



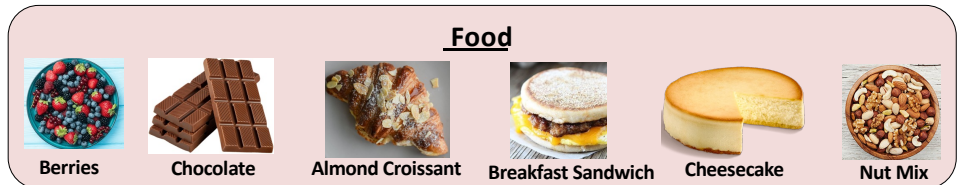
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INTRODUCTION

The pairing of foods and beverages has become an important research topic in sensory and consumer science, as foods and beverages are typically consumed together in a meal. Some examples include wine, beer, and tea. Coffee is the second most-consumed beverage in the world, yet there have been limited studies of coffee and food pairing combinations. Coffee offers a wide range of sensory profiles that warrant the investigation of the appropriateness of its pairing with different foods. Our hypothesis was that fruity and acidic coffees would pair better with sweet breakfast or dessert foods, whereas dark roasted and bitter coffees would pair better with savory foods.

EXPERIMENTAL DESIGN



Experiment 1
What food would go well with this coffee?
Coffee tasting group
Complete balanced design, N= 280
Taste coffee- Overall opinion JAR, CATA
Food- which foods pair with the coffee, CATA
Just-about-right (JAR), Check-all-that-apply (CATA)

Coffee X Food
24 coffee and food pairing combinations to be evaluated

Central location tests & sensory questionnaire

Experiment 2
What do you think about this coffee and food pairing?
Coffee and food tasting group
Complete balanced design, N= 238
Taste coffee- Overall opinion, JAR, CATA
Taste Foods- Overall opinion, CATA
Coffee and food pairings: Overall opinion, appropriateness, balance, sensory experience, harmony, congruency, opinions

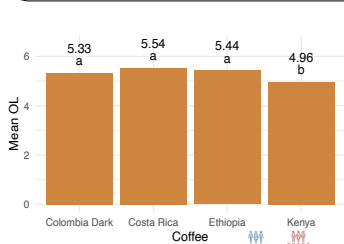


Figure 1. Mean overall liking (OL) of the four coffees from all consumers participated from the study, with LSD letter codes to indicate significant difference (N=510).

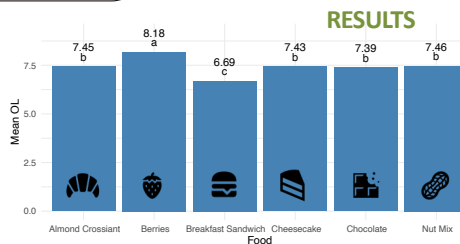


Figure 3. Mean overall liking (OL) of the six foods from consumers participated in coffee-and-food-tasting group, with LSD letter codes to indicate significant difference (N=238).

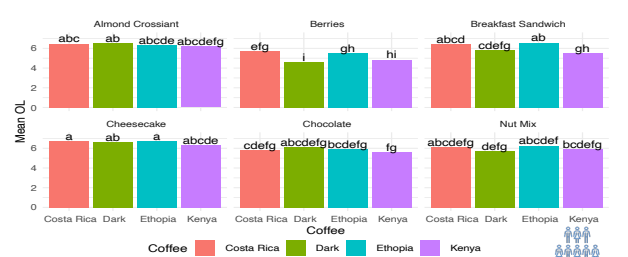


Figure 4. The mean overall liking (OL) of coffee and food pairings difference from consumers participated in coffee-and-food-tasting group, with LSD letter codes to indicate significant (N=238).

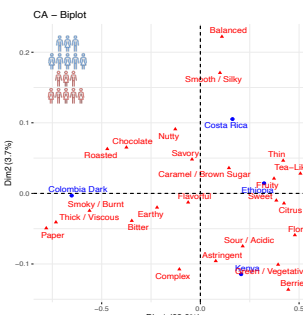


Figure 2: Correspondence analysis biplot of the four coffees and Check-All-That-Apply attributes from all consumers who participated in the study (N=510).

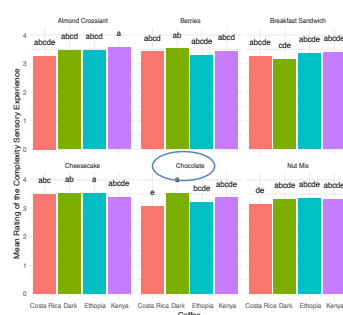


Figure 6. Evaluation of pairing quality- Complexity of sensory experience

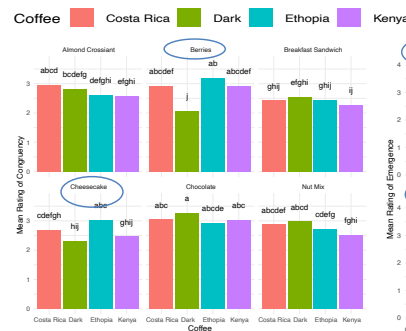


Figure 7. Evaluation of pairing quality- Congruency, which coffee and foods share similar flavors or aromas

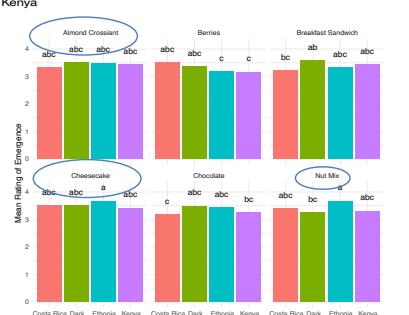


Figure 8. Evaluation of pairing quality- Emergence- which pairings creates new flavors or aromas

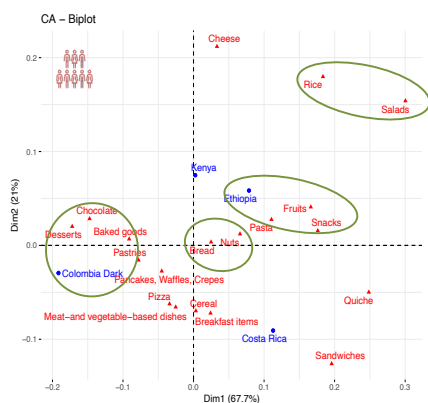


Figure 5. Correspondence analysis biplots of the four coffees and common food items from consumers participated in coffee-tasting group (N=280).

Key Learnings

- The 4 coffees received similar hedonic ratings (Figure 1), even though they had very different sensory characteristics (Figure 2).
- Overall liking differed among the foods themselves (Figure 3), but changed when evaluated with the coffees (Figure 4).
 - Berries had the highest OL on their own, but their pairing with coffee was least preferred.
 - Croissant and cheesecake paired well with all 4 coffees.
 - Chocolate and the nut mix received comparable ratings.
- Consumer expectations of coffee and food pairing were that desserts, chocolate, baked goods and pastries paired well with dark roasted coffee; fruity and floral coffee paired well with fruits; bread and nuts paired well with all coffees; rice and salads did not pair well with coffee (Figure 5).
- Most pairings had similar perceived complexity of sensory experiences (Figure 6), but that varied by food, with chocolate perceived as more complex when paired with the Colombia dark roast coffee compared to the Costa Rica coffee.
- Similarities in flavor/aroma between food and coffee were identified, but those did not necessarily contribute to the quality of the pairings (Figure 7).
- Pairings examined familiar (croissant and cheesecake with coffee) and new, emergent experiences (nut mix with Ethiopian Coffee), Figure 8.

Conclusions

- Familiarity with the pairing was the main driver of coffee and food pairing appropriateness or quality, but sensory congruency and hedonic congruency also resulted in high appropriateness ratings
- The more unusual combinations in our design led some consumers to give them high hedonic ratings, suggesting new avenues for the marketing of coffee.

ACKNOWLEDGEMENTS

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