



Toy Horse Analysis Report

Group M

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Overview

Product Profiles

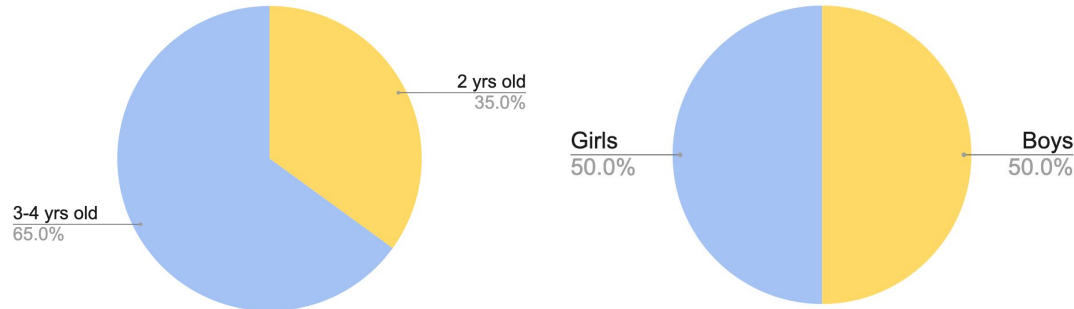
| Price | Height | Motion | Style |
|----------|--------|----------|-----------|
| \$139.99 | 18" | Rocking | Glamorous |
| \$119.99 | 26" | Bouncing | Racing |

4 Attributes

16 Profiles

Conjoint analysis is the optimal market research approach for quantifying and measuring the value that consumers place on features of a product.

Demographic factors of Survey Respondents



The sample can represent the population of buyers in the target market.

Executive Summary

Key insights:

Cluster analysis and segmentation reveals the 2 major segments in the market:

- **Fast and furious:** 30% of market; price sensitive; 26"+Bouncing Motion+Racing style (**Profile 4**);
- **Racing Babies:** 70% of market; price sensitive; 26"+Rocking Motion+ Racing Style (**Profile 8**);
- A priori segmentation shows that **Profile 4** is ideal for older kids and **Profile 6** is ideal for younger kids.

Market simulation insights:

- If competitor does not change the product profile, to maximize profit, EarlyRider should maintain status quo or switch from Profile 5 to Profile 4; To maximize market share, EarlyRider should switch current Profiles 5&13 to **Profiles 4&16**.
- If competitor change the product profile from 7 to 8, to maximize profit, EarlyRider should maintain status quo or switch to **Profile 6 and 13**; To maximize market share, EarlyRider should switch profiles to **4 & 13** or **4 & 16**.

Analytics Framework

Analysis Goals

Better Segmentation

Maximize Profit

To get Individual preference on different attributes (Price, Size, Style, Motion)

Segment on Age and Gender, combining with Cluster analysis

Get Partworths

Cluster Analysis

Priori Segmentation

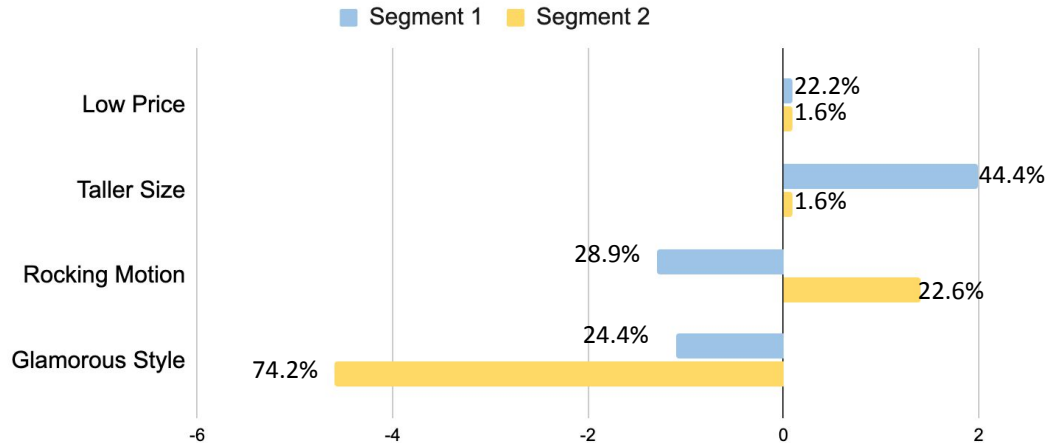
Market Simulation

To find Target Segments

Simulate market share by considering competition

Benefit Segmentation - Cluster analysis

Attributes Preference by Segments



- Both segments are price sensitive and have very distinct tastes.
- The percentages indicate the weight for each attributes in all 4 attributes for each segment.

Fast and furious
30% respondents

Profile 4:

Price sensitive;
26'' + Bouncing Motion + Racing Style

Racing Babies
70% respondents

Profile 8:

Price sensitive;
26'' + Rocking Motion + Racing Style

Benefit Segmentation -- A Priori analysis

Age and Gender can be used to subset our repondants.

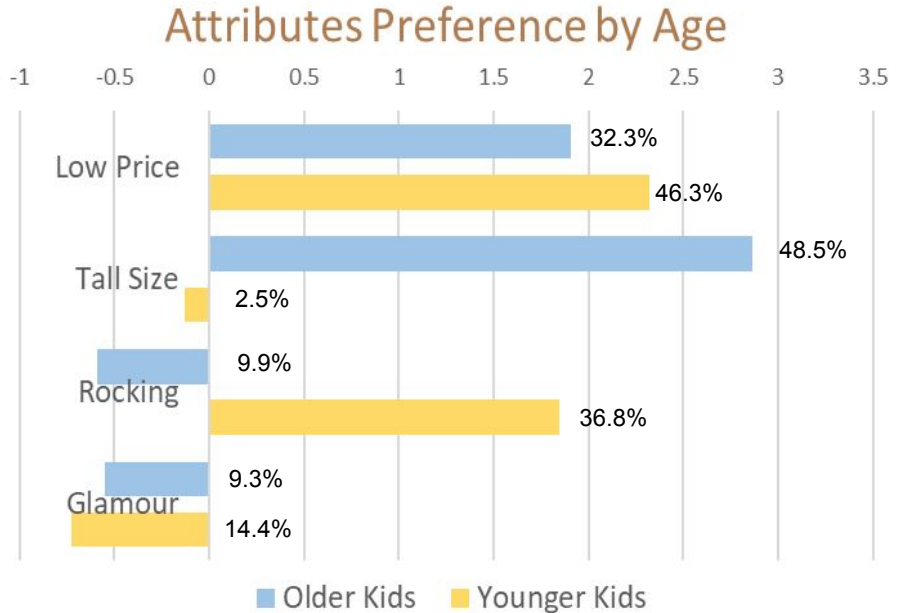
The interaction effect of Age and product attributes is more optimal than that of Gender .

Older kids: Price sensitive + 26" size + Bouncing Motion + Racing style

Younger kids: Price sensitive + 18" size + Rocking Motion + Racing style

Combining Cluster and Priori analysis

- Older kids → Segment 1 → Profile 4
- Younger kids → Profile 6



Market Simulation & Findings - Profit

Measurement for comparison:

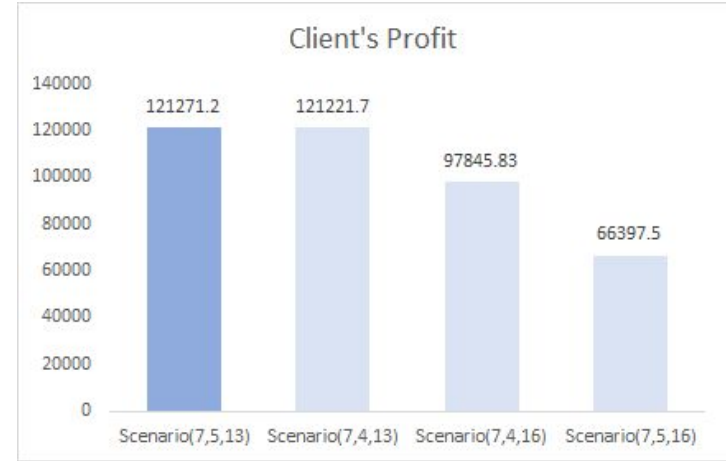
Profit - take switching cost and one-time fixed cost into consideration

Scenario Criteria:

Competitor does not lower the price

Recommendation:

- Profile -> **Status quo or switch from profile 5 to 4**
- Product line -> **26 inches Bouncing Racing**
- Suggested to use this product mix for short-term profit maximization if competitor does not lower the price



| Scenario | Market Share_ | Market Share_ | Market Share_ | Client's Profi | Competitor Profi |
|------------------|---------------|---------------|---------------|----------------|------------------|
| Scenario(7,5,13) | 48.958% | 14.583% | 36.458% | 121271.2 | 119022.1 |
| Scenario(7,4,13) | 29.167% | 47.917% | 22.917% | 121221.7 | 62821.67 |
| Scenario(7,4,16) | 27.083% | 42.708% | 30.208% | 97845.83 | 56905.83 |
| Scenario(7,5,16) | 52.083% | 8.333% | 39.583% | 66397.5 | 127895.8 |

Market Simulation & Findings - Profit

Measurement for comparison:

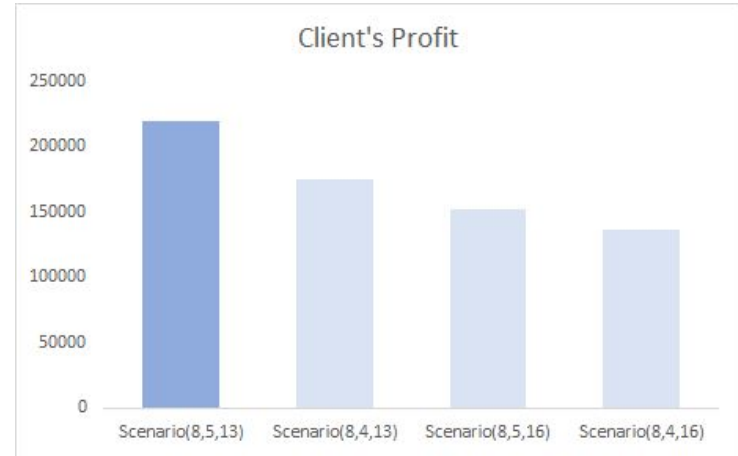
Profit - take switching cost and one-time fixed cost into consideration

Scenario Criteria:

Competitor lowers the price

Recommendation:

- Profile -> **Status quo or switch to profile 6 & 13**
- Product line -> **18 inches Rocking Racing/Glamour**
- Suggested to use this product mix for short-term profit maximization if competitor lowers the price



| Scenario | Market Share | Market Share | Market Share | Client's Profit | Competitor Profit |
|------------------|--------------|--------------|--------------|-----------------|-------------------|
| Scenario(8,5,13) | 17.708% | 17.708% | 64.583% | 220008.8 | 11951.25 |
| Scenario(8,6,13) | 14.583% | 17.708% | 67.708% | 211549.2 | 5077.49 |
| Scenario(8,4,13) | 8.333% | 58.333% | 33.333% | 174963.3 | -8670 |
| Scenario(8,5,16) | 17.708% | 14.583% | 67.708% | 152675.4 | 11951.25 |

Market Simulation & Findings - Market Share

Measurement for comparison:

Market Share - focus on the earning potential in the long run and take less consideration of one-time fixed cost

Scenario Criteria:

Competitor does not lower the price

Recommendation:

- Profile -> switch to 4 & 16
- Product line -> **26 inches Bouncing Racing / 26 inches Rocking Glamour**
- Suggested to use this product mix to maximize long term market share if competitor does not lower the price

| Scenario ▾ | Market Share_ ▾↑ | Market Share_ ▾ | Market Share_ ▾ | Client's Profi ▾ | Competitor Profi ▾ |
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Market Simulation & Findings - Market Share

Measurement for comparison:

Market Share - focus on the earning potential in the long run and take less consideration of one-time fixed cost

Scenario Criteria:

Competitor lowers the price

Recommendation:

- Profile -> switch to Profile 4 & 13/ 4 & 16
- Product line -> **26 inches Bouncing Racing with 18 inches or 26 inches Rocking Glamour**
- Suggested to use this product mix to maximize long term market share if competitor lower the price

| Scenario ▾ | Market Share_ ▴ | Market Share_ ▾ | Market Share_ ▾ | Client's Profi ▾ | Competitor Profi ▾ |
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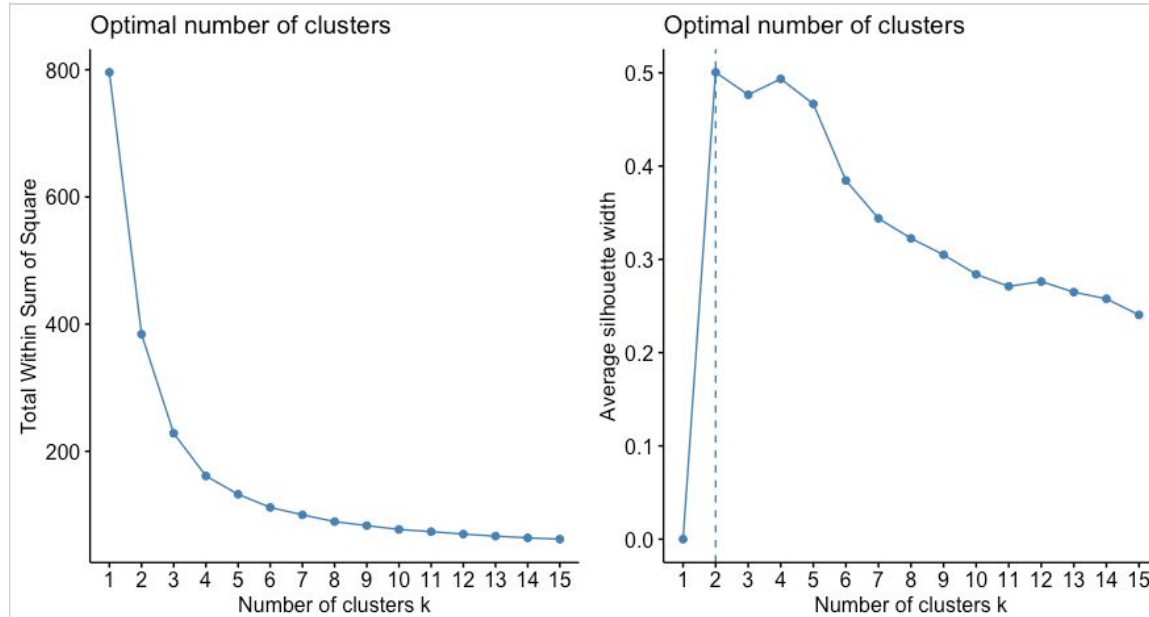


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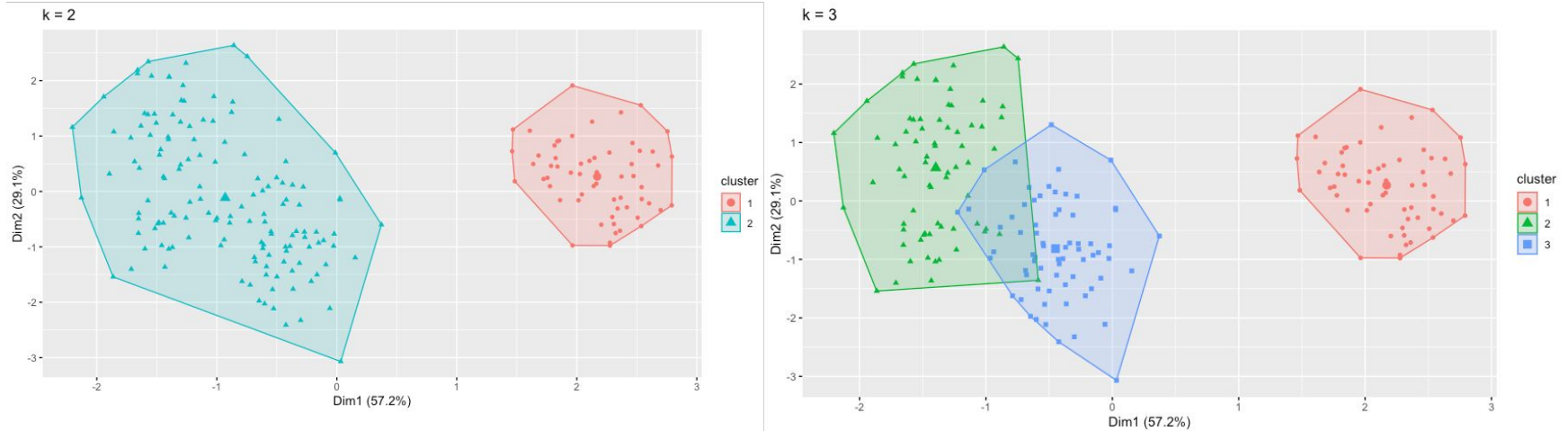
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Appendix i -- Cluster Analysis



The optimal number of clusters k is 2 as indicated in the graph.

Appendix i -- Cluster Analysis



The image on the right shows that there is an overlap of clusters when $k=3$, which further explains why $k=2$ is the optimal approach.

Appendix ii -- A Priori Segmentation

```
> summary(lm(ratings~desmat*ageD))
```

Call:

```
lm(formula = ratings ~ desmat * ageD)
```

Residuals:

| Min | 1Q | Median | 3Q | Max |
|----------|---------|--------|--------|--------|
| -11.6898 | -1.2999 | 0.1558 | 1.3102 | 9.6093 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(> t) |
|----------------------|----------|------------|---------|--------------|
| (Intercept) | 9.8418 | 0.1764 | 55.808 | < 2e-16 *** |
| desmatLow Price | 2.3211 | 0.1652 | 14.046 | < 2e-16 *** |
| desmatTall Size | -0.1266 | 0.1582 | -0.800 | 0.4238 |
| desmatRocking | 1.8480 | 0.1582 | 11.681 | < 2e-16 *** |
| desmatGlamour | -0.7227 | 0.1582 | -4.568 | 5.17e-06 *** |
| ageD | -3.3152 | 0.2213 | -14.980 | < 2e-16 *** |
| desmatLow Price:ageD | -0.4136 | 0.2074 | -1.994 | 0.0462 * |
| desmatTall Size:ageD | 2.9924 | 0.1985 | 15.072 | < 2e-16 *** |
| desmatRocking:ageD | -2.4356 | 0.1985 | -12.267 | < 2e-16 *** |
| desmatGlamour:ageD | 0.1745 | 0.1985 | 0.879 | 0.3795 |

```
> summary(lm(ratings~desmat*genderD))
```

Call:

```
lm(formula = ratings ~ desmat * genderD)
```

Residuals:

| Min | 1Q | Median | 3Q | Max |
|---------|---------|--------|--------|--------|
| -8.4544 | -1.9007 | 0.0089 | 2.0089 | 7.2030 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(> t) |
|-------------------------|----------|------------|---------|--------------|
| (Intercept) | 7.98472 | 0.18438 | 43.306 | < 2e-16 *** |
| desmatLow Price | 2.03690 | 0.17277 | 11.790 | < 2e-16 *** |
| desmatTall Size | 1.53671 | 0.16542 | 9.290 | < 2e-16 *** |
| desmatRocking | 0.46964 | 0.16542 | 2.839 | 0.00456 ** |
| desmatGlamour | -0.65734 | 0.16542 | -3.974 | 7.28e-05 *** |
| genderD | -0.52233 | 0.26753 | -1.952 | 0.05100 . |
| desmatLow Price:genderD | 0.04533 | 0.25068 | 0.181 | 0.85651 |
| desmatTall Size:genderD | 0.49871 | 0.24001 | 2.078 | 0.03783 * |
| desmatRocking:genderD | -0.35418 | 0.24001 | -1.476 | 0.14016 |
| desmatGlamour:genderD | 0.09561 | 0.24001 | 0.398 | 0.69041 |

The P-values for the interaction effect of age and the product attributes are lower than those of for gender. Three of four of P-values for gender and product attributes are higher than 0.05, therefore, we only consider age in our priori segmentation analysis.