

A young child with dark hair, wearing a white long-sleeved shirt and dark shorts, is riding a large brown plush toy horse. The child is leaning forward, holding the horse's head. The background is a plain, light gray.

# Toy Horse Conjoint Analysis

**MSMA Group 11**

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# Executive Summary and Key Insights

- X To maximize profit, EarlyRiders should change its product mix as below:

In the short term (1 yr), launch **26" Racing Bouncing \$119.99 (profile 4)** and **18" Glamorous Rocking \$119.99 (profile 14)**;

In the long term (2-5 yrs), remove profile 14, keep **26" Racing Bouncing \$119.99 (profile 4)**, add **18" Racing Rocking \$119.99 (profile 6)** and **26" Glamorous Rocking \$119.99 (profile 16)**.

## More Insights

- X Post-hoc segmentation reveals the **3 major segments** in the market:

**Bouncing Seeker** (40%), best target of **26" Racing Bouncing \$119.99 (profile 4)**;

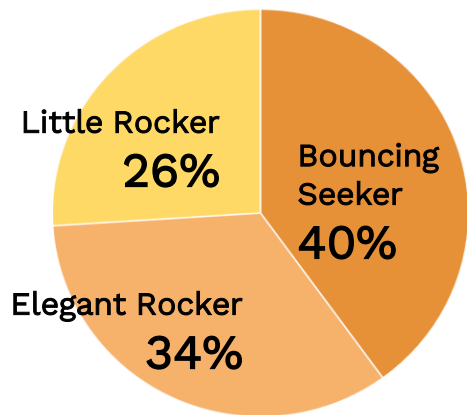
**Elegant Rocker** (34%), best target of **26" Glamorous Rocking \$119.99 (profile 16)**;

**Litter Rocker** (26%), best target of **18" Racing Rocking \$119.99 (profile 6)**.

- X A priori segmentation further reveals that **girls** love Glamorous style and Rocking motion while **boys** love Racing style, and that **younger boys** prefer Bouncing motion, while **elder boys** are into Rocking motion.
- X Refining EarlyRiders' product mix could lead to an estimated short term market share of **94.5%** with a profit of **\$199,756** and a long term market share of **94%** with a profit of **\$671,955**.
- X **New product line strategy could generate a total 5 yrs profit of \$871,711, which is 1.8 times of 5 yrs profit of status quo.**

# Post-hoc Segmentation

According to post-hoc segmentation, the market can be divided into **3 segments**:



Bouncing  
Seeker



- X Prefer large model
- X Love **bouncing** motion
- X **Most price-sensitive** among the three segments
- X Prefer racing style

**26" Racing Bouncing \$119.99 (profile 4)**

Elegant  
Rocker



- X Love **large-sized** toy horse
- X Prefer rocking motion
- X Least price sensitive among the three segments
- X Especially into **glamorous style**

**26" Glamorous Rocking \$119.99 (profile 16)**

Little  
Rocker

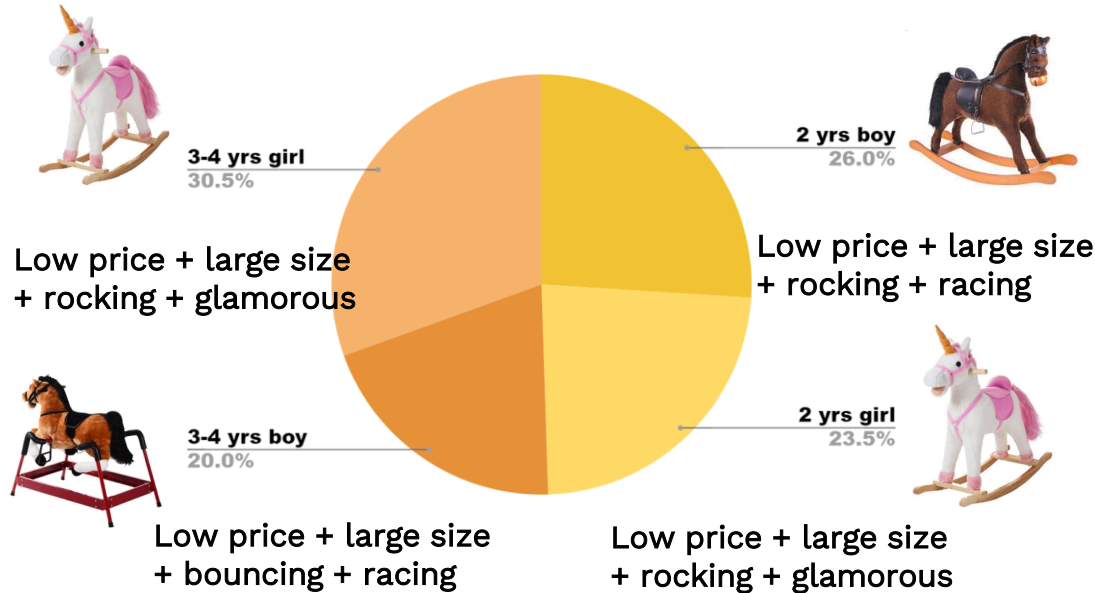


- X Like **small** model
- X Prefer **rocking** motion
- X Intermediately price-sensitive
- X Indifferent about style

**18" Racing Rocking \$119.99 (profile 6)**

# A-priori Segmentation

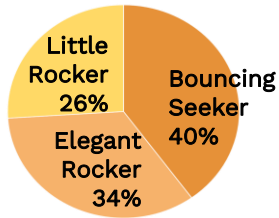
Based on gender and age, we divided consumers into **4 segments**:



- X **26" Glamorous Rocking \$119.99 (profile 16)** could satisfy **girls** (both 2 yrs and 3-4 yrs).
- X **26" Racing Bouncing \$119.99 (profile 4)** meets the need of elder boys.
- X **26" Racing Rocking \$119.99 (profile 8)** is the ideal product for younger boys.  
**18" Racing Rocking \$119.99 (profile 6)** could also be considered for this segment.

# Market Simulation (Short-term: 1 yr)

- X We start from calculating first year's profit. In order to avoid additional cost for switching product line, we target only **two segments**.
- X Profile 16 (26" Rocking Glamorous \$119.99) performs well in stealing competitor's market share because all girls like it.
- X However, targeting the largest two segments is not most profitable due to 26" Rocking's high variable costs.
- X The most profitable short-term set is **profile 4 and 14**, targeting segment 1 (26%) and segment 2(40%). The highest profit is \$199,756.



Targeted Segmentations	Scenario	Market Share	First year's profit
Status-quo: Seg 1 (26%)	7(C)   5, 13	0.57   0.22, 0.21	\$135,863
Segments (26% + 40%)	7(C)   4, 14	0.055   0.52, 0.425	<b>\$199,756</b>
Segments (40% + 34%)	7(C)   4, 16	0   0.405, 0.595	\$186,067
Segments (26% + 34%)	7(C)   6, 16	0   0.5, 0.5	\$189,293

- X Concern: When being stolen market share, what would our competitor do in response?

# Market Simulation (Long-Term: 2-5 yrs)

- X **Competitor's reaction when EarlyRider provides low price:** Lower price, namely switch to **Profile 8**.
- X After calculation, we found the profit of covering all 3 segments is **larger** than only targeting 2 segments regarding to competitor's reaction, so we list 2 scenarios for 3 segments below:

Scenario	Market Share	2nd year's profit	3-5 years' profit
<b>8(C)   4, 14, 16</b>	0.085   0.355, 0.22, 0.34	\$158,677	\$496,029(165,343*3)
<b>8(C)   4, 6, 16</b>	0.06   0.355, 0.235, 0.35	\$157,989	<b>\$513,966(171,322*3)</b>

- X As A priori segmentation shows, preferences of kids vary most upon motion and style, so compared with Profile 14, we would recommend to launch **Profile 6**.

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\* More details about calculation are attached in Appendix 4.

\* Since most of toy horses' sold around holidays, we assumed competitors will react to our price one year later.

\* As to long-term profit, we need to calculate switching fixed cost in 2nd year, but don't need to consider it afterwards because product types don't change.

# Best Product Mix Plan

## Short Term (1st Yr)

## Long Term (2-5 Yrs)

### Competitor

**Profile 7**  
26" Rocking Racing (\$139.99)

**Profile 8**  
26" Rocking Racing (\$119.99)

### EarlyRiders

**Profile 4**  
26" Bouncing Racing (\$119.99)  
**Profile 14**  
18" Rocking Glamorous (\$119.99)

**Profile 4**  
26" Bouncing Racing (\$119.99)  
**Profile 6**  
18" Rocking Racing (\$119.99)  
**Profile 16**  
26" Rocking Glamorous (\$119.99)

**Highest Profit for 5 years = \$871,711**

**1.8 times** of 5 years' profit for status quo (\$479,315)

# Appendix 1: Post-hoc Segmentation

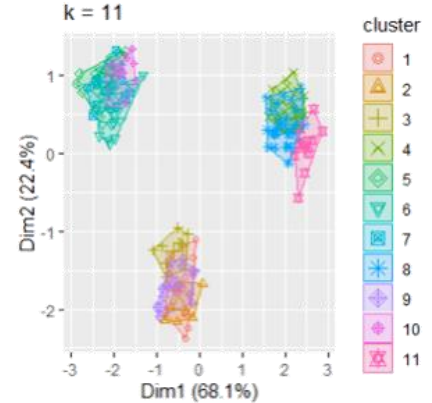
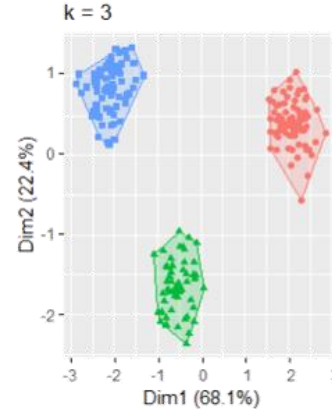
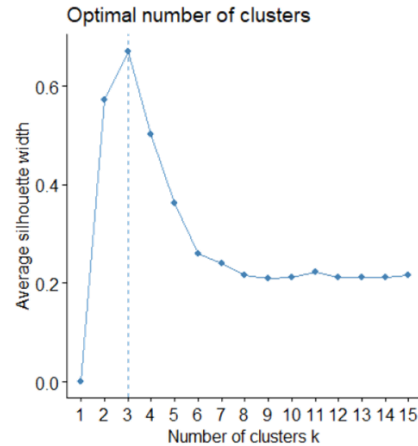
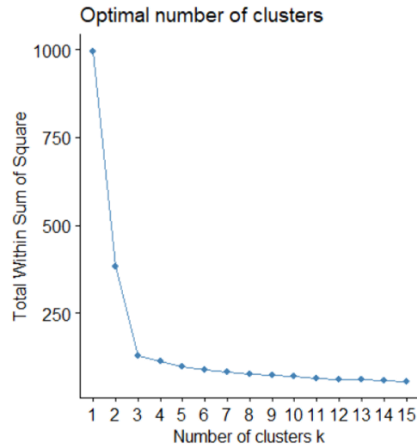
## X Determining number of clusters

Strong elbow pattern shows that three is the appropriate number of segments;

Focal points are at 3 and 11. 11 might be too many for 200 observations.

$k = 3$  gives the best clustering results;

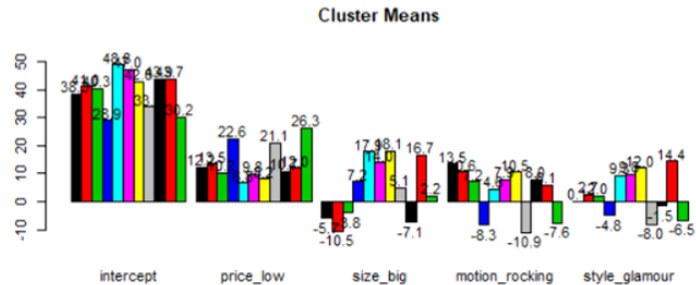
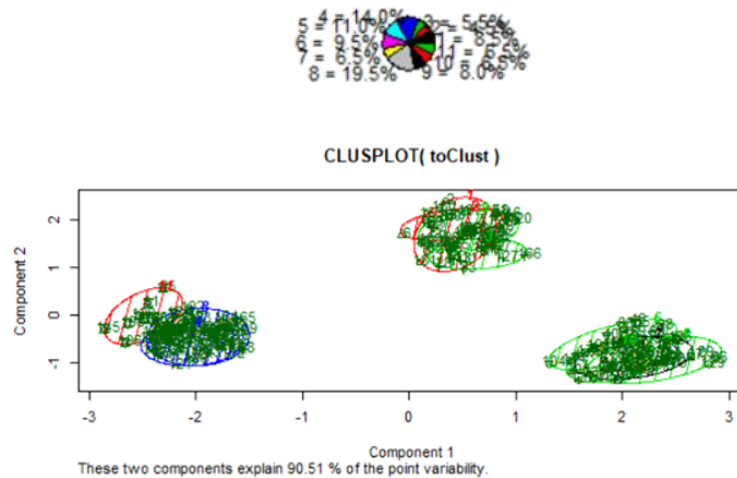
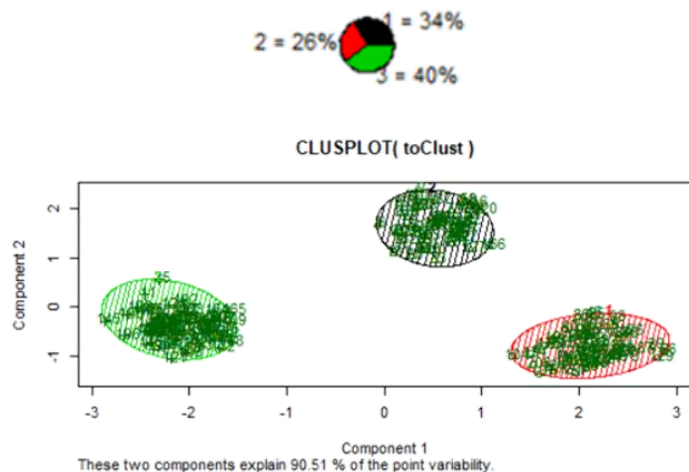
$k = 11$  leads to a lot of overlap and low sample size in each segments.





# Appendix 2: Post-hoc Segmentation

X Segmentation when  $k = 3$  &  $k = 11$



# Appendix 3: A priori Segmentation

## Segment-level coefficient

	Seg	intercept	price_low	size_big	motion_rocking	style_glamour
2 yrs Boy	37.7780267143818	15.3906177935589	2.36245814431254	1.69320608407532	-0.982335303747005	
2 yrs Girl	41.5024394055103	13.3319869939158	5.50244551137718	4.01400430521182	3.58642237286768	
3-4 yrs Boy	34.9923031656956	18.7640856527807	5.78594894284468	-3.94944192462098	-3.0688800419214	
3-4 yrs Girl	40.3828391322824	13.6446117550202	9.49144115552754	2.05365364835707	3.83530650030119	

## Segment-level preference and ideal profile

Segment	Size	Preference	Ideal Profile
2 yrs Boy	832(26%)	Low price+large size+rocking+racing	8, (6)
2 yrs Girl	752(23.5%)	Low price+large size+rocking+glamorous	16
3-4 yrs Boy	640(20%)	Low price+large size+bouncing+racing	4
3-4 yrs Girl	976(30.5%)	Low price+large size+rocking+glamorous	16

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\* Profile 6 can also be considered by 2 yrs boy, since coefficient of size\_big is smallest compared with other segments.

## Appendix 4: Market Simulation

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