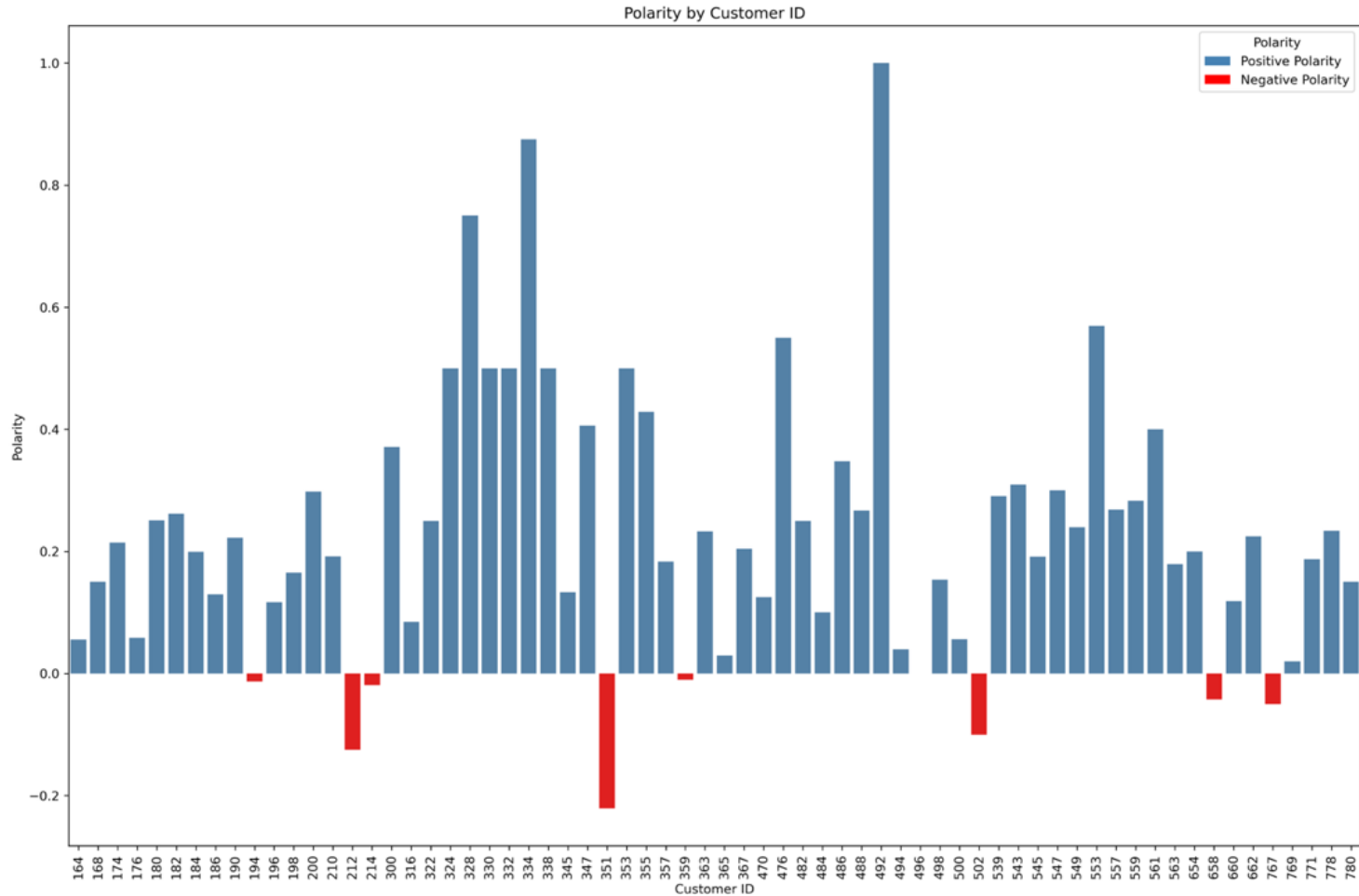


# Leverage Customers as Brand Ambassadors



High Loyalty Customers  
>0.8 overall Sentiment  
Score

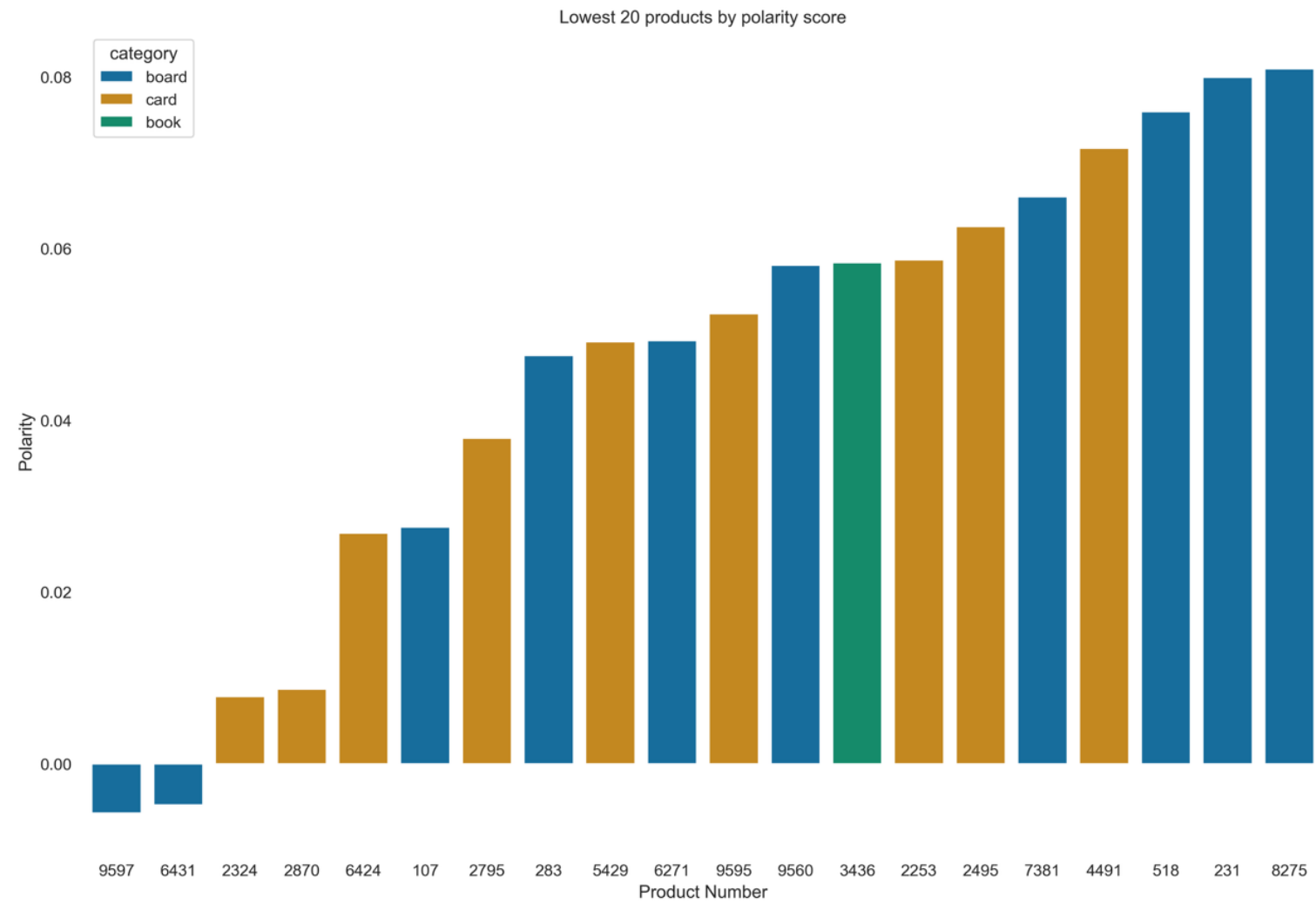
# Proactively Address Negative Sentiment



8 High Loyalty Customers  
identified as  
potential churn risk

# Assess Products with Negative Sentiment

2 Products with moderate negative sentiment



# Recommendations



# Recommendations & Next Steps

- Build a tiered loyalty program that rewards high-return customers (1)
- Provide loyalty-based discounts for the medium income / medium spend (~34% of the customers) to encourage retention and higher sales (2)
- Proactively address customers with negative reviews to avoid losing them (3)
- Leverage High-Loyalty Customers as brand ambassadors.

## Future Steps

- Check the sales and loyalty program performance quarterly
- Recheck the Customer Segments a year after the analysis to account for changes

# Works Cited

- (1) *helika.io*. [Online] Helika. <https://www.helika.io/top-3-best-customer-loyalty-programs-for-games/>
- (2) *Perkins, Carina*. Emarketer. [Online] June 2023. <https://www.emarketer.com/content/uk-loyalty-programs-2023>.
- (3) *Zinrelo*. zinrelo.com. [Online] Zinrelo, July 2023. <https://www.zinrelo.com/blog/customer-loyalty-program-metrics/>.
- (4) *Scikit Learn* [Online] 2025. [https://scikit-learn.org/stable/modules/generated/sklearn.model\\_selection.StratifiedShuffleSplit.html](https://scikit-learn.org/stable/modules/generated/sklearn.model_selection.StratifiedShuffleSplit.html).

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