

DA301 Assignment

Introduction

For the purpose of this report, the main questions posed are:

- How do customers accumulate loyalty points? (Week 1)
- How useful are remuneration and spending scores data? (Week 2)
- Can social data (e.g. customer reviews) be used in marketing campaigns? (Week 3)
- What is the impact on sales per product? (Week 4)
- How reliable is the data (e.g. normal distribution, Skewness, Kurtosis)? (Week 5)
- Are there any possible relationships in sales between North America, Europe and global sales? (Week 6).

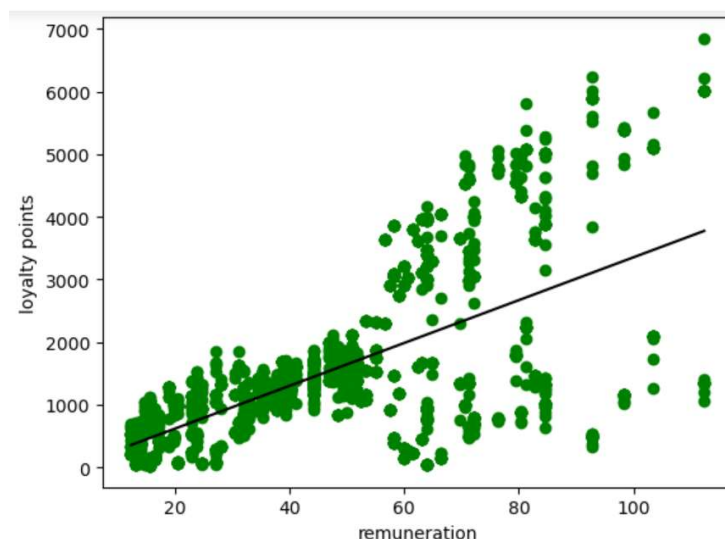
The above questions will be considered in sequence.

1. How do customers accumulate loyalty points?

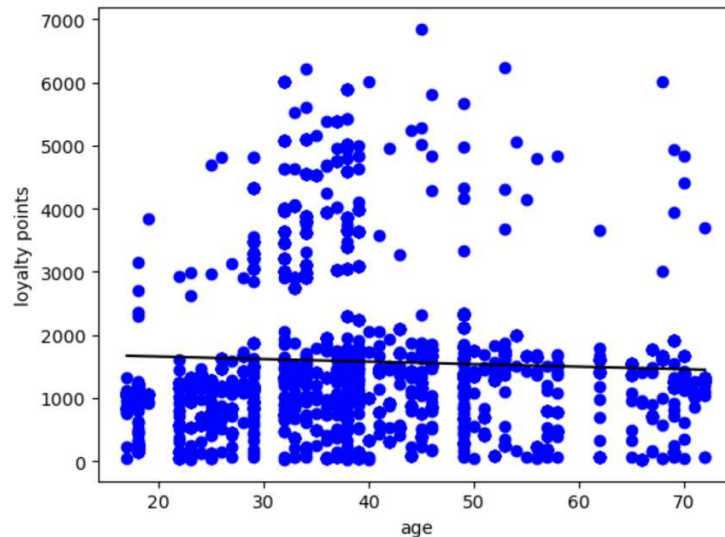
The steps followed to process the data are listed in the Technical Appendix, Note 1.

The strongest correlation (R^2 of 0.45) was between spending and loyalty points, as one might expect. Each unit the 'spending score' increased loyalty points by 33 units.

Remuneration showed the second highest R^2 correlation coefficient of 0.38. Data points were tightly grouped along the regression line for lower incomes, ie. below £50k. Over £50k the data points are widely dispersed around the regression line – as shown in the scatterplot below. This seems to confirm that loyalty points are more important to customers on lower incomes, as we might expect.



There appears to be no correlation at all between age and loyalty points, as shown in the scatterplot below. Hence the low R^2 value of 0.002 and high F-statistic:



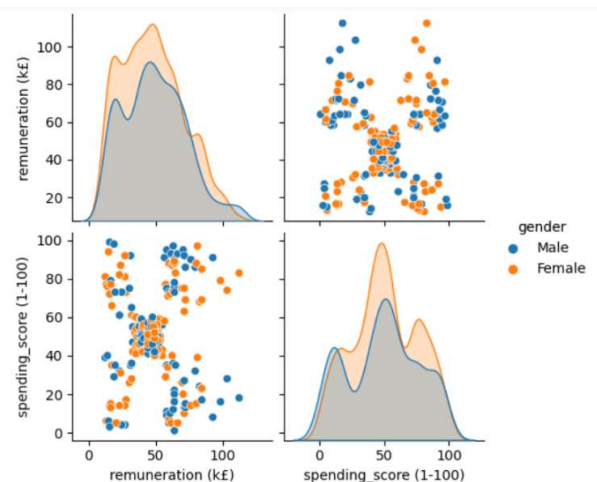
Recommendations: 1) Further analysis should be done in order to segment remuneration into clusters, in order to tailor marketing campaigns; 2) Marketing should be 'age agnostic'

2. How useful are remuneration and spending scores data?

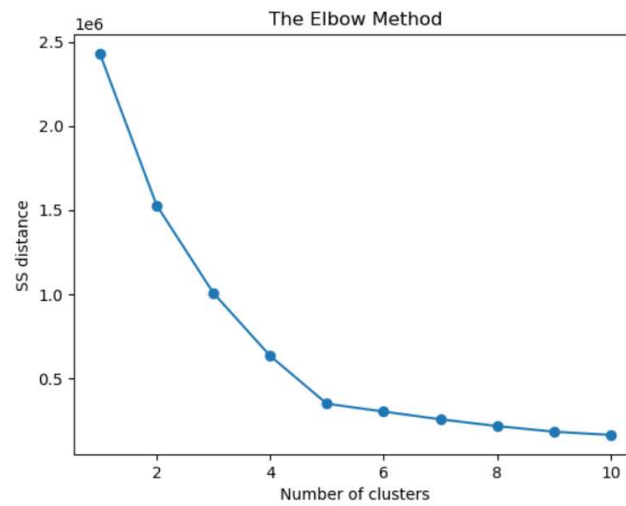
Further analysis was undertaken on the relationship between remuneration and spending scores. K-means clustering was used to identify the optimal number of clusters into which the customer base can be segmented. This would allow marketing campaigns to adopt a different approach in targeting each segment.

The steps followed to process the data are listed in the Technical Appendix, Note 2.

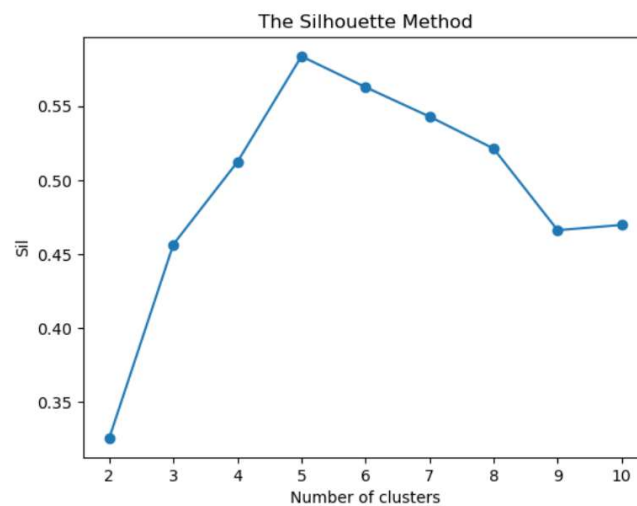
The pair plot below suggests that the relationship between spending and remuneration can be split into 5 clusters:



This was confirmed using the Elbow and Silhouette techniques:

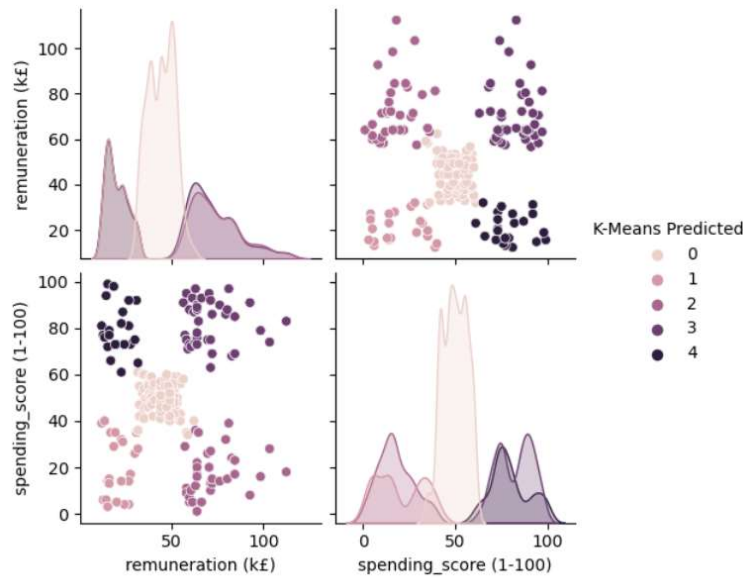


The inflexion point in the Elbow method suggests that 5 is the optimum number of clusters.



The inversion point in the Silhouette graph confirms that 5 is the optimum number of clusters.

For further confirmation, pair plots were produced for 4, 5 and 6 clusters. The result of clustering into 5 groups is shown below:

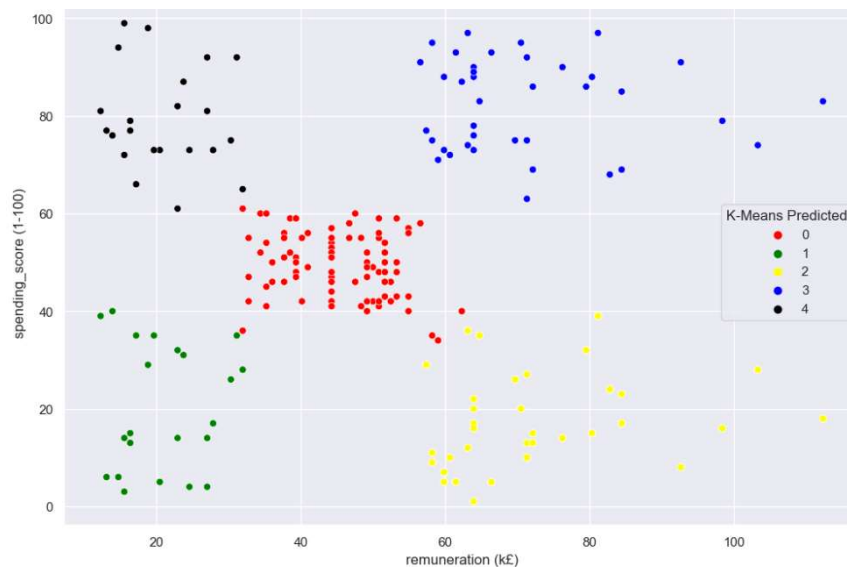


The number of data points in each cluster was as follows:

0: **774**; 1: 271; 2: 330; 3: 356; 4: 269

Using 6 clusters ($n_clusters = 6$) does not break the largest cluster of 774 data points into subgroups, and so has no additional benefit to 5 clusters, thus 5 is the optimum number.

The k-means cluster numbers were then used to add hue (colour) to a scatterplot showing the relationship between spending and remuneration.



Recommendations: 1) Customers should be segmented into 5 groups according to their remuneration and spending scores; 2) The group showing high spending in the lower remuneration segment (black dots) should be directly targeted with a tailor-made marketing campaign.

Customer reviews were downloaded from the website of Turtle Games in order to see whether they might assist the Marketing Department to customise campaigns for each customer segments. The client has requested that we:

- The steps followed to process the data are listed in the Technical Appendix, Note 3.

[illegible][illegible]

The word clouds show positive words such as ‘fun’ and ‘great’ appearing with reassuring frequency, and no negative words included.

The fifteen most common words and their frequency of occurrence were:

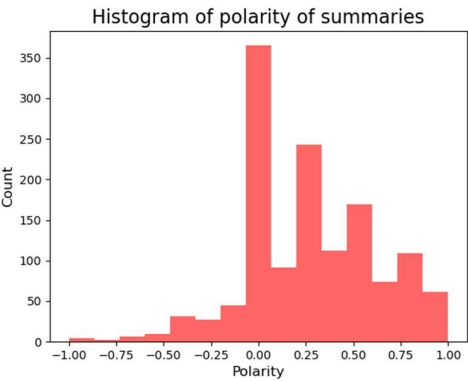
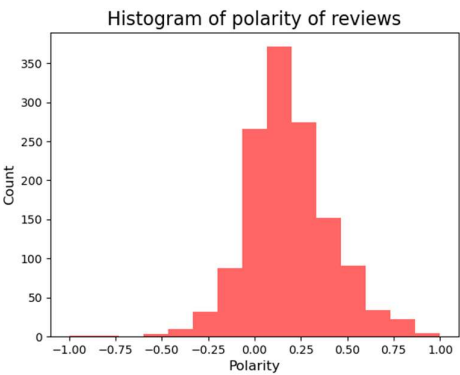
‘Review’ column:

Word	Frequency
game	1302
one	456
play	427
fun	372
like	369
great	316
get	291
tiles	279
cards	275
really	268
would	252
book	249
new	237
time	230
well	227

‘Summary’ column:

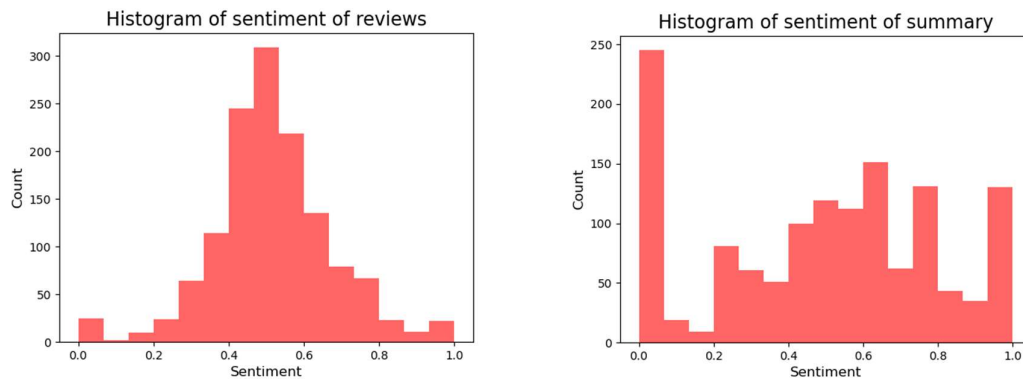
Word	Frequency
game	156
fun	80
great	77
like	47
love	43
good	29
expansion	29
old	26
kids	25
board	24
little	23
really	23
book	19
year	19
loved	18

The histograms summarising the polarity of the ‘Review’ and ‘Summary’ columns are mostly positive, with a considerable majority above zero:



The average review polarity indicates a generally positive sentiment (0.181). Additionally, the average summary polarity suggests a slightly more positive sentiment (0.272).

Overall, the average review and summary sentiments – illustrated by the histograms below – lean towards positive (0.513 & 0.483). There is a significant number of ‘Summary’ comments with a low sentiment score that warrant examination.



The top 20 negative and positive comments are listed in Appendix 2.

Recommendations: 1) Customers’ negative reviews should be used to identify any failings that the company needs to rectify with urgency in order to prevent customers sharing negative reviews with friends. 2) Customers’ positive reviews can reveal aspects of Turtle’s games that should be highlighted in marketing, for example:

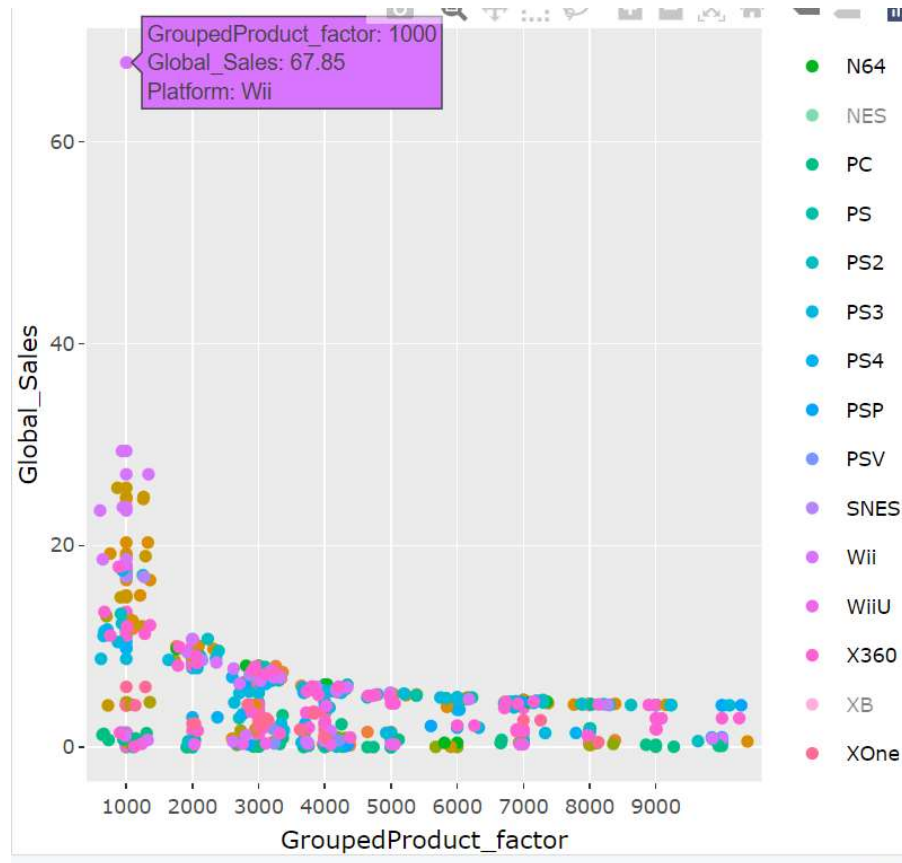
- The ‘dungeon crawler’ game is well received
- Products for preschoolers are popular
- The ‘expansion pack’ is an effective addition to the product range

4. What is the impact on sales per product

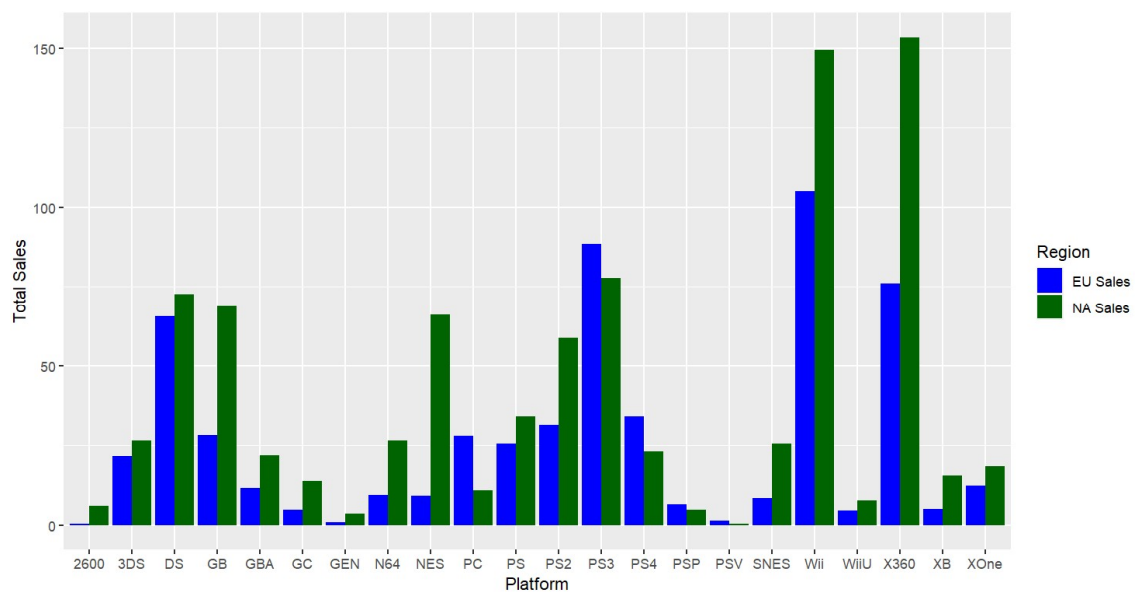
Analysis of sales per product was performed using “R” software at the request of Turtle’s management. The steps followed to process the data are listed in the Technical Appendix, Note 4.

Various graphs were produced in order to gain sales insights. The first plot, as shown below, was a scatterplot showing sales grouped by product factor with a hue for the platform that the game operates on. The plot shows some significant outliers for successful sales, with the Wii platform (purple hue) having the largest outlier and a number of additional outliers.

The product that was the largest outlier has the code ‘107’ and it has sold well in both North American and Europe, with sales of £34.0 million and £23.8 million respectively.



The histogram plot below shows that the X360, DS, GB and Playstation family of platforms are also of importance to Turtle's sales figures. NA sales are well ahead of the EU for the X360, and to a lesser extent for the Wii. NA sales were higher than the EU for every platform except PC and PS3.



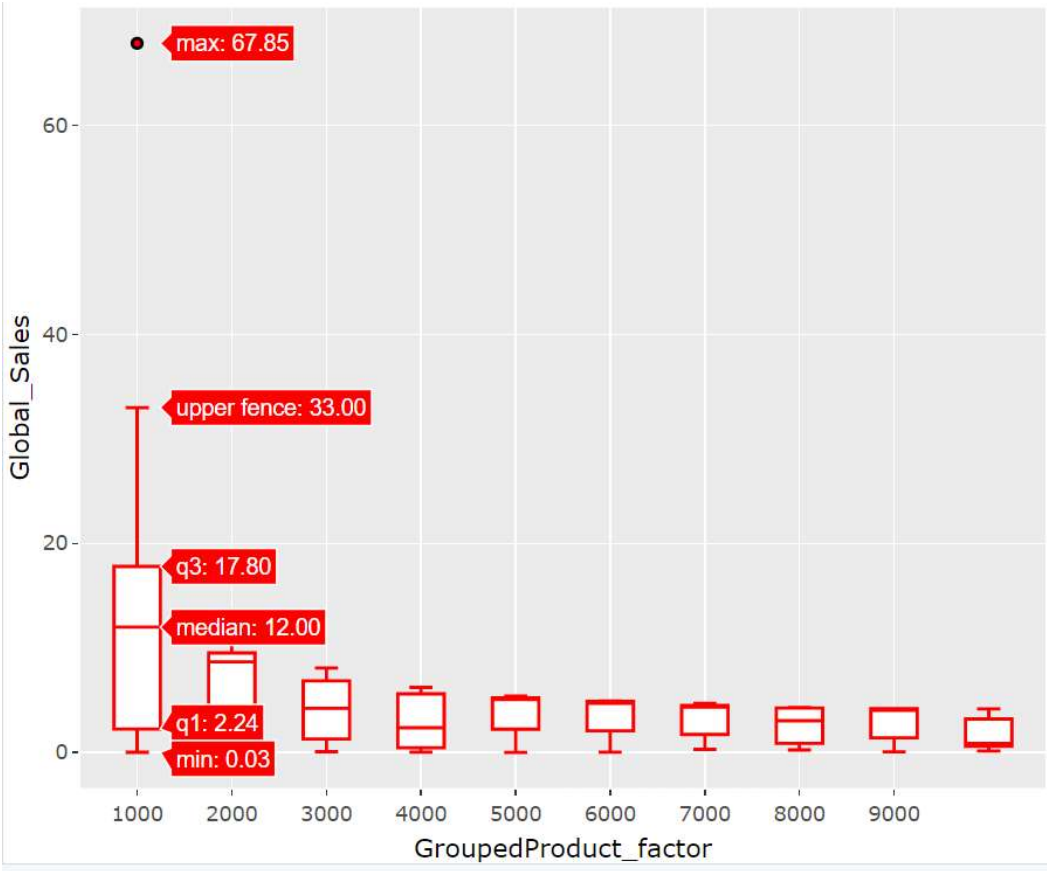
The 'groupby' function was used to produce a 'tibble' summary of the bestselling products, ordered by global sales. Product number 107 was the best seller by a significant margin:

A tibble: 175 × 4

	Product_factor	EU_Sales	NA_Sales	Global_Sales
	<fct>	<dbl>	<dbl>	<dbl>
1	107	23.8	34.0	67.8
2	123	4.01	26.6	37.2
3	195	10.6	13	29.4
4	231	9.03	12.9	27.1
5	249	7.29	9.24	25.7
6	254	2.42	21.5	29.4
7	263	7.57	9.33	24.6
8	283	7.54	11.5	23.8
9	291	5.79	12.0	23.5
10	326	0.52	22.1	23.2

It should be noted however, that total global sales are £1,878 million and that the total count of products is 351, giving an average sale value per stock item of £5.35 million.

The boxplot below shows that products with codes 3000 to 9000 have an average global sales value close to £5.35 million. Product with codes 0-999 showed a much wider dispersion of sales values, and to a lesser degree so did those with codes 1000 to 1,999:

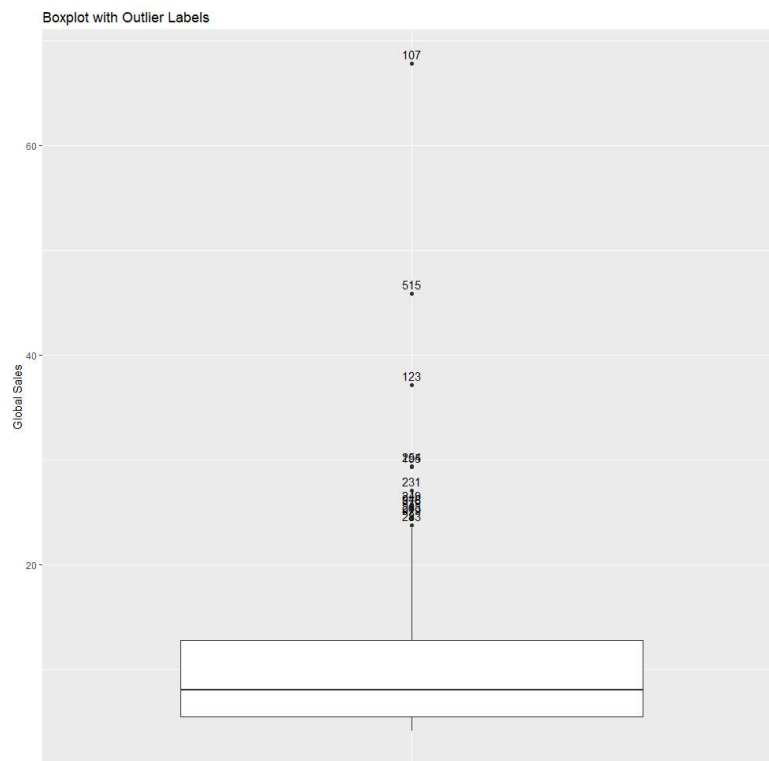


Recommendation: The large number of products and their wide disparity in global sales success presents a stock holding risk for the company. Products should be produced or purchased in low quantities until it is clear that sales will outperform the median.

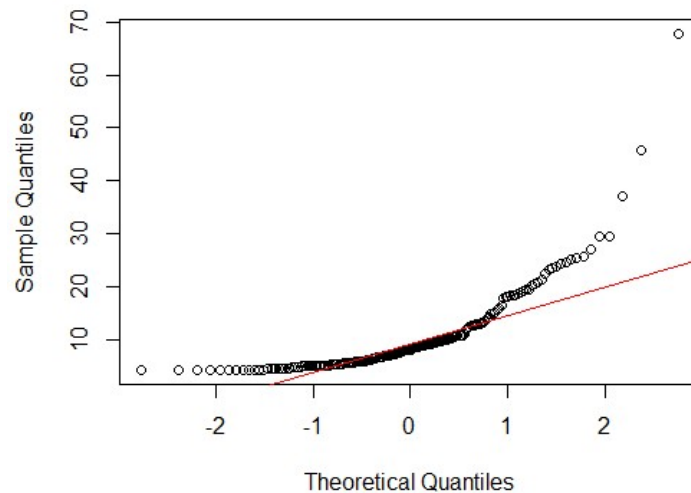
5. How reliable is the data (eg. is it normally distributed)?

The steps followed to process the data are listed in the Technical Appendix, Note 5.

The DataExplorer module of R produces a number of graphs. The boxplot showing significant outliers is shown below:



This suggests that the data is skewed towards the right tail. Further tests were done to confirm this, including a Q-Q plot for Global sales figures: .



The plot shows a significantly skewed distribution away from the red reference line for the right tail of the distribution.

Conclusions:

1) Shapiro-Wilk normality tests were performed on Global sales, North American Sales and EU sales. All three data sets showed significant deviation from a normal distribution. The p-values were well below 0.05, indicating that the tests were significant.

```
data: df_sales$Global_Sales
W = 0.70955, p-value < 2.2e-16
```

```
data: df_sales$NA_Sales
W = 0.69813, p-value < 2.2e-16
```

```
data: df_sales$EU_Sales
W = 0.74058, p-value = 2.987e-16
```

A test result of 1.0 for Shapiro-Wilk would indicate normality, with values below that indicating that the data is not normally distributed.

2) The skewness and kurtosis tests for Global sales had the following outcomes:

```
skewness(df_sales$Global_Sales)
[1] 3.066769
kurtosis(df_sales$Global_Sales)
[1] 17.79072
```

This indicates that the sales data has positive skewness, indicating a longer right tail. The kurtosis of 17.79 suggests a highly peaked distribution with heavy tails, potentially containing outliers.

6. Are there any relationships between North American, European and Global sales?

The steps followed to generate the models listed below are listed in the Technical Appendix, Note 6.

Simple linear model (model1), Global_Sales vs NA_Sales:

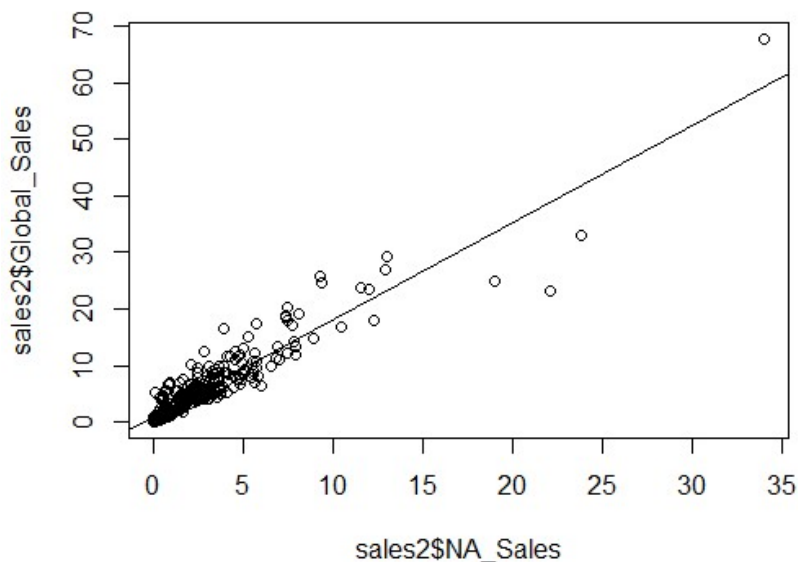
This model had a highly significant R^2 of 0.87 at a p-value well below 0.05:

Coefficients:

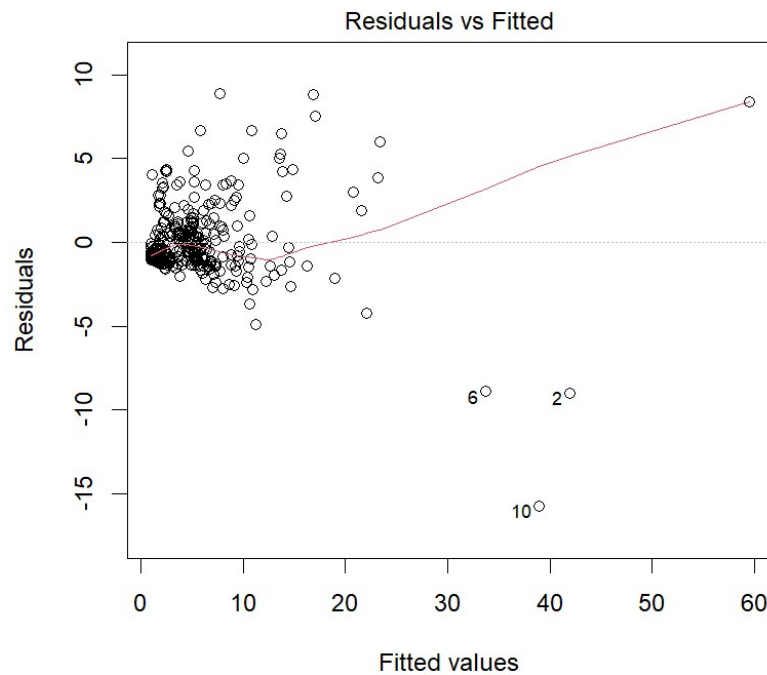
	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	1.01232	0.14752	6.862	3.09e-11 ***
NA_Sales	1.71797	0.03485	49.300	< 2e-16 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.226 on 350 degrees of freedom
Multiple **R-squared: 0.8741**, Adjusted R-squared: 0.8738
F-statistic: 2430 on 1 and 350 DF, p-value: < 2.2e-16



The AB line on the scatterplot above shows a good fit. This is unsurprising to some extent, as North American sales are the largest component of Global sales. There are, however, some significant residuals, particularly for the data in rows 1, 2, 6 and 10 as shown below:



Linear model after removal of outliers (model2):

A simple linear regression model was created for a second time after the removal of rows 1,2,6,10. The model summary data showed a higher R^2 of 0.904:

```

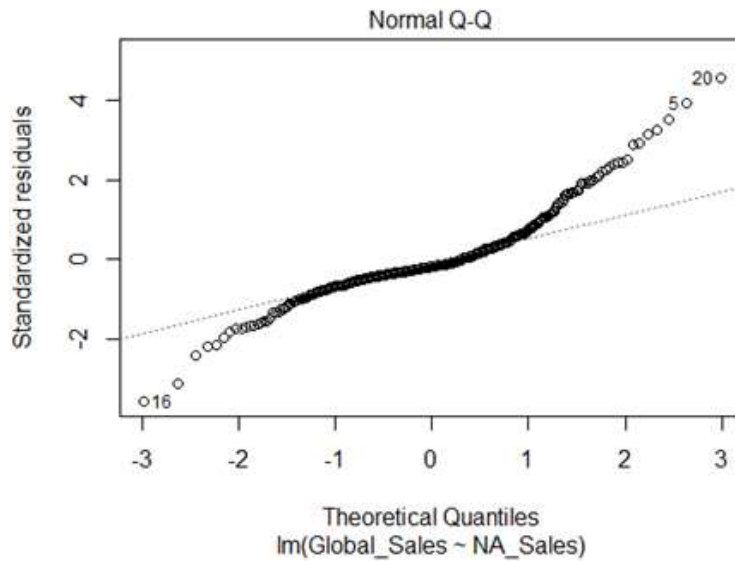
Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)   0.5910     0.1269   4.658 4.56e-06 ***
NA_Sales      1.9381     0.0339  57.176 < 2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.844 on 347 degrees of freedom
Multiple R-squared:  0.904,    Adjusted R-squared:  0.9038
F-statistic: 3269 on 1 and 347 DF,  p-value: < 2.2e-16

```

The coefficient suggests that each unit of North American sales is indicative of Global sales being 1.94 units, an increase of 13% on model 1's prediction of 1.72.

The Q-Q plot below demonstrates, however, that the model has significant residuals either side of the AB-line:



Multivariate model (model 3)

A third model was created by adding another x-variable, to give a multiple linear regression model. The extra variable was EU sales. This model gave the highest R^2 of 0.9687:

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	0.22175	0.07760	2.858	0.00453	**
NA_Sales	1.15543	0.02456	47.047	< 2e-16	***
EU_Sales	1.34197	0.04134	32.466	< 2e-16	***

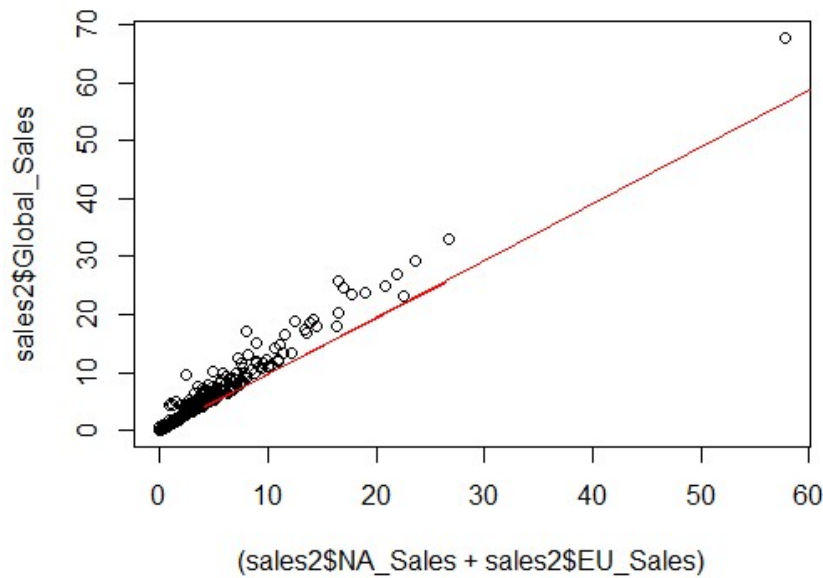
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.112 on 349 degrees of freedom

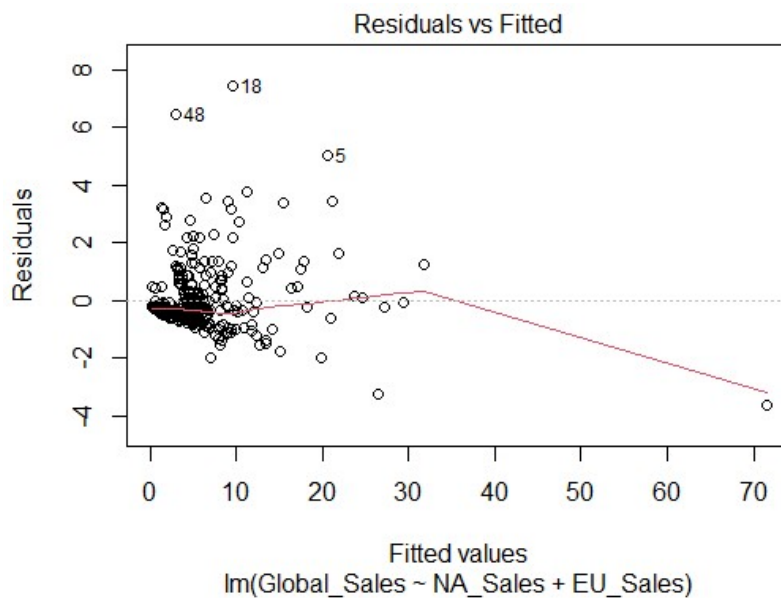
Multiple R-squared: 0.9687, Adjusted R-squared: 0.9685

F-statistic: 5398 on 2 and 349 DF, p-value: < 2.2e-16

The scatterplot below shows that the multivariate Model3's AB line is a better fit than Model 2, even though outliers had been removed. This is unsurprising as the total of NA sales and EU sales is 78% of total sales.



The residuals plot below identifies several outliers – particularly rows 5, 18 and 48 – which could be removed if management wishes to finesse the model further:



The AB line on Model 3's scatterplot above was generated using R's 'predict' function on a subsample of the dataset. This sample ought to have been separated out from the data used to train the model, in order to prevent 'overfitting'. The results of the predict test are presented in the table below, along with their confidence intervals:

`predictTest`

	fit	lwr	upr
1	71.468572	70.162421	72.774723
2	6.856083	6.718420	6.993745
3	4.248367	4.102094	4.394639
4	4.134744	4.009122	4.260365

5 26.431567 25.413344 27.449791

The differences between the actual and predicted values are shown in the blue shaded section of the table below. Most predicted values are larger than actual values, with an overall difference of 8% for the sample:

Ranking	Product	Platform	Year	Genre	Publisher	NA_Sales	EU_Sales	Global_Sales Predict		Diff	Diff%
1	107	Wii	2006	Sports	Nintendo	34.02	23.8	67.85	71.47	3.62	5.3%
10	326	NES	1984	Shooter	Nintendo	22.08	0.52	23.21	26.43	3.22	13.9%
99	3267	X360	2008	Shooter	Activision	3.93	1.56	6.04	6.86	0.82	13.5%
176	6815	N64	1999	Platform	Nintendo	2.73	0.65	4.32	4.25	-0.07	-1.7%
258	2877	X360	2014	Shooter	Activision	2.26	0.97	3.53	4.13	0.60	17.1%
								104.95	113.14	8.19	7.8%

A fourth model was created using the log of EU sales. The infinite values had to be removed from the dataframe before creating the model, using the syntax 'is.finite'. A lower R2 of 0.38 was obtained and so the model was discarded.

Conclusions / Recommendations:

- 1) Turtle Games' product range includes books, board games, video games and toys, however the sales data appears just to include the video games sector. The multivariate sales model is useful for predicting total sales of video games, however the model may not be accurate for Turtle's other product sectors.
- 2) The multivariate model could be refined further by removing some outliers and 'folding' the training data before testing the model on a ringfenced test set, however the model has a very high R2 value as it stands, and is a useful indicator of Global sales. Predictions should be discounted by 10% for prudence.
- 3) There are other distribution-free models that can be applied to heavy-tailed data, such as kernel density estimation or rank-based tests, however the multivariate model is easy to apply, particularly using R's 'predict' function.

TECHNICAL APPENDIX (APPENDIX 1)

Processes followed for analysing the data

1. Steps followed for analysis of Turtle Reviews data:
 - a) CSV file 'Turtle Reviews' was loaded into a dataframe.
 - b) File was checked for null values, which were not present.
 - c) Redundant columns ('language' and 'platform') were deleted.
 - d) Columns were renamed and the dataframe exported to 'reviews.csv'.
 - e) An 'ordinary least squares' (OLS) model was generated and various plots performed with spending as the independent variable and loyalty points as the dependent variable.
2. Steps followed for k-means clustering analysis of customer remuneration:
 - a) The 'Turtle Reviews' CSV file was imported and a new dataframe created containing just the 'renumeration' and 'spending_score' columns.
 - b) Various packages were imported into the Jupyter notebook, including Sklearn, Scipy and Seaborn, in addition to Pandas and Numpy.
 - c) Scatter and pair plots were used to visualise the data.
 - d) The 'Silhouette' and 'Elbow' methods were used to determine the optimal number of clusters for k-means clustering. The 'k-means++', improved algorithm was used for the Elbow method, with the 'random state' variable set at 42.
 - e) K-means clustering was performed with the 'n_clusters' variable set at 4,5 and 6, to confirm the optimum number suggested by the Silhouette and Elbow methods. In fitting the clustering model, the number of iterations was set at 15,000 and the 'random state' set to zero.
 - f) A scatterplot showing the clusters in their relative positions on the remuneration and spending axes was then produced, using the k-means cluster numbers to add hue.
3. Steps followed for analysis of customer reviews:
 - a) In addition to Pandas, Matplotlib and Numpy, the NLP module 'nltk' (Natural Language Toolkit) and os (Operating System) module were imported. The modules 'Textblob', 'Wordcloud' and 'Scipystats' were also required.
 - b) The CSV file 'Turtle Reviews' was loaded into a dataframe. A check for missing values was negative.
 - c) To prepare the data for NLP the following steps were undertaken:
 - Text in 'review' and 'summary' columns changed to lower case and joined into strings.
 - Punctuation replaced in each of the columns using `str.replace('[^\w\s]','')`
 - Duplicates dropped in both columns.

- Text was 'tokenised' – ie. strings split into individual words.
- Alphanumeric characters and stopwords were removed and then words were rejoined into a string in order to create 'wordclouds' which illustrate words' frequency of occurrence.
- 15 most common words were identified and their polarity assessed using 'TextBlob'.
- Overall polarity and sentiment for Review and Summary columns was assessed and histograms used to illustrate this.
- The top 20 positive and negative reviews and summaries were identified and printed.

4. Steps followed for analysis of sales per product:

- a) The dplyr and tidyverse modules were imported.
- b) The CSV file 'turtlesales' was imported and first 5 rows viewed using 'head'
- c) A subset of the dataframe was created, after removing the columns 'Ranking', 'Year', 'Genre' and 'Publisher'.
- d) A new column was added which converted the product number into a factor, using the syntax 'factor(sales2\$Product)' ('sales2' being the subset dataframe's name).
- e) Given the large number of products, it was decided to group them by product number into the closest 1,000 using this syntax:

```
intervals <- seq(0, max(sales2$Product), by = 1000)
grouped_products <- cut(sales2$Product, breaks = intervals, labels = intervals[-1],
right = FALSE)
```
- f) The best-selling product (Number 107) was identified using the following code:

```
sales3 <- arrange(sales2, desc(Global_Sales))
head(sales3)
```
- g) The following syntax was used for the production of graphs:
 - Scatterplot:

```
scatter <- qplot(GroupedProduct_factor, Global_Sales, colour=Platform,
data=sales2,geom=c('point', 'jitter'))
ggplotly(scatter) ## After importing the plotly library
```
 - Box plot:

```
plot2 <- qplot(GroupedProduct_factor,Global_Sales, data=sales2, colour=l('red'),
geom='boxplot')
ggplotly(plot2)
```
 - Histogram: grouped sales by platform had to be calculated prior to the plot:

```
grouped_sales <- aggregate(Global_Sales ~ Platform, data = sales2, sum)
plot1 <- ggplot(grouped_sales, aes(x = Platform, y = Global_Sales)) +
geom_bar(stat = "identity") + ylab("Global Sales")
```

5. Steps followed for analysis of normality of data:

- a) The syntax to generate analysis using the Data Explorer module is:
`DataExplorer::create_report(sales2)`
- b) The syntax to add labels to the outliers in the boxplot is as follows:
Identify outliers and their corresponding product numbers:
`outliers <- df_sales[df_sales$Global_Sales %in% boxplot_stats$out,]`
Add labels to the boxplot for outliers:
`p + geom_text(data = outliers, aes(label = Product_factor), vjust = -0.5)`
- c) The library 'moments' is needed in order to perform the skewness and kurtosis tests.
- d) In order to create the barplot comparing EU and NA sales by platform the data had to be rearranged into 'long' format using the following syntax:
`pivot_longer(cols = c(Total_EU_Sales, Total_NA_Sales), names_to = "Region", values_to = "Total_Sales")`

6. Steps followed for analysis of

- a) The dataset was filtered for outliers using this syntax:
`rows_to_drop <- c(1, 2, 6, 10)`
`sales2_filtered <- sales2[-rows_to_drop,]`
- b) In order to perform the predict test using Model 3 the test data was typed into Excel and saved as a CSV file. This was then loaded into R and the predictions saved as a variable using this syntax:
`predictTest = predict(model3, newdata=model3test, interval='confidence')`
- c) The predictTest variable was used to create the AB line on the scatterplot of NA& EU sales vs Global sales using this syntax:
`lines(predictTest, col = "red")`

APPENDIX 2

Top 20 negative reviews:

165 booo unles you are patient know how to measure i didnt have the patience neither did my daughter boring unless you are a craft person which i am not -1.000000
147 incomplete kit very disappointing -0.780000
267 one of my staff will be using this game soon so i dont know how well it works as yet but after looking at the cards i believe it will be helpful in getting a conversation started regarding anger and what to do to control it -0.550000
90 i bought this as a christmas gift for my grandson its a sticker book so how can i go wrong with this gift -0.500000
141 i sent this product to my granddaughter the pompom maker comes in two parts and is supposed to snap together to create the pompoms however both parts were the same making it unusable if you cant make the pompoms the kit is useless since this was sent as a gift i do not have it to return very disappointed -0.491667
251 my 8 yearold granddaughter and i were very frustrated and discouraged attempting this craft it is definitely not for a young child i too had difficulty understanding the directions we were very disappointed -0.446250
382 i purchased this on the recommendation of two therapists working with my adopted children the children found it boring and put it down half way through -0.440741
713 if you like me used to play dd but now you and your friends growed up and cant be together because all the responsibilities and bla bla bla this game is for you come to the dungeon -0.400000

1011 you can play the expansions one at a time or add then both in for a longer game if your into lords of waterdeep this is a must have
-0.400000

355 my son loves playing this game it was recommended by a counselor at school that works with him -0.400000

312 this game although it appears to be like uno and have an easier play method it was still too time consuming and wordy for my
children with learning disabilities -0.400000

723 if you play dungeons and dragons then you will find this board game to be dumb and boring stick with the real thing -
0.393750

600 i was a bit disappointed in the quality of the cardboard pieceholders and the fact that they changed the names of some hotels
otherwise i mean its a terrific game -0.365625

331 very fun game to use with kids working on handling anger you play like uno but have to answer questions about anger -
0.352500

297 i really like this game it helps kids recognize anger and talk about difficult emotions -0.350000

389 i am a therapist for children and this game is so valuable to bring out insight and solutions to deal with and identify feelings of anger
i use it frequently -0.333333

338 confusing instructions and its not for 6 year olds its boring too its asking the same question but each question is worded differently
-0.325000

4 as my review of gfgs previous screens these were completely unnecessary and nearly useless skip them this is the definition of a
waste of money -0.316667

784 the adventures are tough but you can get throuhg them it all comes down to the die roll just like any dd game -0.314815

631 a crappy cardboard ghost of the original hard to believe they did this but they did shame on hasbro disgusting -0.305556

Top 20 negative summaries:

165 boring unless you are a craft person which i am -1.000000

587 boring -1.000000

17 the worst value ive ever seen -1.000000

837 before this i hated running any rpg campaign dealing with towns because it -0.900000

1 another worthless dungeon masters screen from galeforce9 -0.800000

116 disappointed -0.750000

266 promotes anger instead of teaching calming methods -0.700000

637 bad qualityall made of paper -0.700000

634 too bad this is not what i was expecting -0.700000

144 at age 31 i found these very difficult to make -0.650000

75 small and boring -0.625000

368 mad dragon -0.625000

575 disappointing -0.600000

723 then you will find this board game to be dumb and boring -0.591667

267 anger control game -0.550000

1249 ball of weird -0.500000

646 50th anniversary is a sad day for acquire -0.500000

1137 cant go wrong -0.500000

59 really small disappointed -0.500000

1116 its also really lame that the doll didnt come with the things she -0.500000

Top 20 positive reviews:

776 this is in my opinion the best dungeon crawler out there it can be setup played and tore down all in under 2 hours it makes a fun
ride and is fun with your kids too mine are 5 and 7 0.361111

1024 of the many board games i have played this one is by far my favorite this expansion adds a lot to the game 0.175000

617 we were thrilled to find acquire finally my husband grew up loving this game ordered it for my brother the game requires strategy
planning and never ends the same way it is a classic musthave addition for any game closet its a little more time intensive and the board isnt
as flashy as newer games but hey it is exciting to play its all about the acquisitions 0.023264

521 my son 25 yr old loves it very much the best feedback i can have a lot of animals and jumbo it is 0.453333

1042 my 5 yearold son absolutely loves this game he happily plays this over and over and over and over from a parents view the storage
box is very sturdy as well as the game pieces after a month of daily use the game still looks brand new i would recommend this over the
standard memory game any day a mustbuy for any little one that loves construction vehicles -0.041012

622 i have always loved this game it is as much or more fun than monopoly love building my hotel empire 0.320000

771 if you have anyone in your life that enjoys board games or dd in any form they too will appreciate this its worth the price i
purchased it as gift for my eldest son as i playd dd as a kid i wanted to share it with my sons therefore i purchased it as a birthday gift and
the following evening we all playd we had a blast thank you for the good times 0.333333

407 if you have the pigeon books in your elementary school library and you dont have the pigeon you are missing out our students
love the pigeon 0.200000

1008 an excellent expansion to lords of waterdeep and most importantly it adds a sixth player option to the game 0.375000

1114 i bought this doll for my 4 year old boy and for my class as i am a preschool teacher it is perfect the children love it you have to by the animals separately and also the book but this trio will last for years and it is always the favorite hands on story for preschoolers i used to have one in my previous school but it belonged to the school so this time i bought my own set 0.361905

737 a simpler take on dungeons and dragons no need for a dm the game plays it out for you do you just want to dungeon crawl hack and slash your way to victory solo missions are available and this game can be mixed easily with other editions of the games tons of cards and miniatures worth every cent 0.029762

732 as a disclaimer one of my villain cards came with a factory defect where the machine burned into it but that should be a rarity as far as the rest these are the best miniatures ive ever had the cave bears are my wifes favorite while i love the otyugh the insane number of orcs duergar extra kobolds and devils is frickin awesome seriously this is more well balanced with even more new game features that stand to be even better than the previous castle ravenloft game 0.162424

27 awesome my 8 year olds favorite xmas gift its 915 am xmas morning and hes already colored three of these 0.750000

1003 this expansion was fantastic the new mechanics add a great new set of options to utilize during play and really made games alot closer as you can utilize the new mechanics to make interesting plays and comebacks well worth it for existing players 0.326136

1136 received item todaysuper fast shipment i cant wait to use this with my preschoolersawesome tool for teaching or reinforcing number recognition and number sequencingyooohoo 0.200000

166 i was skeptical but my 9 year old has had so much fun with this kit and it was her favorite christmas present she pretty much made the puppies herself with minimal help from me though i did hot glue some ears rather than use the included glue only downside is the cuttings can be messy but really wonderful instructions wellmade supplies and can be used for many yearsand maybe even making different animals if you are creative highly recommend for artsy determined 9 year olds i actually want to try to make one myself they are so darn cute 0.192222

859 this a perfect must have set it really helps my group better plane fights and helps add a lot of eye candy to your gaming 0.566667

581 love this game and have been playing it for over 20 years best played with 3 people 0.366667

840 just what i needed for my collection group of orcs i usually buy dungeon command for the minis but game mechanics is also great some times i miss dies 0.050000

423 wow this product is incredible i was hesitant to purchase due to the price but the teachable moments with my little boy are priceless the eggs are perfect quality and the story is illustrated simply and beautifully to teach the true meaning of easter this easily held the attention of my 3 year old and made his mommy emotional this beautiful memorial to the easter holiday will certainly be treasured as a new tradition in our home thank you to the artist and author 0.374766

Top 20 positive summaries:

776	best dungeon crawler	1.000000
1024	best expansion ever	1.000000
617	one of the best games	1.000000
521	the best feedback i can have	1.000000
1042	the perfect gift for preschool construction fans	1.000000
622	one of the best	1.000000
771	perfect gift	1.000000
407	the pigeon is the perfect addition to a school library	1.000000
1008	adds a six player option and an excellent expansion	1.000000
1114	perfect for preschoolers	1.000000
737	excellent introduction to dungeons and dragons	1.000000
732	best boardgame ever	1.000000
27	perfect	1.000000
1003	excellent expansion	1.000000
1136	awesome learning tool	1.000000
166	awesome and welldesigned for 9 year olds	1.000000
859	this a perfect must have set	1.000000
581	one of the best games ever	1.000000
840	best orcs from wotc	1.000000
423	best easter teaching tool	1.000000