Turtle Games Loyalty Program

Predictive modelling to grow sales

20th April 2024

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Background

Context

Turtle Games is a global manufacturer, retailer and reseller of its own and other companies' games and toys. The company collects sales and customer review data. It wants to use this data to support its' objective of growing sales.

Turtle Games has developed a set of questions rand objectives relating to:

- *Customer engagement with loyalty points*
- *Creation of prediction models to provide insight into customer loyalty points*
- *Customer segmentation for targeted marketing campaigns*
- *Use of text-based reviews to inform marketing decisions*

Turtle Games key metric is loyalty points.

Interpretation & Focus of Analysis

A. What are the customer demographics and how do customers acquire of loyalty points?

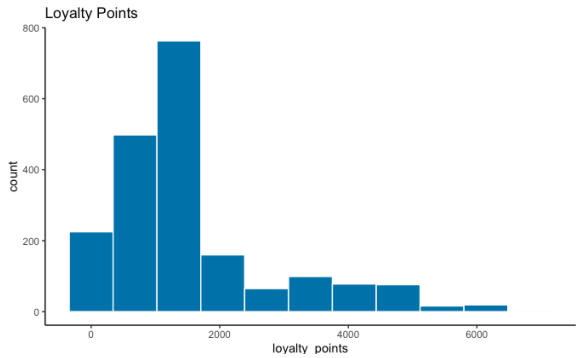
B. Can acquisition of loyalty points be modelled predicted?

C. Is there a customer segmentation that would inform where to spend marketing budget?

D. What can be learned from text-based customer reviews?

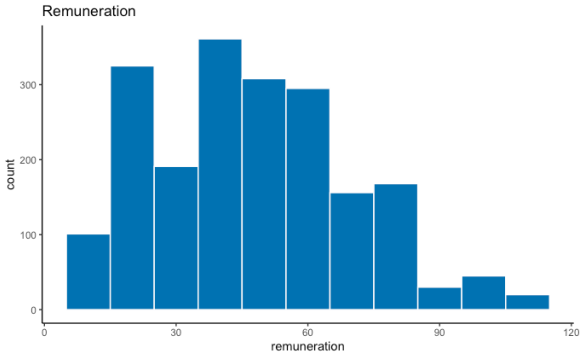
What are the customer demographics and how do customers acquire of loyalty points?

Loyalty Points



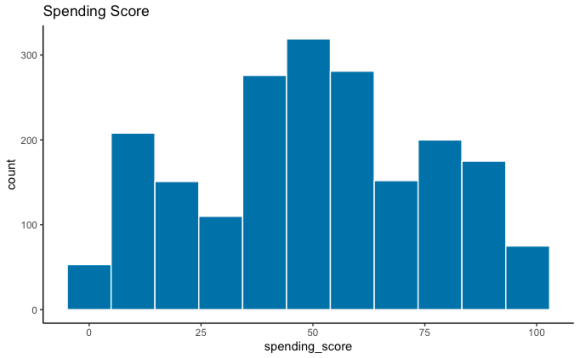
25 MIN 1,578 MEAN 6,847 MAX

Remuneration (k)



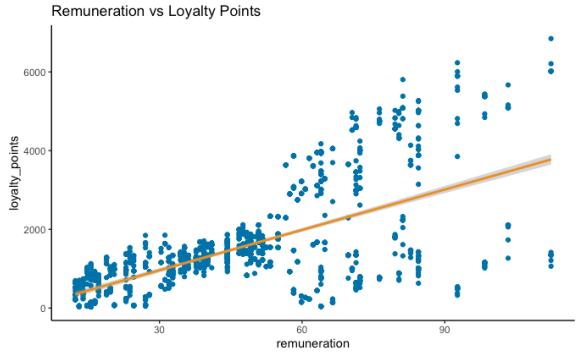
12.3 MIN 48.1 MEAN 112.3 MAX

Spending Score



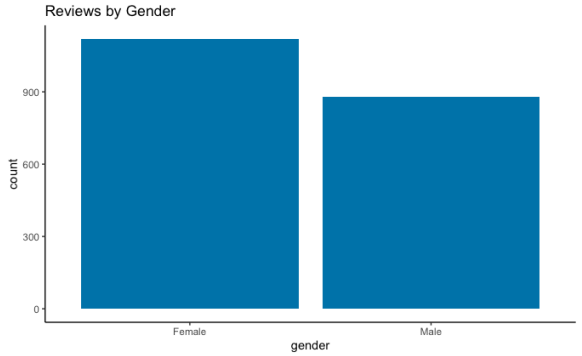
1 MIN 50 MEAN 99 MAX

Remuneration vs Loyalty Points



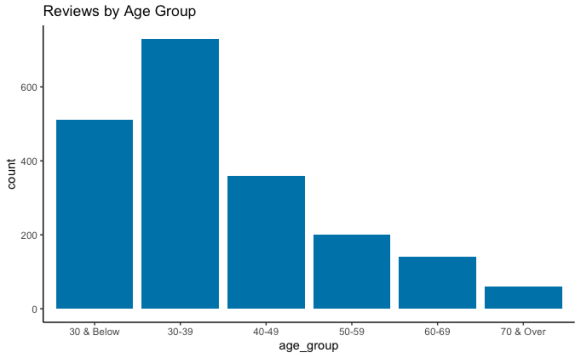
Loyalty points increase remuneration increases

Participants by Gender



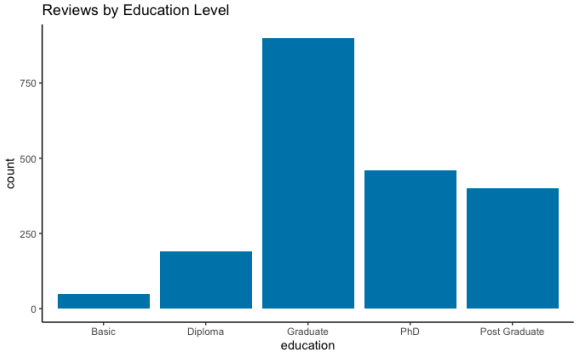
55% female, 45% Male

Participants by Age Group



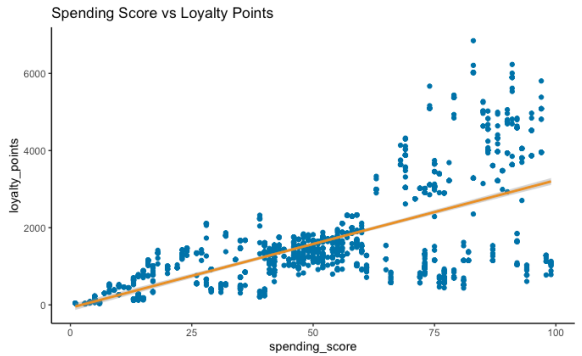
62% under 40 years old

Participants by Education Level



88% graduate education or higher

Spending Score vs Loyalty Points



Loyalty points increase spending score increases

Can acquisition of loyalty points be modelled predicted?

Multiple Linear Regression Model: Overall								
Loyalty Points	=	1700.32	+	34.33	Remuneration	+	32.64	Spending Score

Remuneration		Spending Score		>>>	Loyalty Points	Impact
Baseline	48	Baseline	50	>>>	1,580	*NA*
Baseline + 10	58	Baseline	50	>>>	1,923	343
Baseline	48	Baseline + 10	60	>>>	1,906	326
Baseline + 10	58	Baseline + 10	60	>>>	2,250	670

Commentary

Following ***applies generally*** to all customers:

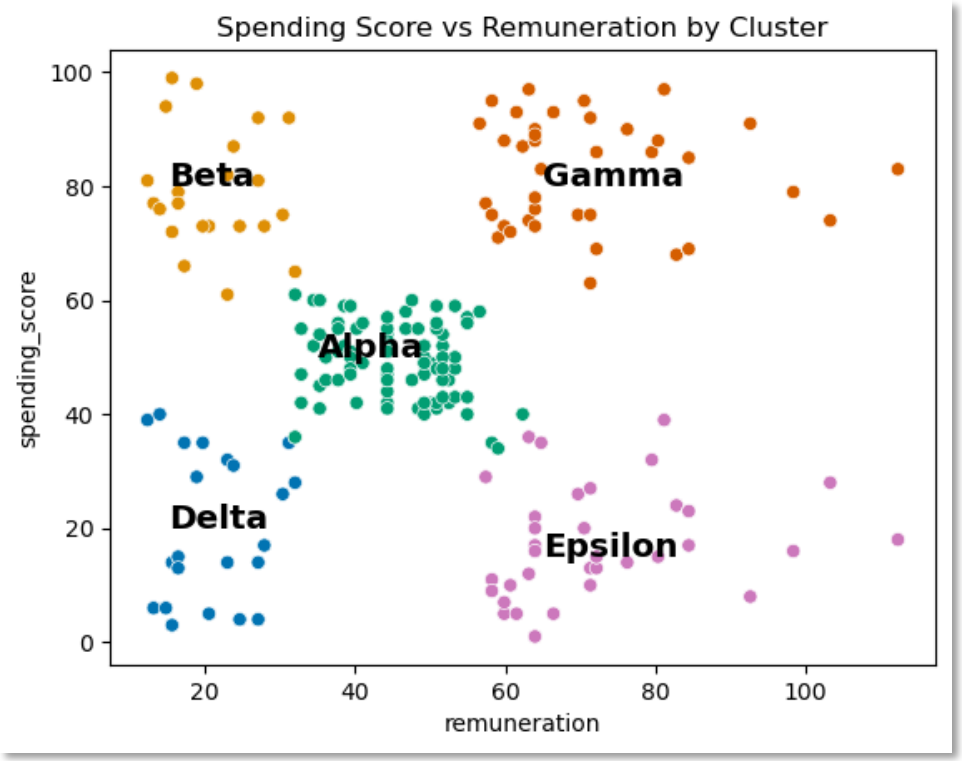
- Model explains 83% of the variation in loyalty points
- Remuneration cannot be influenced by Turtle Games, but spending score can
- For ***a 10-point increase in spending score*** the model predicts a ***loyalty points increase of 343***

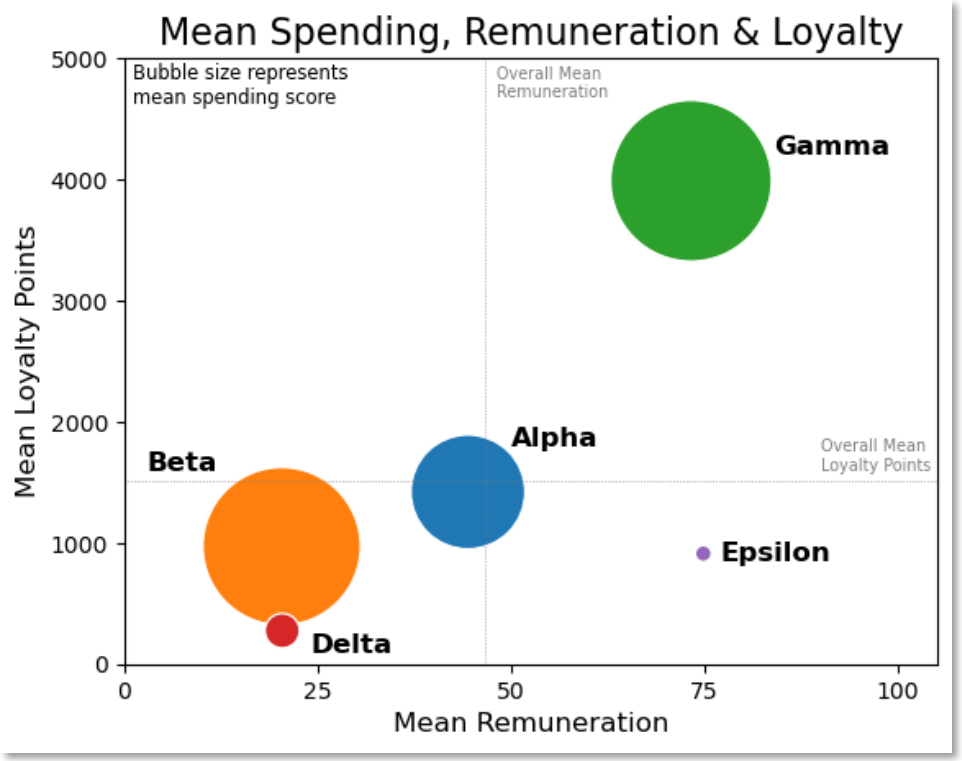
Recommendations

Use this general predictive model for setting marketing targets and prioritising budget allocations.

Gain access to a larger data set to improve predictive modelling.

Is there a customer segmentation that would inform where to spend marketing budget?





Commentary

The Epsilon cluster has high remuneration like Gamma, but the lowest spending score and lowest loyalty points of the clusters. ***Turtle Games*** cannot affect remuneration, but it ***can affect customer spend through marketing***.

Is there a customer segmentation that would inform where to spend marketing budget?

Multiple Linear Regression Model: Epsilon Cluster								
Loyalty Points	=	- 808.02	+	11.51	Remuneration	+	49.53	Spending Score

Remuneration		Spending Score		>>>	Loyalty Points	Impact
Hold constant at mean value	75	Increase by Increments of 10	10	>>>	549	*NA*
	75		20	>>>	1,044	495
	75		30	>>>	1,539	495
	75		40	>>>	2,035	495
	75		50	>>>	2,530	495
	75		60	>>>	3,025	495
	75		70	>>>	3,520	495
	75		80	>>>	4,016	495
	75		90	>>>	4,511	495

Commentary

Following only ***applies to the Epsilon cluster*** of customer:

- Model explains 95% of the variation in loyalty points
- Remuneration cannot be influenced by Turtle Games, but spending score can
- For ***a 10-point increase in spending score*** the model predicts ***a loyalty points increase of 495***

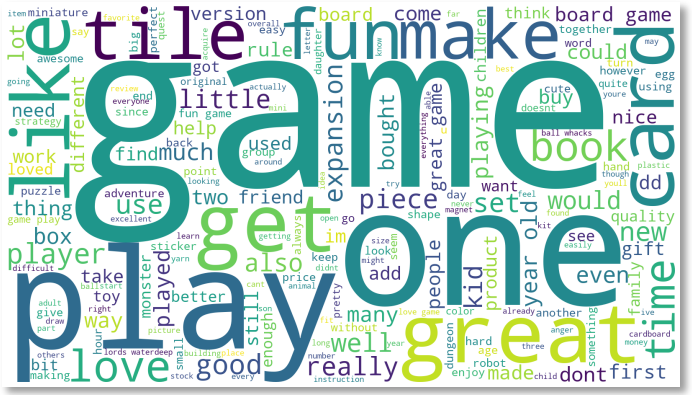
Recommendations

Conduct A/B testing of marketing or discounting programs on the Epsilon cluster to increase spending score and loyalty points acquisition.

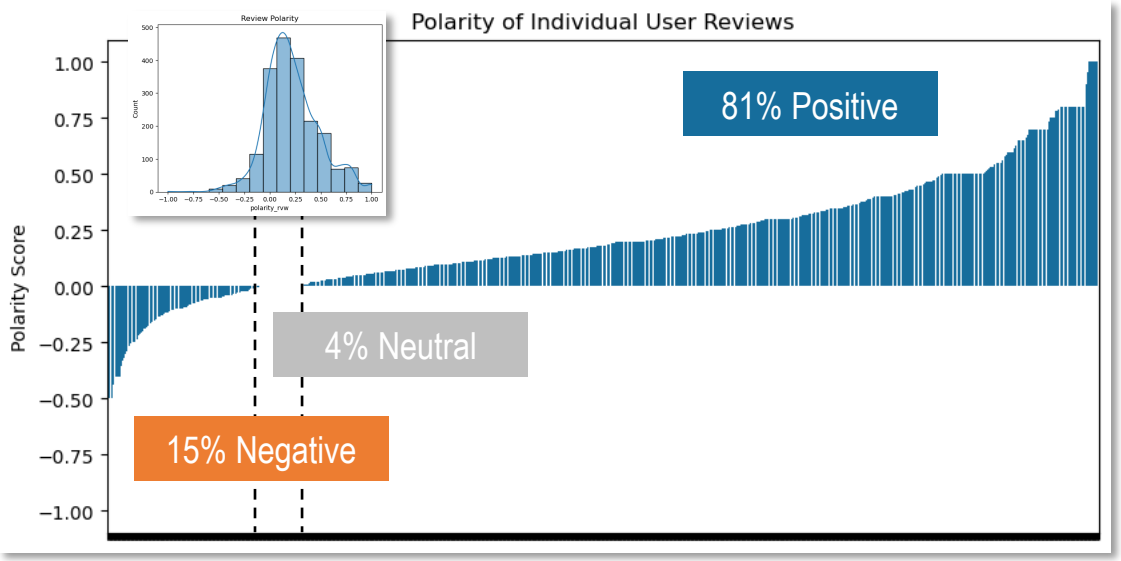
Replicate the Epsilon predictive modelling for other clusters. Identify other cause and effect relationships to increase spending score and acquisition of loyalty points.

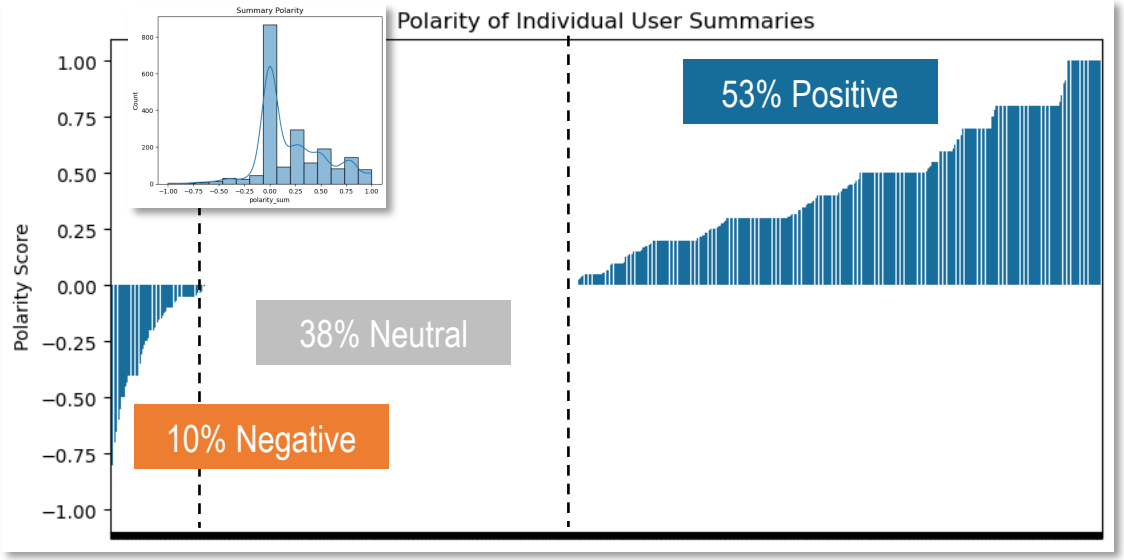
What can be learned from text-based customer reviews?

REVIEWS



REVIEW SUMMARIES





Commentary

Review and Summary both exhibit ***22% positive sentiment***, good … but it could be better?.

Sentiment is calculated across all reviews and should be treated as a general interpretation

Recommendations

Benchmark sentiment analysis against competitors. Is current sentiment being good enough? Does it need to be improved in a targeted or holistic way. Valuable insight could be gained on products, markets and competitors.

Gain access to a larger data set to increase the amount of product related data enabling product level insights and actions to be developed.

Recommendations

- Use the overall (general) predictive model for setting marketing targets and prioritising budget allocations.

- Conduct A/B testing of marketing or discounting programs on the Epsilon cluster to increase spending score and loyalty points acquisition.

- Replicate the Epsilon predictive modelling for other clusters. Identify other cause and effect relationships to increase spending score and acquisition of loyalty points.

- Gain access to a larger data set to improve predictive modelling and increase the amount of product related data enabling product level insights and actions to be developed.

- Benchmark sentiment analysis against competitors. Is current sentiment being good enough? Does it need to be improved in a targeted or holistic way. Valuable insight could be gained on products, markets and competitors.