The Role of Segmentation in Understanding Consumers' Coffee-related Emotions

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Introduction

Coffee is divided into two categories based on quality:

- Commodity coffee or "generic coffee": prioritizes consistency and price
- Specialty coffee: is grown, processed, shipped, roasted, sold, and brewed with taste as the primary focus (Hoffman, 2014).

Interest in measuring product-related emotions has recently grown due to evidence that emotional responses provide information about products beyond traditional sensory and liking variables (Russel 2003).

Our hypothesis was that different coffee qualities trigger different overall acceptability and thus different emotions.

By understanding the hedonic and emotional changes certain consumer groups experience after drinking different qualities of coffee we can better understand and market to different types of coffee consumers.

Objective

To investigate how consumers hedonically and emotionally respond to coffees of low, medium, and high quality ranks using a segmentation method.

Materials and Methods

Samples: chosen based on their quality rating on coffeereview.com

- Folgers: score of 67
- Dunkin Donuts: score of 84
- Temple: score of 96

Consumers: 104 coffee drinkers

Questionnaire:

- ***Hedonic*** : 9 point scale
- ***Familiarity*** and ***Willingness to Buy***: 7 point scale
- ***44 Emotion*** (adapted from Bhumiratana et al, 2014): 5 point scale from 0–not at all, 4–extremely
- ***Demographic*** and ***coffee consumption*** information

Data analysis:

- Hierarchical Cluster Analysis: performed on consumer acceptability scores
- Principal Components Analysis: to explore the relationships between acceptability and emotions

Relationship between Liking and Emotion

- Initial ANOVA showed that consumers liked Folgers less, and Temple and Dunkin equally.
- Hierarchical Cluster Analysis: identified 5 clusters of consumers

		Liking (9-point hedonic scale)			Familiarity (7-point category scale)			Willingness to buy (5-point category scale)		
Cluster	**Size**	**Folgers**	**Dunkin**	**Temple**	**Folgers**	**Dunkin**	**Temple**	**Folgers**	**Dunkin**	**Temple**
1	19	7.47a*	3.95a	5.37b	4.53b*	3.32a	3.63ab	3.68a*	1.53c	2.53b
2	22	2.36c	4.64b	7.14a	1.95b	3.55a	4.32a	1.19c	2.27b	3.38a
3	28	5.93b	7.18a	7.48a	4.32b	5.23a	4.93ab	2.75b	3.39a	4.00a
4	24	3.71b	7.54a	4.22b	3.42b	4.92a	2.52b	1.83b	3.88a	1.78b
5	11	1.91b	3.45a	2.81ab	3.77a	3.87a	3.90a	2.51a	2.62a	2.69a

Average liking, familiarity, and willingness to buy scores of the coffee samples for each of the 5 clusters.
*Common letter in each sub row indicates no statistical difference at alpha = 0.10

- **Cluster 1**: liked Folgers the most
- **Cluster 2**: liked Temple
- **Cluster 3**: high liking scores for all three coffees and preferred both Dunkin and Temple over Folgers
- **Cluster 4**: liked Dunkin
- **Cluster 5**: lowest scores for liking and emotions so very few conclusions could be drawn

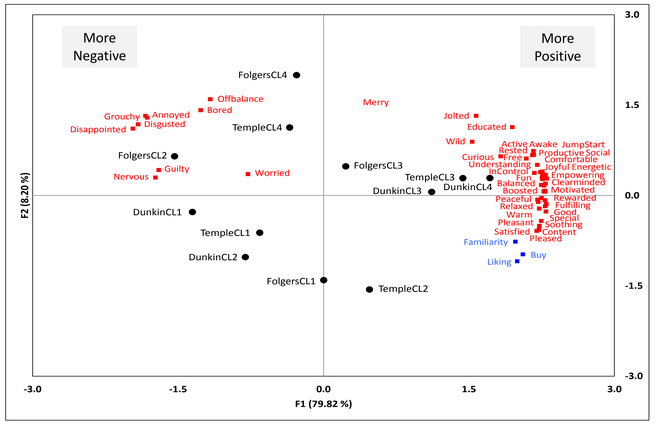

Fig 1. PCA biplot representing 4 consumer clusters with their liking of 3 types of coffees and 44 emotions evoked while drinking those three coffees

- Relationship between high liking scores and positive emotions and low liking scores and negative emotions
- One-way ANOVA indicated ~26 significant emotions for each cluster, with 11 in common with all 4: clear*-minded*, *content*, *disgusted*, *fulfilling*, *good*, *motivated*, *pleasant*, *pleased*, *rewarded*, *satisfied*, and *soothing.*

Segments of Coffee Consumers

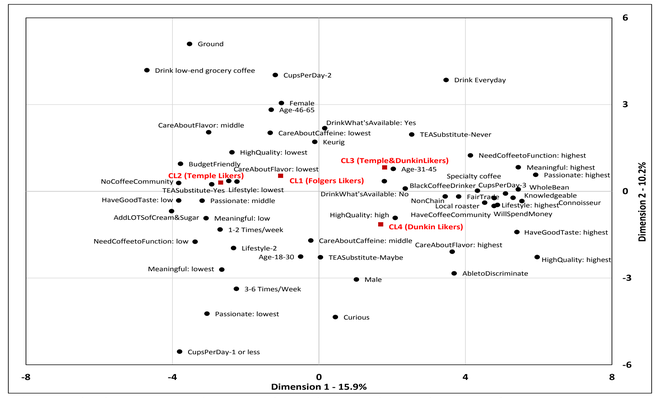

Fig 2. Multiple Correspondence Analysis Plot correlating the 4 significant consumer clusters with their coffee consumption habits and preferences

- **Cluster 1**: "Regular coffee drinkers" that prefer Folgers coffee and feel generally indifferent to coffee
- **Cluster 2**: "Ambivalent coffee drinkers" that prefer mild-flavored coffee with lots of cream and sugar and would be okay with drinking tea instead
- **Cluster 3**: "Coffee lovers" that like all coffees, experience a lot of emotion when drinking coffee, and would never substitute coffee for tea
- **Cluster 4**: "Coffee snobs" that care strongly about flavor and are picky and discriminative about their coffee

Key findings

- Hierarchical cluster analysis allows for multivariate data analysis by increasing sample size
- Four different clusters were identified, with a range of interest in coffee quality.
- The significant emotions for all 4 clusters imply that consumers consume coffee to experience feelings of gratification, calmness, focus, the absence of disgust, and overall positive emotions.
- In general, participants who value good coffee were correlated with having a coffee community, considering coffee "a lifestyle," finding passion and meaning in coffee, being passionate about coffee, being able to discriminate, spending money on coffee, and consuming three or more cups per day.

References

- Bhumiratana, N., Adhikari, K., & Chambers IV, E. (2014). The development of an emotion lexicon for the coffee drinking experience. *Food Research International, 61*(0), 83-92.
- Russell, J. A. (2003). Core affect and the psychological construction of emotion. *Psychological Review, 110*(1), 145-172.