Scale Development For Breakfast Cereals Using The Kelly Repertory Grid Technique
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ABSTRACT

Consumer research is a key component of retail strategy and a major facilitator in the formation of a competitive advantage (Devlin, Birtwistle & Macedo, 2003). A sophisticated research approach that contributes a meaningful understanding of the dynamics of consumer’s perceptual orientations is of particular value to retailers (Mitchell, 2001). Gaining knowledge of the attributes consumers value and use to discriminate between products and why those attributes are important can generate a sustainable competitive advantage for retailers (Mitchell & Harris, 2005). Consumer perceptions of product attributes are crucial factors in the choice of food products. A focus on the subjective entities of a product as perceived by consumers is a major determining factor in the success of many product marketing strategies (Kupiec & Revell, 2001).

One method that has been utilized to identify product attributes is the Kelly repertory grid method (Kelly, 1955). This method has also been used in previous studies for the recognition of food product attributes (Thomson & McEwan, 1988). The repertory grid technique (RGT) has been adopted in consumer research for examining consumers’ perceptions of products and services (Marsden & Littler, 2000).

The following research project intends to help retailers understand grocery shoppers’ perceptions of breakfast cereals. The objective of the research is two-fold. First, to determine which attributes consumers perceive differences between breakfast cereals. Second, to generate a survey to measure the underlying constructs comprising breakfast cereals using the Kelly Repertory Grid Technique

Keywords: Kelly Repertory Grid; Repertory Grid Technique; (RGT)

PROBLEM STATEMENT

Retailers need to determine the important attributes consumers’ value in the products they sell. Understanding consumer behavior and identifying important product attributes can help retailers influence merchandise selection. For this research, the identification of important attributes that consumers value for breakfast cereal will be determined.

The research plan involved two major steps:

1. The identification of breakfast cereal attributes by conducting interviews with 5 consumers.
2. The development of a survey using the Kelly Repertory Grid to measure breakfast cereal attributes.

METHODOLOGICAL FRAMEWORK

The repertory grid technique was developed by Kelly as part of his Personal Construct Theory (1957) and proposed to analyze how people look at and evaluate the world around them (Rocchi & Stefani, 2005). The repertory grid technique (RGT) was developed to elicit the various constructs that people use to describe the “elements” (i.e. objects) the researcher is interested in (Fransella, Bell & Bannister, 2003).
RGT chooses a set of elements which are consistent with the objectives of the study and targeted constructs (i.e. product) to be elicited from research participants (Stewart & Stewart, 1981). RGT methodology utilizes personal interviews with consumers to elicit the content and hierarchical structure of the subjective meanings in the form of bipolar constructs that are attached to a set of elements (Dalton & Dunnett, 1992).

METHODOLOGY

The preliminary process of identifying breakfast cereal attributes was based on five in-depth interviews with breakfast cereal consumers. Individual interviews to identify which breakfast cereal attributes (or constructs) consumers use to differentiate products took place at each participant’s work place during their lunch hour. The researcher did not know any of the participants (interviewees) as the individuals were selected by friends of the researcher. Interviewees were pre-screened to determine if they were familiar with a variety of breakfast cereals as per instructions from the researcher.

Each interviewee was asked to list 15 breakfast cereals with which they are familiar. From this list of familiar products, three breakfast cereals at a time were randomly selected and presented to the interviewee on an index card. The interviewees were asked to consider the characteristics or attributes of the breakfast cereals and to indicate what two cereal products they thought were similar. A participant would then indicate common features for the chosen pair of similar breakfast cereals and the differences between these two and the remaining breakfast cereal. In this way, each attribute and its two poles were identified, the first being defined as an emergent pole (similarity between the two) and the second one being an implicit pole (difference between the two and the third item) (Kupiec & Revel, 2001). The procedure was repeated five times for each of the five participants. No breakfast cereal was presented more than once for evaluation by the interviewee. A copy of each interview can be found in Appendix A.

CONTENT ANALYSIS

The transcript of each interview is provided in Appendix A. From these transcripts, a qualitative analysis of the answers was performed.

The triadic sorting process identified five groups of product attributes related to:

1. taste
2. packaging
3. texture
4. ingredients (health)
5. consumer segments-kids or adults

(1) Taste

Regarding taste, some of the responses provided were:

“more exciting/more flavorful”
“plain- not much flavor”
“flavorful”
“plain/need to add fruit or sugar”
“taste comparable”
“different taste from other 2”
“They both taste good”
“don’t like”
“good taste-lots sugar”
“healthy-bland taste”
(2) Packaging

Regarding packaging, some of the responses provided were:

- “normal box size”
- “box always seems huge”
- “fun boxes-exciting graphics”
- “pretty plain box”
- “busy package”
- “plain package”
- “packaging similar”
- “packaging-green fields and berries”
- “more adult looking package”
- “packaging geared toward children”
- “don’t like packaging”
- “nice cartoon characters”

(3) Texture

Regarding texture, some of the responses provided were:

- “crunchy”
- “not as crunchy as brands”
- “grainy texture”
- “smooth texture”
- “texture”
- “not much texture”
- “good & crunchy”
- “too hard”
- “not too chewy”
- “very crunchy”

(4) Ingredients (health)

Regarding ingredients (health), some of the responses provided were:

- “lots of raisins”
- “not as much raisins as brands”
- “higher calories & sugars but worth it”
- “healthier-less sugar & calories”
- “sugar cereals (kid’s target)”
- “healthier kid cereal”
- “sugar,sugar,sugar”
- “sweet, but healthy”
- “healthy”
- “not healthy”

(5) Consumer segments-kids or adults

Regarding consumer segments, some of the responses provided were:

- “don’t like but kids do”
- “more of a cereal for the whole family”
- “adult targets”
- “kid’s target”
- “kids”
- “adults”
“whole family likes”
“only adult cereal”
“kids like taste”
“kids won’t eat-taste”
“kid’s cereal”
“adult cereal”

RGT SURVEY

In order to measure consumer perceptions of each of the underlying constructs of breakfast cereal from the RGT, a survey was developed and is presented in Appendix B. Prior to sending out the survey to the targeted sample, it will be pre-tested.

CONCLUSIONS

The results of this study indicate the importance of attributes such as taste, packaging, texture, ingredients (health) and consumer segments for breakfast cereals. Manufacturers and retailers of national and private brands need to be aware of the importance of these five attributes and gather feedback from consumers regarding the evaluation of each attribute for each breakfast cereal.

Manufacturers and retailers need to be cognizant of the demographic profile of the targeted segment for each brand of cereal as kids and adults have different preferences. Most breakfast cereals are categorized by retailers as either kid, adult or all family. The package selection and design, texture, flavor profile and ingredients must be consistent with the preferences of the targeted consumer segment.

Future research should have participants rank each of the five attributes to determine the order of importance. It would be interesting to find out the consistency of responses among the various participants and if the importance of each attribute varies by target segment. Future research should also determine the primary decision maker for kid’s cereal as parents and children will have different preferences.

AUTHOR INFORMATION

Michael Pepe is an Assistant Professor of Marketing at Siena College in Loudonville, New York. After 19 years as a business professional in the retailing industry, he became a full-time faculty member at Siena in 2009. His research interests include branding, consumer behavior, and pricing strategies. He has presented papers at the College Learning and teaching Conference, Applied Business and research Conference and Marketing Management Association Conference. Michael has published articles in the following academic journals: Journal of Business and Economics Research, Journal of Product and Brand Management, and Journal of Marketing Management. E-mail: mpepe@siena.edu

REFERENCES


APPENDIX A

Transcript for each interview:

**Researcher:** Hi, I’m Mike Pepe. Thank You for participating in this research. The reason that I came to your work place today is to assess your perceptions of various breakfast cereals. The research process will not last more than 45 minutes.

**Researcher:** The first question that I have for you is “Do you regularly purchase or consume a variety of breakfast cereals?”

**Responses:**
- interview #1: yes
- interview #2: yes I do
- interview #3: yup
- interview #4: yes
- interview #5: yes, I eat a variety

**Researcher:** “Please list on a sheet of paper 15 breakfast cereals that you are familiar with and can evaluate”. Each participate listed their 15 cereals on a sheet of paper they had at their desk. In hindsight, I wish I provided each with paper and a pencil to record their thoughts.

**Responses:**
- interview #1: I can list more than 15
- interview #2: do I have to like them?
- interview #3: respondent wrote the 15 without questions
- interview #4: respondent wrote the 15 without questions
- interview #5: do I wrote the 15 or do you need it typed?

**Researcher:** writing on a sheet of paper is fine

**Researcher:** “Thank you for the list of 15 cereal items. I am going to take a few moments and randomly group this list in sets of 3 cereal items. This will result in 5 groups of 3 cereals. I will write each group on an index card and ask for your thoughts.”

**Researcher:** “From this list of 3 cereal items, how are 2 of them alike but different from the third? Please write this on your sheet of paper and state why the 2 are alike but different from the third. Express this in a bi-polar or opposite manner. For example, if I presented to you three colors: yellow, pink & black, you may say that the colors yellow & pink are alike because they are bright colors and they differ from black because it is a dark color. Secondly, you may say that yellow & pink are alike because they remind you of Easter and they are different from black because black reminds you of Halloween. Try your best to think of as many bi-polar comparisons as possible. At least three will be good with more better. Do you have any questions regarding what I am asking?” To my surprise all five participants were clear on the directions and none needed further clarification.

The process was repeated 5 times so all 15 breakfast cereal items from the participants list were evaluated. This resulted in 5 triads for each participant.

**Researcher:** Thank you for your time in participating in this study.

**Interview #1**
15 cereals identified by participant:
- Kellogg’s Raisin Bran
- Post Honey Bunches of Oats w/almonds
- Post Raisin Bran
- Lucky Charms
Private label Raisin Bran, Kellogg’s Corn Flakes, Private label Corn Flakes, Kellogg’s Rice Krispies, Private label Crispy Rice, Golden Grahams

Card #1 - Life, Post Honey Bunches of Oats w/almonds, Kellogg’s Corn Flakes

Similar
Life & Post Honey Bunches of Oats w/almonds
- more exciting/more flavorful
- normal box size
- can eat right out of box
- Higher calories & sugars but worth it

Different
Kellogg’s Corn Flakes
- plain/not much flavor
- box always seems huge
- not flavorful to eat plain-need to add something
- healthier-less sugar & calories

Card #2 - Private label Corn Flakes, Grape Nuts, Private label Crispy Rice

Similar
Private label Corn Flakes & Grape Nuts
- target: older
- healthy/specific benefit

Different
Private label Crispy Rice
- younger target
- fun to eat

Card #3 - Golden Grahams, Froot Loops & Kellogg’s Rice Krispies

Similar
Golden Grahams & Froot Loops
- sugar cereals (kids target)
- flavorful
- fun boxes-exciting graphics
- Froot Loops has a bird (don’t know name)

Different
Kellogg’s Rice Krispies
- healthier kid cereal
- plain/need to add fruit or sugar
- pretty plain box (aside from snap, crackle, & pop
- use of icons who are identifiable

Card #4 - Lucky Charms, Coco Krispies & Frosted Mini Wheats

Similar
Lucky Charms & Coco Krispies
- kid target
- sugar, sugar, sugar
- busy package
- use of icons on package

Different
Frosted Mini Wheats
- older target
- sweet, but healthy
- plain package
- no icon

Card #5 - Kellogg’s Raisin Bran, Post Raisin Bran & Private Label Raisin Bran

Similar
Kellogg’s Raisin Bran & Post Raisin Bran
- packaging similar-purple & heart/sun
- taste comparable
- crunchy
- lots of raisins

Different
Private Label Raisin Bran
- packaging-green fields and berries
- different taste from other 2
- not as crunchy as brands
- not as much raisins as brands

Interview #2
15 cereals identified by participant:

Total
Frosted Mini Wheats
Honey Bunches of Oats
Honey Nut Cheerios
Cinnamon Toast Crunch
Frosted Flakes
Fruity Pebbles
Grape Nuts
Lucky Charms
Trix
Corn Chex
Captain Crunch
Banana Nut Crunch
Special K

Card #1 - Total, Honey Bunches of Oats & Cinnamon Toast Crunch
Similar
Total & Honey Bunches of Oats
- both taste good
- more adult looking packaging
Different
Cinnamon Toast Crunch
- don’t like
- packaging geared toward children

Card #2 - Fruity Pebbles, Lucky Charms, & Corn Chex
Similar
Fruity Pebbles & Lucky Charms
- what the kids like
Different
Corn Chex
- what they won’t eat

Card #3 - Banana Nut Crunch, Special K & Frosted Mini Wheats
Similar
Banana Nut Crunch & Special K
- adult looking packaging
Different
Frosted Mini Wheats
- could be more of a family cereal
- everyone in the house eats it

Card #4 - Honey Nut Cheerios, Frosted Flakes & Grape Nuts
Similar
Honey Nut Cheerios & Frosted Flakes
- both taste good
- kids will eat
Different
Grape Nuts
- don’t like taste
- don’t like packaging

Card #5 - Trix, Captain Crunch & Cheerios
Similar
Trix & Captain Crunch
- don’t like but kids do
Different
Cheerios
- more of a cereal for the whole family

Interview #3
15 cereals identified by participant:
Life
Lucky Charms
Raisin Bran
Honey Nut Cheerios
Cheerios
Shredded Wheat
Trix
Total
Captain Crunch
Smorz
Private Label Magic Stars
Confruity Crisp
Cookie Crisp
Crispix
Chex

Card #1 - Lucky Charms, Confruity Crisp & Cookie Crisp
Similar
Lucky Charms & Confruity Crisp
- colorful
- lots of flavor
Different
Cookie Crisp
- no color added
- not much flavor

Card #2 - Cheerios, Magic Stars & Chex
Similar
Cheerios & Magic Stars
- same pieces
- same sizes
- grainy texture
Different
Chex
- different pieces
- different sizes
- smooth texture
Card #3 - Raisin Bran, Captain Crunch & Crispix
Similar
Raisin Bran & Captain Crunch
- healthy
- adult targets
Different
Crispix
- not healthy
- kids target

Card #4 - Trix, Smorz & Life
Similar
Trix & Smorz
- kids
- sugar added
- excitement
Different
Life
- adults
- no sugar
- plain

Card #5 - Honey Nut Cheerios, Shredded Wheat & Total
Similar
Honey Nut Cheerios & Shredded Wheat
- healthy
- adults
- texture
Different
Total
- not healthy
- kids
- not much texture

Interview #4
15 cereals identified by participant:
Fiber 1
Rice Krispies
Kellogg’s Raisin Bran
Cranberry Almond Crunch
Froot Loops
Cheerios
Trix
Great Grains
Cinnamon Toast Crunch
Blueberry Morning
Banana Nut Crunch
Frosted Flakes
Corn Flakes
Lucky Charms
Honey Nut Cheerios

Card #1 - Fiber 1, Great Grains & Honey Nut Cheerios
Similar
Fiber 1 & Great Grains
- good taste - lots sugar
- whole family likes
- always on sale
- good package
Different
Fiber 1
- healthy - bland taste
- only adult cereal
- need more sales
- basic package

Card #2 - Lucky Charms, Trix & Cinnamon Toast Crunch
Similar
Lucky Charms & Trix
- kids like taste
- average amount sugar
- milk not too sweet after cereal eaten
- nice cartoon characters
Different
Cinnamon Toast Crunch
- kids won’t eat - taste
- too much sugar
- milk not sweet after cereal eaten
- no cartoon characters

Card #3 - Rice Krispies, Kellogg’s Raisin Bran & Cheerios
Similar
Rice Krispies & Kellogg’s Raisin Bran
- kids cereal
- not very healthy
- good taste
- can get in many sizes
- no other brand
Different
Cheerios
- adult cereal
- too healthy
- tastes too healthy
- my store has only 1 size
- can buy Post raisin bran
Card #4  Corn Flakes, Froot Loops & Banana Nut Crunch

<table>
<thead>
<tr>
<th>Similar</th>
<th>Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corn Flakes &amp; Froot Loops</strong></td>
<td><strong>Banana Nut Crunch</strong></td>
</tr>
<tr>
<td>-good taste</td>
<td>-tried once-never again-terrible taste</td>
</tr>
<tr>
<td>-good &amp; crunchy</td>
<td>-too hard</td>
</tr>
<tr>
<td>-whole family eats</td>
<td>-nobody likes after trying</td>
</tr>
<tr>
<td>-always on sale</td>
<td>-never seen sale</td>
</tr>
</tbody>
</table>

Card #5  Blueberry Morning, Cranberry Almond Crunch & Frosted Flakes

<table>
<thead>
<tr>
<th>Similar</th>
<th>Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blueberry Morning &amp; Cranberry Almond Crunch</strong></td>
<td><strong>Frosted Flakes</strong></td>
</tr>
<tr>
<td>-both by Post</td>
<td>-I think Kellogg’s</td>
</tr>
<tr>
<td>-adult cereal</td>
<td>-kids cereal</td>
</tr>
<tr>
<td>-average sugar</td>
<td>-much sugar</td>
</tr>
<tr>
<td>-not too chewy</td>
<td>-very crunchy</td>
</tr>
<tr>
<td>-expensive</td>
<td>-pretty cheap</td>
</tr>
</tbody>
</table>

**Interview #5**

15 cereals identified by participant:

- Lucky Charms
- Great Grains
- Cranberry Almond Crunch
- Blueberry Morning
- Maple Pecan Crunch
- Frosted Flakes
- Corn Flakes
- Corn Chex
- Peanut Butter Crunch
- Kix
- Rice Krispies
- Froot Loops
- Cookie Crisp
- Frosted Mini Wheats
- Honey Bunches of Oats

Card #1  Great Grains, Honey Bunches of Oats & Kix

<table>
<thead>
<tr>
<th>Similar</th>
<th>Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Great Grains &amp; Honey Bunches of Oats</strong></td>
<td><strong>Kix</strong></td>
</tr>
<tr>
<td>-adults</td>
<td>-kids</td>
</tr>
<tr>
<td>-flakes</td>
<td>-round</td>
</tr>
<tr>
<td>-more ingredients</td>
<td>-less ingredients</td>
</tr>
</tbody>
</table>

Card #2  Cranberry Almond Crunch, Maple Pecan Crunch & Froot Loops

<table>
<thead>
<tr>
<th>Similar</th>
<th>Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cranberry Almond Crunch &amp; Maple Pecan Crunch</strong></td>
<td><strong>Froot Loops</strong></td>
</tr>
<tr>
<td>-natural</td>
<td>-artificial</td>
</tr>
<tr>
<td>-nuts</td>
<td>-no nuts</td>
</tr>
<tr>
<td>-less corn syrup</td>
<td>-more corn syrup</td>
</tr>
</tbody>
</table>

Card #3  Frosted Flakes, Cookie Crisp & Blueberry Morning

<table>
<thead>
<tr>
<th>Similar</th>
<th>Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frosted Flakes &amp; Cookie Crisp</strong></td>
<td><strong>Blueberry Morning</strong></td>
</tr>
<tr>
<td>-more sugar</td>
<td>-less sugar</td>
</tr>
<tr>
<td>-no fruit</td>
<td>-fruit</td>
</tr>
<tr>
<td>-kids</td>
<td>-adults</td>
</tr>
</tbody>
</table>

Card #4  Lucky Charms, Frosted Mini Wheats & Corn Flakes

<table>
<thead>
<tr>
<th>Similar</th>
<th>Different</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lucky Charms &amp; Frosted Mini Wheats</strong></td>
<td><strong>Corn Flakes</strong></td>
</tr>
<tr>
<td>-more sugar</td>
<td>-less sugar</td>
</tr>
<tr>
<td>Card #5</td>
<td>Rice Krispies, Corn Chex &amp; Peanut Butter Crunch</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Similar</td>
<td>Rice Krispies &amp; Corn Chex</td>
</tr>
<tr>
<td></td>
<td>- less sugar</td>
</tr>
<tr>
<td></td>
<td>- add fruit</td>
</tr>
<tr>
<td></td>
<td>- party food</td>
</tr>
<tr>
<td>Different</td>
<td>Peanut Butter Crunch</td>
</tr>
<tr>
<td></td>
<td>- more sugar</td>
</tr>
<tr>
<td></td>
<td>- don’t add fruit</td>
</tr>
<tr>
<td></td>
<td>- not party food</td>
</tr>
</tbody>
</table>
APPENDIX B

Breakfast Cereal Opinion Survey

You are being asked to participate in a survey to determine your perceptions of the breakfast cereal you just tasted. Participation in this survey is voluntary and confidentially is assured. No individual data will be reported.

THANK YOU!

1) Perceptions of Breakfast Cereal

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The following questions pertain to the breakfast cereal you just sampled. Please indicate the extent of your agreement or disagreement with each statement by circling a number 1 to 5.

1. This cereal has a good taste. 1 2 3 4 5
2. Other adults would like the taste of this cereal. 1 2 3 4 5
3. School children would like the taste of this cereal. 1 2 3 4 5
4. The packaging for this cereal is very good. 1 2 3 4 5
5. This cereal has a nice texture. 1 2 3 4 5
6. This cereal is healthy for you. 1 2 3 4 5
7. I like the ingredients of this cereal. 1 2 3 4 5
8. I would purchase this product for my children. 1 2 3 4 5