

IDENTIFYING DIFFERENCES IN COFFEE CONSUMERS USING HEDONICS, EMOTION,
COFFEE INVOLVEMENT, AND SELF-IDENTITY

by

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(Under the Direction of Koushik Adhikari)

ABSTRACT

Coffee consumers differ in the importance and value they place in high-quality coffee. Focus groups revealed that coffee choices are influenced by habit, familiarity, meaning and significance, price, and one's identity as it relates to coffee. Emotional consumer tests were performed with three different qualities of coffee, leading to the identification of four consumer clusters that varied in their degree of "involvement" with coffee. "Typical coffee drinkers" and "uninterested coffee drinkers" did not care strongly about coffee, while "coffee lovers" loved all coffee and "coffee snobs" were choosy and discriminative about their coffee. Self-identified coffee connoisseurs were no more likely to consume high-quality coffee than non-connoisseurs, suggesting that self-selecting an identity may say more about consumers wish to convey versus their true consumption habits. The most important emotional qualities consumers seek in their coffee relate to gratification, calming, focusing, the absence of disgust, and general positive emotions.

INDEX WORDS: Coffee, Emotions, Involvement, Connoisseur

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by

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DEDICATION

I'd like to dedicate my thesis to the town of Griffin, Georgia.

This past year has certainly left an impression on me. Thank you, Griffin, for the many new experiences I will hold in my heart.

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CHAPTER 1

Introduction

Coffee is one of the most popular beverages worldwide, rooted in tradition with millions of devoted followers. On any given day approximately 60% of the U.S. population aged 18+ will drink a cup of coffee. Coffee is deeply culturally entrenched and can hold a great deal of meaning and significance to people. While there has been copious research about the sensory and chemical aspects of coffee and coffee beans, there is little in the literature about the psychology of coffee consumers and what is truly going on during the coffee drinking experience.

During the past several decades coffee has gone through a transition from a few brands of homogenous canned coffees to an explosion of specialty coffees with a range of unique aromas and flavors. As higher-quality coffees have become available, consumers have evolved to appreciate the unique sensory aspects and authenticity these coffees symbolize. The growth of specialty coffee has provided consumers with an opportunity to demonstrate their heightened taste through consumption of these coffees.

The appearance of these niche specialty coffee products has led to the emergence of a new kind of coffee drinker—consumers that specifically seek more authentic, flavorful coffee experiences. These consumers prefer higher-quality coffees and pride themselves in their ability to discriminate between coffees. One term that could be used to describe these consumers is “connoisseurs”—consumers that are very involved in their coffee. Coffee connoisseurs prioritize coffee and will be more willing to spend time and energy to acquire good-quality coffee.

It is likely that consumers who are deeply involved with coffee will respond differently and experience different emotions while drinking coffee. Understanding consumers' emotions in response to coffee drinking can reveal important information about their coffee drinking experience. Developing a better understanding of connoisseurs and different kinds of coffee drinkers can provide useful information for industry, marketing, and future research.

The objective of this project was to gain a more thorough understanding of different kinds of coffee consumers. The project was done in two parts: qualitative focus groups and quantitative emotional tests. Focus groups are useful when aspects of the basic phenomenon of interest are not well understood because they allow for collection of open-ended data that controlled, experimental research cannot. For this project the focus groups were used to gain a qualitative understanding of coffee consumption habits, coffee conceptualizations, and ideas related to connoisseurship. Focus groups were divided into self-identified connoisseurs and non-connoisseurs to develop a more thorough understanding of consumption motivations and attributes associated with connoisseurship. This information was be used to inform data collected in the subsequent consumer tests.

The second part of the project was an emotional consumer test. Consumers were served three different coffees of varying quality and asked to fill out a survey about their emotions using a previously-developed coffee emotional lexicon. They were also asked to fill out a demographic questionnaire based on concepts generated in the focus groups. This consumer test elucidated emotional and conceptual differences between different kinds of coffee consumers as they relate to different qualities of coffee. The hypothesis of this project was that consumers who prefer different qualities of coffee will have different preferences, liking, consumption behavior, and identities.

CHAPTER 2

WHAT ARE CONSUMERS REALLY FEELING? RECENT DEVELOPMENTS IN IDENTIFYING AND QUANTIFYING EMOTIONS EXPERIENCED DURING FOOD AND DRINK CONSUMPTION ¹

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Abstract

Emotions and the consumption of food and beverages are inextricably intertwined. As the fields of sensory and consumer science seek to better conceptualize the consumer experience, interest in emotion measurement is growing. Emotions can provide key information to differentiate between products and predict for consumer choice as well as give more detail about product perception. There are several emotion measurement instruments, including physiological methods and facial-recognition, self-reported verbal emotion measurement, and self-reported visual emotion measurement. This review discusses the purpose of measuring emotions, what is the definition of an emotion, what different instruments are available, and touches upon some promising research to deepen the connection between food and emotions.

Keywords: Emotion, Consumption, Measurement, Feeling, Food

Introduction

Why are we measuring emotions?

There is growing interest in measuring food-evoked emotions to better understand consumer behavior and food choice. Measuring emotional response to foods and beverages can be a valuable source of information for product development and marketing that goes beyond traditional sensory and liking measurement.

Food choice, like all decision-making, is based on both cognitive and emotional dimensions. Neurological patients no longer capable of processing “somatic” or emotional information experience difficulties in the decision making process, demonstrating that choices are heavily influenced by unconscious emotional response (Bechara, 2004). Emotions play an important role in consumer choice, particularly when processing resources are limited. A consumer tasked with memorizing a 7-digit number is more likely to made decisions based off of spontaneously evoked affective reactions instead of carefully rationed thought as compared to a consumer memorizing a 2-digit number (Shiv B & Fedorikhin A, 1999). Moreover, food-specific emotions add predictive power and strength to a model predicting for consumer food choice as compared to using only liking information (Dalenberg et al., 2014).

In addition to predicting for consumer choice, emotional profiling data can provide important information about products and discriminate between products more effectively than hedonic responses (Ng, Chaya, & Hort, 2013a). Emotions may reveal previously unknown aspects of sensory profile and product attributes, which can be a critical tool for industry product development and marketing (Russel, 2003). Knowledge of emotional profiles could be used to tailor products to emotional needs of different consumer segments, or market specific categories or brands (Gutjar, Dalenberg, et al., 2015). This can be used to guide product development

methods, to map a product category, and to relate the product to the brand essence, which typically conveys an important emotional aspect of the product (King, Meiselman, & Thomas Carr, 2013).

What is an emotion?

Defining what is an emotion has been the subject of great debate in the fields of sensory and consumer science as well as marketing, psychology, and sociology. This mini-review will briefly skim over some generally agreed-upon theories of emotion, leaving the larger debate for other researchers.

Bagozzi, Gopinath, and Nyer (1999) distinguish between moods and emotions, explaining that moods are typically longer lasting and lower in intensity than emotions while King and Meiselman (2010) define emotion as a brief, intense physiological and mental reaction focused on a referent. Appraisal theorists in psychology understand emotions as good or bad feelings based on a person's unique psychological appraisal of a stimulus (Bagozzi et al., 1999). These evaluations can be either conscious and deliberate or unconscious and automatic (Mulligan & Scherer, 2012). Emotions are thus difficult measure because people cannot always identify the trigger or even the emotion itself. There is current disagreement as to which words are proper "emotional" terms that qualify as genuine emotions, which may resolve over time as emotional testing becomes a familiar and standardized research (Meiselman, 2015). There are a multitude of instruments that have been developed to measure emotions. The purpose of this review paper is to discuss methodologies for measuring emotions and summarize recent research to provide guidance for those investigating the connection between food and emotion.

Emotion Measurement Instruments

Emotions are non-cognitive by nature, rendering them difficult to capture, measure, and quantify. The instruments currently available to measure emotions are physiological methods, facial recognition methods, verbal self-report, and visual self-report.

A physiological method to capture the biological responses that indirectly accompany emotions is skin conductance (SC), which measures electro-dermal activity triggered by emotions through the skin conductance response (SCR) (Poels & Dewitte 2005). Another instrument measuring physical responses to emotions is facial electromyography (EMG), which detects movements of two facial muscles—the corrugator muscle and zygomatic muscle, associate with positive and negative emotion, respectively. EMG observes micro-emotional responses that make muscles tense or relax (Harrigan, Rosenthal, Scherer, 2008). These methods, while reliable and useful, do not provide the same detail as self-report measures and are less likely to be used to measure food-evoked emotions in a product development context.

Verbal self-report methods

The majority of research in food-evoked emotions involve reports of one's subjective experience. Questionnaire techniques are the most common method to assess emotional response in which participants are asked to check or rate emotions presented as single terms or questions.

There are many instruments used for verbal self-report, one of the most prominently known being EsSense Profile, developed by King & Meiselman (King & Meiselman, 2010). The EsSense profile was constructed from lists of words selected for relevance in describing emotional or feeling responses to words. The questionnaire asks participants to rate 39 emotions, presented as single words, via a 5 point scale from 0 (not at all) to 4 (extremely). EsSense Profile® consists of 25 positive words, 3 negative (bored, disgusted, and worried) and 11

uncategorized. This is due to “hedonic asymmetry”—the phenomenon in which consumers respond to commercial products with primarily positive emotions (Desmet & Schifferstein, 2008).

The EsSense Profile® was designed to be expanded or edited for specific product categories and applications (King & Meiselman, 2010). Different foods are associated with different emotions, and one comprehensive list won't be able to cover all food categories. Researchers have used pre-existing emotion lists like EsSense as a starting block or started from scratch to develop an emotional lexicon (Jiang, King, & Prinyawiwatkul, 2014)

One concern with verbal single-word emotional questionnaires is that participants may be confused by the task. Thomson, Crocker, and Marketo (2010) explain that emotions are irrational impulses and may be misrepresented when subjected to cognitive thought processes. When Jaeger, Cardello, and Schutz (2013) had participants using EsSense Profile® share their thoughts aloud, several participants indicated they didn't understand certain emotion words or perceived them to be too similar. Additionally, some participants felt they were not strongly experiencing the emotion words, that the task was long and intimidating, and that they experienced pressure by the testing procedure to vary their responses and indicate feeling emotions more strongly. Providing extended instructions allowed patients to more quickly get into the task and question it less (Jaeger et al., 2013). While this was not the experience of all participants, one should take into account that there may be a degree of bias in single-word emotion testing.

One option to address these concerns is to clarify the task by grouping lists of emotions into clusters preceded with “I feel” (Sara Spinelli, Masi, Dinnella, Zoboli, & Monteleone, 2014). Thomson et al. (2010) chose to avoid measurement scales altogether by using best-worst scaling for emotional profiling. Consumers are presented with a set of 4-5 emotion words (in quads or

quins) to describe the object under investigation. The participants are asked to pick one of the words, and shown 8-20 quads/quins in a balanced statistical design, which was analyzed by predicting the likelihood of them picking a certain word.

These verbal lexicons, in addition to the traditional method of having consumers scale or rate every emotion, can have consumers respond by check-all-that-apply (CATA) or rate-all-that-apply (RATA). CATA relieves participants from having to think as much about quantifying their emotions, making the process relatively easier and more natural, but it provides less data to analyze. CATA might be chosen because it is less cumbersome for participants (Coleman, Miah, Morris, & Morris, 2014) or with children who may have difficulties with a ranking task (De Pelsmaeker, Schouteten, & Gellynck, 2013), (Jervis, Jervis, Guthrie, & Drake, 2014). Ng et al. (2013a) recommend RATA, as it is more sensitive and provides useful quantitative data without the pressure to rank every single emotion. One other method of response is to rate intensity of emotion clusters on a 150 mm line (Chaya et al., 2015).

Visual self-report methods

There have been several visual questionnaire techniques developed to attempt to avoid the verbal processing required with word scaling measurement instruments. Visual methods measure subjective feelings just like verbal reports, using images to depict different emotional states. Because emotions are intuitive, using images can be useful to ascertain true emotional responses because it limits the rational or cognitive thought process that is required to understand verbal cues (Jaeger et al., 2013).

The Self-Assessment Manikin (SAM) was the first visual method developed, with three pictorially-depicted factors—Pleasure, Arousal and Dominance (PAD) which can be rated on a 9-point scale (Bradley & Lang, 1994). One of the most well-known visual methods is PrEmo

with seven positive and seven negative emotions depicted as animated cartoon pictures (Desmet et al 2000). PrEmo wasn't developed as a food product-specific instrument and allows for more negative options, resulting in a larger spread of valence scores. This made PrEmo a stronger predictor for product choice than EsSense with breakfast drinks, of which there was a considerable amount of dislike (Dalenberg et al., 2014).

Another visual measurement technique is the Image Measurement of Emotion and Texture (IMET), in which participants were asked to create their own My Pictures board, with self-selected images to represent twelve different emotions (Collinsworth et al., 2014). Having participants select their own images or providing them with images gave less variability in responses than the twelve emotion words alone. Other visual measurement instruments are VAMS, or Visual Analog Mood Scales, with eight internal mood states and GEOS, a 6 scale model designed for affective feelings induced by odors (Porcherot et al., 2010).

One intriguing new visual instrument is the emotive projection test, in which consumers rate photographs of people on a number of positive and negative personality traits after consuming a particular food product (Mojet et al., 2015). This test reveals subtle differences in the connection between certain food consumption and emotional feelings towards other people.

Lexicon Generation

Selecting a questionnaire depends on the aim of the study and the characteristics of the target group. Many researchers have found it appropriate to make their own emotional lexicon, either by starting from scratch or modifying pre-existing lists such as the EsSense Profile®. Consumer defined lexicons have the benefit of being more discriminating for a particular product than a general lexicon (Sara Spinelli et al., 2014) and (Ng et al., 2013a). A consumer-led lexicon

costs time and resources but may be able to exclude irrelevant terms and remove consumer confusion (Chaya et al., 2015).

A systematic approach should be used to develop a verbal measurement tool, which is outlined well by Jiang et al. (2014). Lexicon development that begins with previously-generated terms will go through a process of determining the relevance and appropriateness of terms with consumer reports and applying criteria with advanced judgment methods (Gmuer, Nuessli Guth, Runte, & Siegrist, 2015). Alternately, emotion words can be generated from scratch. Sara Spinelli et al. (2014) had consumers describe emotions felt for groups of 3 liked and 3 disliked chocolate hazelnut spreads and then used semiotic methodology to identify semantic units, grouping words with the same meaning into the same category. Ng, Chaya, and Hort (2013b) and Chaya et al. (2015) used another term-generation approach with triadic elicitation, asking consumers to describe how 2 products were emotionally different from the 3rd.

Lexicons can also be generated from pre-existing language databases. Gmuer et al. (2015) looked at comprehensive language databases to extract German emotion terms that were more actively used in everyday situations, thus representing active language use.

Summary of Recent Research on Emotional Measurement

Questionnaire

There are several things to take into account when designing a test to measure for emotions. While there are hundreds of emotion-related words, the number listed in a questionnaire should be limited to that which can be reasonably scaled by a consumer to avoid panelist fatigue (Jaeger et al., 2013), but also be sufficient to reveal emotional differences among products that might be missed with a smaller number (Cardello et al., 2012). Most emotion questionnaires have between 30-40 (King et al., 2013).

The list of words can be presented in any order, either random or alphabetical (King & Meiselman, 2010). However, questions about liking and overall acceptance should be asked before emotional scaling, as the experience of thinking about one's emotions has been shown to bias the response if asked after (King et al., 2013). Additionally, Chaya et al. (2015) used a control "dummy" sample as the first sample for every participant to familiarize consumers with the task, subsequently throwing out the data to avoid first-order effects.

Context

The context of emotional measurement can affect the emotional responses elicited. While measuring in a traditional restaurant setting has so many variables it can obscure emotional differences between foods (Porcherot, Petit, Giboreau, Gaudreau, & Cayeux, 2015), contexts that are more natural and appropriate have been shown to elicit a higher frequency and intensity of positive emotions (Piqueras-Fiszman & Jaeger, 2015). Bhumiratana, Adhikari, and Chambers Iv (2014) took context into account by asking participants to drink only one cup of coffee per session in a public lounge setting to simulate a coffee shop atmosphere.

Measuring food name

Emotional responses to names and products show similar patterns of underlying dimensions (Cardello et al., 2012). Asking for emotions in relation to food names is more likely to generate responses based on emotional associations instead of actual elicited emotions. This data can be useful for learning more about brand associations, but may be less helpful in distinguishing between products. King et al. (2013) found that, in some circumstances, asking consumers to evaluate the name of a product instead of the product itself elicited stronger emotions than actually consuming it, possibly because the name brings forth an idealized version of the product as compared to the more realistic version of the product.

Time

Emotions are different throughout the consumption process. Jager et al. (2014) used Temporal Dominance of Emotions to observe emotional change over time while consumers ate chocolates, asking subjects to choose between 10 emotional attributes to indicate their dominant emotional experience at any given time throughout the process. This data was compared to Temporal Dominance of Sensation to see correlations between certain sensory and emotional perception.

Schifferstein, Fenko, Desmet, Labbe, and Martin (2013) had consumers indicate their emotions during different stages of product usage of a dehydrated food. They found that during food purchase emotions were mainly elicited from pre-existing ideas about the food product, whereas during subsequent stages of opening the package, preparing, and consuming food, consumers experienced emotions from the sensory aspects of these processes. Li, Jervis, and Drake (2015) also found that emotional experiences in purchase situation were directly related to desires and beliefs.

Packaging

Gutjar, Dalenberg, et al. (2015) investigated how intrinsic (sensory) and extrinsic (packaging) cues affect consumers emotional responses to foods, by providing consumers with either blind taste, package, or package and taste. The addition of packaging added an extra element of the intensity of feeling (weak to strong feelings) as opposed to just positive or negative feelings to a model for predicting for consumer choice.. Ng et al. (2013b) also found different emotional profiles for blackcurrant squashes when participants were given information about the products. It appears that that the sensory aspects of food trigger emotional reactions, while extrinsic properties like packaging evoke emotional conceptualizations based on abstract

concepts like brand, package, and product name (Gutjar, Dalenberg, et al., 2015). S. Spinelli, Masi, Zoboli, Prescott, and Monteleone (2015) found that packaging plays a secondary role in eliciting emotion. When there is a mismatch between the sensory aspects of the product itself and the brand it can lead to changes in product acceptability.

Conclusions

In conclusion, emotions are rapidly becoming more relevant and important to understand consumer product conceptualization, differentiate between products, and predict for consumer choice. There are many possible instruments to use in emotional profiling, one of the most common being the EsSense Profile®, which can be expanded and edited to suit specific applications.

Future research should focus on refining and improving the available emotion measurement instruments as well as developing food-specific alternatives to verbal instruments to allow consumers to avoid unnecessary cognitive processing. Other avenues of research may involve expanding the work on temporal dominance of emotions, as well as correlating emotions and sensory aspects of products to develop a better understanding of consumer product perception.

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CHAPTER 3

EMOTIONS AND THE COFFEE DRINKING EXPERIENCE ²

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Abstract

Coffee is one of the most popular beverages worldwide, rooted in tradition with millions of devoted followers. While there has been copious research about the sensory and chemical aspects of coffee and coffee beans, we know surprisingly little about how consumer psychology during coffee consumption. What are people really feeling when they drink a cup of coffee? Emotions are a big part of the consumer experience, particularly with something as culturally entrenched as coffee. This current research identifies and assesses the feelings that are stimulated by the coffee drinking experience through the development of a 44-term consumer-generated emotional lexicon. This lexicon is used to observe how emotions differ depending on the type of coffee and between different clusters of coffee consumers as well as make inferences as well as correlate sensory aspects of coffee and specific emotions. Results indicated that coffee drinkers consume coffee for three distinct reasons—high energy emotions, low-energy emotions, and a focused mental state. Additionally several flavor components were correlated to specific emotions. Dark roasted coffee sensory attributes were correlated with positive emotions while flavors like citrus and hay-like were associated with negative emotions.

Introduction

Coffee is a crucial part of many people's day. Some coffee drinkers will be irritable, grumpy, and generally awful to be around if they miss their morning brew. Others simply take great delight in the pleasant sensory experience of a warm cup of coffee and feel satisfied and comforted by the complex aromatic notes from single-origin freshly-roasted beans. Coffee can mean so many different things to different people—a routine, an uplifting treat, a time to relax, a shared social experience, a needed fix, and much more.

Coffee is one of the most popular beverages worldwide, rooted in tradition with millions of devoted followers. While there has been copious research about the sensory and chemical aspects of coffee and coffee beans, we know surprisingly little about consumer psychology during coffee consumption. What are people really experiencing when they drink a cup of coffee? Emotions are a big part of the consumer experience, particularly with something as culturally entrenched as coffee. Developing an understanding of emotions will add a layer of explanation to how people truly perceive their coffee and allow us to better conceptualize coffee consumption.

The purpose of this current research is to identify and assess the feelings that are stimulated by the coffee drinking experience through the development of an emotional lexicon as well as observe how emotions differ depending on the type of coffee and between different clusters of coffee consumers.

Why study food-evoked emotions?

Coffee is one of the most popular beverages enjoyed by diverse global populations, and understanding the relationship between coffee preferences and emotional experiences among consumers will be beneficial for research, product development, and marketing across the globe.

Any influence that food has on emotions can have broad significance to consumer behavior. Measuring emotions is a relatively new field in sensory and consumer science, but one that has shown great promise by providing information about products that goes beyond traditional sensory and liking.

Foods are designed and marketed on the basis of potential emotional impact on consumers. Emotional profiling can help companies tailor products to different consumer segments or market specific categories or brands (Gutjar, de Graaf, et al., 2015). Additionally, knowledge of consumer emotions in response to specific foods can help to map a product category and relate a product to the brand essence (King & Meiselman, 2010).

Measuring emotions can also reveal previously unknown aspects of sensory profile and product attributes. Liking is one way to discriminate between products, but industry produces a lot of products with similar liking. Information about consumer emotions can discriminate between products with equivalent liking, thus providing an important source of information for product development and marketing (Chaya et al., 2015). Emotions are also critical in understanding consumer choice. Measuring emotions adds predictive power and strength to a model predicting for consumer choice as compared to only using liking information (Dalenberg et al., 2014).

What is an emotion and where does it come from?

An emotion is a brief, intense physiological and mental reaction focused on a referent (King & Meiselman, 2010). Appraisal theorists in the field of psychology explain emotions as positive or negative feelings based on a person's appraisal or evaluative judgment of a stimulus. These evaluations of external and internal input can be either conscious and deliberate or unconscious and automatic (Mulligan & Scherer, 2012). Emotions overall are subjective in

nature, often accompanied by physiological responses, and may result in specific actions to address them (Bagozzi et al., 1999). Moods, while they may still be categorized as “feelings”, are generally longer-lasting and less intense than emotions.

There are five typical referents for food emotion: sensory attributes, experienced consequences, anticipated consequences, personal or cultural meaning, and actions of associated agents that include people involved in the experience (Desmet & Schifferstein, 2008). When consumers were asked to indicate the product aspect that correlated with the emotion they were experiencing 49% cited smell and taste as eliciting emotion, while 23% credited the food quality, and 14.6% said it was the anticipated consequence and subsequent consumption of eating food. Important contextual factors included social events and consumption moments (Desmet & Schifferstein, 2008).

There have been many efforts to organize emotion words into a hierarchy or model to facilitate conceptualization. The most common model used for food-evoked emotions and the one found appropriate for this research is the circumplex model of affect, a bipolar model that can be arranged on two intersecting axes of valence (positive to negative) and arousal (strong to weak) (Russel, 1980). Most emotions are able to be mapped onto one of the four quadrants created by this model (Ng et al., 2013a).

How do we measure emotions?

There are a wide array of instruments available to measure consumer emotions, including physiological, face-reading, visual surveys, and verbal surveys. The most commonly utilized method for emotional research is a verbal survey. Verbal surveys or questionnaires ask consumers to self-report the emotions they are experiencing by checking them off of a list or scaling them from low to high intensity. Providing consumers with pre-existing lists of emotions

results in a much higher quantity of data that can be subsequently analyzed (average 27 words) whereas asking consumers to freely list the emotions they are experiencing causes them to struggle for words (average less than 4 words) (Jaeger et al., 2013).

A lexicon is “the vocabulary of a person, language, or branch of knowledge.” In emotions research, it refers to the list of emotions that have been found to be relevant to that particular product. The most widely used emotional lexicon is The EsSense Profile®, a list of 39 emotions that can be rated on a 5 point scale from 0 (not at all) to 4 (extremely) (King & Meiselman, 2010). It is a general ‘eating experience’ scale that can be broadly applied to all foods. However, different foods have unique sensory characters and functional purpose that could induce or elicit distinctive sets of emotions and have a widely different emotional impact on consumers. If the resources are available, it is recommended that a lexicon be developed for specific product categories and applications (King & Meiselman, 2010).

Development of the initial emotion lexicon for coffee drinking experience (CDE)

In order to fully describe the coffee drinking experience, a consumer-generated emotional lexicon was developed for coffee (Bhumiratana et al., 2014). The EsSense Profile was used as a foundation for the coffee drinking experience lexicon development because it has been shown to discriminate among different categories and within the same food types. Coffee consumers were recruited for a series of focus groups to generate and refine an emotional lexicon unique to the coffee drinking experience.

The first step in generating an emotional lexicon was generating terms. Five, 60-minute focus groups were conducted in a reserved study room at two local coffee shops (Bhumiratana et al., 2014). The sessions began with the moderator asking panelists to share their favorite coffee beverage, what they enjoyed about it, and what sensory characteristics or feelings they hoped to

get from this beverage. Panelists were then asked to share their coffee drinking habits and their feelings during the coffee drinking experience. They gave definitions for a ‘good’ cup and a ‘bad’ cup of coffee and discussed emotions they experienced during coffee consumption at different locations such as a coffee shop or restaurant, home, office or work, and on-the-go in order to generate as many emotional terms as possible. These focus groups generated 134 emotion adjectives related to the coffee drinking experience, with 95 new terms and 39 EsSense Profile terms.

The next step was fine-tuning the generated terms. Two focus groups of heavy coffee users (3 or more times per week) reduced the generated list to 118 terms, rejecting those they thought to be redundant, unclear, or inappropriate.

Afterwards, 48 medium and heavy users were used to refine the 118 terms. They were presented with two popular coffees, Starbucks Coffee® Breakfast Blend and Dunkin’ Donuts® Dark Roast, and asked to check all the emotions that applied to their experience. Emotional terms that were checked less than 10 times were eliminated from the lexicon. Usage frequency resulted in a final list of 86 retained terms, including 39 EsSense Profile™ terms, as presented in Table 2.

This list of generated terms shows an overwhelming trend towards positive emotions, known as hedonic asymmetry. This is commonly seen in food-evoked emotion measurement as people respond to commercial products with primarily positive emotions (Desmet & Schifferstein, 2008). The next part of the research will demonstrate how this initial lexicon was further narrowed down and used to generate six consumer clusters.

Table 3.1. Final list of emotion terms refined by the check-all-that-apply method

ACTIVE	CULTURED	GLAD	MOTIVATED	SATISFIED
ADVENTUROUS	CURIOUS	GOOD	NERVOUS	SECURE
AFFECTIONATE	DARING	GOOD-NATURED	NOSTALGIC	SOCIAL
AGGRESSIVE	DISAPPOINTED	GROUCHY	OFF-BALANCE	SOOTHING
ALERT	DISGUSTED	GUILTY	PEACEFUL	SPECIAL
ANNOYED	EAGER	HAPPY	PLEASANT	STABLE
ATTENTIVE	EDUCATED	HOME	PLEASED	STEADY
AWAKE	EMPOWERING	IN CONTROL	POLITE	TAME
BALANCED	ENERGETIC	INDEPENDENT	PRODUCTIVE	TENDER
BOOSTED	ENTHUSIASTIC	INTERESTED	QUIET	TIRED
BORED	EXCITED	INTRIGUED	READY	TOLERATED
CALM	EXPERIMENTAL	JOLTED	RELAXED	UNDERSTANDING
CLEAR MINDED	FOCUSED	JOYFUL	RELIEVED	UPSET
COLLECTED	FREE	JUMP START	RESTED	WARM
COMFORTABLE	FRIENDLY	LOVING	REWARDED	WHOLE
COMFORTED	FRUSTRATED	MERRY	SAD	WILD
CONTENT	FULFILLED	MILD	SAFE	WORRIED
COZY	FUN			

**Bold terms are from the ESP*

Application of the initial lexicon to six coffee samples

An emotional lexicon should have a sufficient quantity of terms to reveal significant differences between testing conditions or products, but be careful to not overwhelm the participants. Emotional questionnaires usually list around 30-40 terms to avoid missing out on information and ensure consistent results (King et al., 2013).

In order to reduce the list, 94 heavy coffee drinkers (3 times/week) were asked to rank the 86 emotions on a 5-point scale (1= not at all to 5= extremely) twice--before coffee was served and while drinking a cup of coffee. They were also asked to indicate overall acceptance. The difference in ratings before and during coffee drinking was calculated to determine the influence of coffee consumption on emotion.

Coffee varieties covered the range of roast levels from light to dark and included coffee samples from various growing regions, as well as some organic certified samples. Six samples were selected based on those criteria so that at least one of the six samples would be the representative of individual likes or dislikes as well as represent the range of roast levels from light to dark. The varieties of coffee are listed in Table 3.2. Keurig® K-Cups were used in this study to enable a randomized design of products among consumers and ensure similar serving temperature.

Table 3.2. List of coffee samples

Brand	Type/Blend	Roast level	Additional information
Green Mountain®	Breakfast	Light	
Green Mountain®	Nantucket	Medium	
Green Mountain®	Sumatra Reserved	Dark	Fair Trade Certified™, Organic
Tully's	Kona	Medium	
Tully's	Italian Roast	Dark	
Newman's Own® Organic	Special Blend	Medium/Dark	Fair Trade Certified™, Organic

Consumers made six visits total, with one coffee consumption per visit. Sugar, milk, and creamer were provided as needed. After the first sample was completed, the same amount was added for the rest of samples to ensure consistency. A student lounge was used as a testing location to mimic the casual, social atmosphere of a coffee shop.

This consumer panel was able to reduce the list of emotional terms from 86 to 44 significant emotions that were relevant in predicting for coffee preference. Stepwise regression analysis with forward selection by each consumer cluster and each coffee sample were used. A

model was created using overall acceptability scores as the response variable and emotion scores as the independent variable. Liking, or overall acceptability scores, can be seen in Table 3.3.

Table 3.3. Average liking scores for each coffee within each cluster (rated 1-9).

Cluster	Breakfast	Italian	Kona	Nantucket	Newman	Sumatra
C1 (n = 20)	7.7 ^{ns}	6.9 ^{ns}	7.3 ^{ns}	7.7 ^{ns}	7.5 ^{ns}	7.2 ^{ns}
C2 (n=17)	4.4 ^c	6.9 ^{ab}	6.7 ^{ab}	6.1 ^b	7.2 ^a	6.5 ^{ab}
C3 (n=24)	7.0 ^a	6.0 ^b	5.8 ^b	7.5 ^a	5.3 ^b	3.7 ^c
C4 (n=13)	4.6 ^b	3.5 ^c	5.7 ^a	6.0 ^a	5.5 ^{ab}	5.4 ^{ab}
C5 (n=10)	7.1 ^a	3.3 ^{bc}	3.5 ^b	4.1 ^b	2.2 ^{cd}	2.1 ^d
C6 (n=10)	5.9 ^{ab}	6.4 ^{ab}	7.0 ^a	3.6 ^c	5.1 ^b	6.1 ^{ab}

Means within each cluster with different letters are significantly different (P<0.05)

Consumers were grouped into 6 clusters based on their overall acceptability scores, or which coffees they liked and disliked. Emotion profiles for each coffee sample within the consumer cluster were distinct and the product-emotion bi-plots demonstrated that each consumer cluster responded differently to the coffees they rated the highest. This indicates that each group of coffee drinkers sought different affective feelings from the drinking experience.

Each consumer cluster is unique in which coffee they liked and the emotions they experienced in response to these coffees. PCA plots are not depicted due to space restrictions, but demonstrate how emotion is a unique distinguishing factor from liking—in many situations coffees that have similar liking show very distinct emotion profiles.

Consumers in cluster 1 liked all samples equally but demonstrated distinct emotion profiles for each samples, with both positive and negative emotions showing up for all samples. It is difficult to ascertain emotion drivers for this group as they like the coffee samples all the same.

Cluster 2 disliked Breakfast coffee much less than the other coffee, which is reflected by their emotions. Breakfast was anchored by *disappointed*, *disgusted*, *bored*, and *annoyed*. The

remaining samples were explained mostly by positive emotion terms consistent with the liking scores.

Coffee drinkers belonging to cluster 3 gave Nantucket and Breakfast the highest liking scores, and Sumatra the lowest. Nantucket stimulated positive emotion terms; *comfortable, pleasant, satisfied, rewarded, special, and guilty*, while Breakfast likely elicited similar emotions but at lower intensities. Kona was correlated with *clear-minded, social, motivated, active*, but was much less liked than Nantucket, indicating that this cluster preferred coffee that made them feel positive low-energy emotions over coffee producing active, task-oriented emotions.

Consumer cluster 4 did not appear to have strong positive or negative preferences for any sample, except for a dislike of Italian, which caused them to feel *annoyed* during the drinking experience. Because these consumers did not have a clear direction in their preferences, emotions elicited by each coffee were mixed with both positive and negative terms.

Consumer cluster 5 showed a clear preference for Breakfast, which brought out positive emotions like *empowering, educated, social, and peaceful*. The preference scores seemed to decrease as the roast level increased (degree of roasting from light to dark: Breakfast – Nantucket – Kona – Newman – Italian – Sumatra).

Consumer category 6 rated Nantucket the lowest and Kona the highest. Kona was described by positive emotions describing a focused mental state--*motivated, clear-minded, balanced, productive, and empowering*. Nantucket increased negative feelings, particularly *worried and disappointed*. These consumers appeared to like coffees that offered them the task-oriented emotions over the positive-low energy feelings (Italian, Sumatra, and Breakfast).

As we can see, these 6 consumer clusters are unique in which coffees they prefer and the emotional drivers for these preferences.

Correlating emotion with coffee consumption habits

Coffee drinkers consume coffee for enjoyment and relaxation, as well as energy and caffeine intake (Asioli, Næs, Granli, & Lengard Almlí, 2014). Drivers include ‘I want to indulge myself’ followed by ‘It will keep me awake’ and ‘I need new energy.’ Coffee drinking is primarily motivated by two factors-- sensory enjoyment (hedonic motivation) or by stimulation (functional motivation) (Labbe, Ferrage, Rytz, Pace, & Martin, 2015). People may make different coffee choices based on their whether they are drinking coffee more for the flavor or more for the caffeine. Subsequently, they may experience different emotions during the coffee drinking experience.

The 96 consumers that evaluated coffees were divided into three distinct categories based on their usual routines: home-brewers that use whole beans, home-brewers that use ground beans or pods, and consumers who drink coffee outside the home to elucidate emotional differences between typical consumption routines (Erica Kenney, 2015). It is common knowledge among coffee drinkers that grinding whole beans directly prior to brewing results in the highest quality cup of coffee. In contrast, store-bought pre-ground beans are susceptible to several flavor-degrading conditions including oxidation and spoilage, moisture absorption, loss of volatile compounds, and contamination from outside odors (Sage, 2012). Coffee obtained outside the home may come from a variety of locations from upscale cafes to quick shops to the workplace, resulting in a wide range of quality. Generally, however, one can assume that whole-bean drinkers prioritize flavor, ground-bean drinkers are less concerned with flavor and interested in

the convenience of not having to grind their own beans, and outside-the-home drinkers are most interested in convenience and accessibility.

An Analysis of Variance was performed with respect to the three categories of coffee drinkers to see which emotions were significant to each group. Twelve significant emotions were found, which were then they were separated by Tukey-Kramer. Table 3.4 indicates which emotions were found to be unique to each group.

Table 3.4. Changes in emotion that distinguish between 3 categories of coffee drinkers.

Emotion	Not at Home	Ground Bean at Home	Whole Bean at Home
Active	a	b	b
In control	a	b	ab
Eager	a	ab	b
Awake	a	ab	b
Nostalgic	b	a	ab
Tame	b	a	ab
Soothing	b	a	ab
Home	b	a	a
Satisfied	b	ab	a
Good	b	ab	a
Comforted	b	b	a
Disappointed	ab	b	a

Different letters in a row indicates significant difference ($P < 0.05$). The highest emotions for each column (indicated by “a” letter) are shaded for clarity.

This analysis shows us that consumers who drink coffee at home experience pleasant and calm emotions while not-at-home coffee drinkers experience high-energy feelings. Whole bean users felt satisfied, good, and comforted after coffee consumption and experienced the most disappointment after drinking these coffees, possibly because Keurig coffee uses pre-ground beans and may be lower quality than they are accustomed to. Ground bean users felt soothed, tame, and nostalgic after drinking coffee. Not at home coffee drinkers experienced higher feelings of in control, eager, active, and awake.

These three groups experienced significantly different emotions in response to drinking a cup of coffee, which hints at their priorities and motivation for coffee consumption. We can infer that whole bean users likely drink coffee primarily for pleasure and highly prioritize flavor. Ground bean users drink coffee to feel calm, at-ease, and relaxed. Not-at-home coffee drinkers consume coffee for the caffeine it provides, which may be more important to them than a pleasurable sensory experience. It is clear that consumers experience significantly different emotions while drinking coffee depending on their typical coffee consumption routines. This can help us develop an understanding of their personal motivation to drink coffee as it relates to hedonic enjoyment or caffeine stimulation.

Using Wordle to generate a word cloud

Wordle software (Wordle.com) was used to choose the most widely picked emotions.

Figure 3.1 shows the image created by the website.



Figure 3.1. Wordle image created based on frequency of word use for 96 consumers drinking 6 coffee samples

Sensory drivers for emotion

We know that different coffees elicit different emotions, but what is it specifically that provokes these emotions? Are certain flavors correlated with certain feelings? Sensory drivers for specific emotions elicited by coffee drinking were identified using the emotion profiles generated by the 44 emotions on the coffee drinking experience lexicon.

A highly-trained coffee panel performed descriptive analysis of the six coffee samples to identify the significant sensory attributes for each coffee. Utilizing Partial Least Square Regression, the sensory data were mapped with the emotion data to determine how the sensory characteristics of coffees correlated with elicited emotion.

Certain coffee aroma and flavor aspects appear to be linked to specific emotions. Sensory characteristics of dark roast coffee (*roast, burnt, bitter, and body/mouthfeel*) were correlated with positive-high energy feelings including *jump start, satisfied, boosted, and special*. Cocoa aroma appeared to elevate *good* and *pleasant* emotions.

Tobacco (flavor/aroma) elicited feelings of *jolted* and *content*. Coffee users may initially be surprised (i.e., *jolted*) by the unfamiliar *tobacco* attribute, which in this study was only present in one coffee sample. However, they appeared to enjoy the experience (i.e. *content*), indicating that the tobacco flavor was a pleasant addition. *Bitter* flavor aroused *energetic* and *productive* feelings. On the contrary, *citrus, hay-like, and acidity* appeared to elicit the feeling of *off-balance*. Consumers may be unfamiliar with these sensory characteristics and find them inappropriate for coffee, hence the negative emotional response.

Conclusion

In conclusion, coffee drinking is a highly emotional experience. Coffee drinkers have varying preferences for coffee and appear to seek different emotional experiences from the

beverage. . Some indicated liking coffees that elicited positive low-energy feelings (i.e. *calm*) while others liked coffees with positive high-energy emotions (i.e. *active*). Another group of consumers appeared to appreciate coffee for the focused mental state it provided (e.g., *in-control, motivated, productive, clear-minded*). This group of emotions encompassing focused mental state was identified by this research and were not present in previous scales developed for the general food consumption. Additionally, certain coffee aroma and flavor aspects appear to be linked to specific emotions, including flavors of dark roast coffee, cocoa, tobacco, bitter, citrus, hay-like, and acidity.

Understanding emotions that occur during the coffee drinking experience and how they may correlate to sensory aspects of coffee and consumption motivation can be used to explain consumer acceptance and consumption behaviors. The 44-term consumer-generated lexicon can be used to gain a more thorough understanding of the coffee drinking experience. Future research may focus on understanding differences between various demographic and cultural profiles and identifying the influence of these factors on perceptions and emotional experiences related to coffee drinking.

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CHAPTER 4

Literature Review

Choosing Coffee

Why do so many people drink coffee? Most consumers experience a moment in which they overcome the initial bitterness of coffee and begin to like the flavor (Cines & Rozin, 1982). Almost all (87%) of coffee drinkers rate their liking of coffee as like extremely or like very much (*National Coffee Drinking Trends 2015*, 2015). The number of cups of coffee that consumers drink per day is predicted by their liking for hot coffee flavor, their desire for “morning effects” such as helping to wake up and relax, and caffeine addiction (Cines & Rozin, 1982).

Caffeine likely plays a large role in the liking and use of coffee (Nehlig, 1999). Caffeine has well-documented effects on the mind and body and many studies have examined the psychological and physiological effects of caffeine. Christopher, Sutherland, and Smith (2005) found that caffeine improves mood and performance on a number of cognitive measures in non-withdrawn consumers. Participants demonstrated increased alertness and improved sustained attention and psychomotor performance. This improved alertness and functionality may be a strong motivator for caffeine consumption.

As a stimulant caffeine has clinically demonstrated psychoactive effects and also provides relief of withdrawal symptoms associated with abstinence in habitual users. Caffeine dependency has been shown to affect taste perception through classic conditioning—people have been shown to report an enhanced liking for products containing caffeine as they associate the orosensory clues with the psychopharmacological consequences of caffeine ingestion (Rogers,

1995). The taste, flavor, and aroma of caffeine can become correlated with the pleasant benefits and alleviation of withdrawal symptoms. Consumers served novel-flavored drinks with added caffeine perceived these beverages to be more pleasant over several tastings than the novel-flavored placebo (Yeomans, Durlach, & Tinley, 2005). With the exception of those who drink exclusively decaffeinated coffee, caffeine is inextricably linked to coffee consumption. It is likely that caffeine plays a role in the appreciation of coffee flavor and in the motivations to drink coffee for many consumers.

Asioli et al. (2014) found that consumers' main motivations for iced coffee consumption are enjoyment and relaxation, as well as energy and caffeine intake. Drivers included 'I want to indulge myself' followed by 'It will keep me awake' and 'I need new energy.' Labbe et al. (2015) observed that coffee drinking is motivated by two distinct factors-- sensory enjoyment (hedonic motivation) or by stimulation (functional motivation). Liking and use of coffee can also be influenced by personal associations. Coffee is often consumed in an enjoyable situation such as a pleasant morning cup, a break at work, or a social opportunity with others. Additionally, flavor compounds released during the roasting process create a desirable sensory experience irrespective of caffeine.

Motivations for coffee consumption may be different when discussing general coffee drinking habits as opposed to discussing motivations to drink coffee *that day*. When asking about motivations for foods consumed 24 hours earlier, Phan Thuy (2015) found that coffee was consumed mainly as a habit as opposed to beverages such as soda and alcohol that were consumed due to pleasure. In conclusion there are a multitude of reasons for coffee consumption, including flavor, caffeine, habit, and personal associations.

Factors Influencing Food Choice

There is an almost overwhelming array of food products available for consumers to choose from. How do people make decisions about what foods to purchase and consume? When asked about specific food choices made that day, *liking* was the strongest motivation that drove people's food choice (Phan Thuy, 2015). Additional motivations for main meals were *hunger, habits, price, and convenience*. In general, food choice is a multidimensional process that relates strongly to people's lived experiences, involving a multitude of factors such as familiarity, convenience, sensory aspects, satiation and money left at the end of the month (Antin & Hunt, 2012). The importance and relevance of these factors varies by demographic and lifestyle, although taste and sensory are generally considered to be the most important (Scheibehenne, Miesler, & Todd, 2007). Socially and culturally constructed beliefs and values play a huge role in how people make food choice decisions. These social and cultural beliefs can imbue food with meaning, which is communicated through consumption (Douglas, 2003).

Antin and Hunt (2012) interviewed 20 African American women from the San Francisco East Bay area to better understand factors shaping their food choice. Many reported choosing certain foods based on the food's familiarity to them, often a result of a food's positive association with family and friends. Several participants noted that familiarity made it hard to escape from "bad food" traditions they grew up with. These women chose foods that provided them with an enjoyable experience, describing feeling satisfaction, happiness, and comfort from eating "tasty" foods. Convenience, satiation, and price were also important factors influencing food choice. Habit also plays an important role in food choice. Köster (2009) found that habitual behaviors, such as eating unhealthy foods, were highly resistant to change and were almost

inaccessible to cognitive arguments. Only by demonstrating tasty alternatives to unhealthy goods is lasting change able to occur.

Food choice, like all decision-making, is based on both cognitive and emotional dimensions. Neurological patients no longer capable of processing “somatic” or emotional information experience difficulties in the decision making process, demonstrating that choices are heavily influenced by unconscious emotional response (Bechara, 2004). Emotions play an important role in consumer choice, particularly when processing resources are limited (Shiv B & Fedorikhin A, 1999). Information on food-specific emotions adds predictive power and strength to a model predicting for consumer choice as compared to using only liking information (Dalenberg et al., 2014).

The narrative conveyed by a brand or product can also be a powerful influence in food choice. Katia Laura and Sarah (2014) found that consumers are most likely to choose products that they personally identify with, reacting positively when products are described with narratives that elicit feelings of passion and determination, reflecting their own “underdog personalities”. Consumption is an act that encapsulates a process of projecting a consumers’ own personality onto the product.

Identity and Food Choice

Food choice is a multi-dimensional process which involves one’s personal identity (Antin & Hunt, 2012). Devine, Sobal, Bisogni, and Connors (1999) found that African American respondents would communicate ethnic identities through food presented at family gatherings and holidays. Choosing specific foods like culturally appropriate foods can project an identity to others. A desire to convey a particular identity through food choice may explain why certain factors of food choice are more salient to certain consumers.

Bourdieu (1979) explains how eating sustains group identity. In all cultures what's designated as food is "factually and symbolically expressive of both belief systems and the social distinctions that are underwritten by them". Put more simply, you are what you eat—a cultural identification of what is food leads to group identification with food.

It is only with the vast number of options brought on by recent economic and technological changes that we see a detachment from traditionally preserved substances and practices, which were previously a generally intelligible social narrative (Crouch & Neill, 2000). Globalization and transportation have caused foodways to become less distinct, yet they are still crucial for group and individual identities. Economic and technological changes have provided us with a wider range of choices, which allow for almost innumerable options for expressing one's identity through food. These options challenge consumers to balance their exploration and innovation with a "need for safety and security", facilitating the development of self-imposed principles to guide their selection (Crouch & Neill, 2000). Accounting for the added input of advertising, mass-media, and branding on the "foodscape" it must be acknowledged that "hunting, foraging, and gathering by the post-modern person are far from mundane." Choosing a food from the vast array of available options is a self-defining action.

Crouch and Neill (2000) investigated the relationship between eating practices and individual identity. Developing one's identity is a continual process which requires acquisition and then consistent validation. Eating can be an identity-acquisition and validation strategy that can be employed both expressively (for impression-management purposes) and reflexively for self-reassurance. Food can thus be a "communicative code of self-realization." Eating practices become identity markers as one makes choices according to wants of the self that are more general than appetite (Crouch & Neill, 2000). Consumers make conclusions about consumption

that both reflect and enhance their own identity. Bisogni, Connors, Devine, and Sobal (2002) explained that identity formation is a reflexive process as the identities of consumers both influence choices and result from choices.

In order to make decisions consumers must balance information about food (novelty, fashion, fads, health) with their own biography, taste, and aesthetic considerations (Crouch & Neill, 2000). They must continually negotiate constraints—gustatory, nutritional, tenets of established cultural/family traditions, and rational guidelines versus self-gratifying impulses. This creates a tension of choice which, once resolved, guides a narrative of understanding which will subsequently feed into future actions.

Over time these individual choices become a pattern of eating. One's self identity or perception of self has an important influence on behavior, according to the theory of planned behavior and self-identity. Biddle, Bank, and Slavings (1987) found that students ratings of themselves as "career-minded" contributed to actions and intentions independent of their actual preferences. Additionally, repeating behaviors over time will influence a person's self-concept, which over time becomes internalized (Charng, Piliavin, & Callero, 1988). Each time a behavior is repeated, for example giving blood, meaning is conveyed that eventually may override initial perceptions about the behavior. Over times, this creates an identity.

Sparks and Shepherd (1992) investigated the effects of several factors in participants' intention to consume organic vegetables during the following week. Consumers were asked to answer questions to gauge the influence of their beliefs, attitude, subjective norms of their environment, and perceived control about consuming fresh vegetables and their identification with green consumerism and health-conscious consumerism. A model was created to predict for consumers intention to consume organic vegetables during the following week. Consumers'

attitudes, the subjective norm, their perceived control, their self-identity, and their past consumption were all important in predicting behavioral intention (Sparks & Shepherd, 1992). Self-identity was independent from past consumption in the regression equation, demonstrating that both habit and self-identity play a separate and critical role in determining food choice behavior.

We can see that identities arise through a complicated interaction between the self and the environment. Bisogni et al. (2002) did a series of interviews to understand consumer identities in relation with food and found that identity formation is a reflexive process--the identities of consumers both influence food choices and result from food choices as the person compares themselves with reference points. Many factors come together to influence food-related identity and food choice, including the ideals, identities, and roles related to class, religion, family, and ethnicity (Devine et al., 1999).

Determinants of Coffee Quality

Coffee is a drink prepared from brewing the roasted, ground seeds of plants from the *Coffea* genus. Red coffee cherries grow on a bush up to 7 feet tall and must be processed to remove the fruit pulp, parchment layer, and silver skin (Rendón, de Jesus Garcia Salva, & Bragagnolo, 2014). These cleaned green coffee beans, once roasted, gain the characteristic flavor and color associated with coffee.

There are many different factors influencing the quality of coffee beans, including varieties grown, growing location and conditions, and processing practices. While there have been over 120 different species of *Coffea* identified, *Coffea arabica* and *Coffea canephora*, or arabica coffee and robusta coffee, are the most economically relevant (Hoffman, 2014). Arabica and Robusta coffees are different in many ways, including their ideal growing climates, physical

aspects, chemical composition, and characteristics of the brew made with the ground roasted seeds (Iziar A. Ludwig, 2014). Arabica coffee is generally considered to be of superior quality and has higher commercial value (Garrett, Rezende, & Ifa, 2013). Robusta, the lower-quality of the two, is said to have lower acidity and heavier body, and mouthfeel, with some describing the flavor as a woody, burnt-rubber quality in the cup (Hoffman, 2014).

Growing conditions play a large role in determining the final sensory properties of the coffee. High altitudes and annual rainfall of under 1500 mm have been shown to have a favorable influence on sensory qualities of coffee beans (Decazy et al., 2003). Blind tasting experiments also showed that shade grown coffee improves visual quality of green and roasted coffee as well as acidity and body of the brew (Muschler, 2001).

The coffee bean roasting process can have a large impact on coffee quality (Kučera, Papoušek, Kurka, Barták, & Bednář, 2016). Sensory characteristics are drastically affected by different roasting methods—modifying roasting conditions for robusta coffee causes a 2 point shifting of overall acceptability in a 10-point hedonic scale (Nebesny & Budryn, 2006). Additionally, water temperature, grind size, and time spent brewing all influence the final coffee experience, which leads some to claim that brewing is “half art, half chemistry” (Sinnott, 2010).

The term “quality” can be difficult to pinpoint. The official definition provided by the International Organization for Standardization (ISO) states that quality is “the extent to which a group of intrinsic features (physical, sensorial, behavioral, temporal, ergonomic, functional, etc.) satisfies the requirements, where requirement means need or expectation which may be explicit, generally explicit, or binding (ISO, 2000).

Coffee quality can be evaluated on a number of aspects, including optimal moisture content, physical quality of the beans, the lack of contaminants such as mold, and organoleptic

properties of the final brew (Leroy et al., 2006). Generally the quality of coffee is determined through evaluation of sensory properties, as trained coffee “cuppers” evaluate and apply standardized criteria to the aroma, flavor, and body of a given sample (Lingle, 2001).

The sensory experience of coffee plays a huge role in evaluating price and value. An evaluation of price determinants in top-quality e-auctioned specialty coffees reveals that final market prices are primarily due to sensory attributes or the value of the aroma, flavor, and body of the coffee in addition to reputation variables including third-party quality ranking, coffee variety, country of origin, and available quantity (Donnet, Weatherspoon, & Hoehn, 2008). A follow-up study found that the highest prices came from the top-ranked coffees in each country and North American buyers are more responsive to sensory quality than buyers in Asian and European markets (Wilson & Wilson, 2014).

Coffee is generally divided into two categories: commodity coffee and specialty coffee. Commodity coffee is just generic “coffee”, with a focus on price-point and minimal consideration to quality or how it was grown or processed while specialty coffee is grown, processed, shipped, roasted, sold, brewed, with taste as the primary focus (Hoffman, 2014). Specialty coffee is higher-quality and more exclusive than the relatively homogenous and undifferentiated industrial blends (Ponte, 2002). While specialty coffee once referred to a specific market niche that focused on quality, it is now broadly used to describes any coffee set apart from the norm (Wilson & Wilson, 2014).

History of Coffee in the U.S.

The Industrial Revolution in the U.S. moved coffee production from small, regional, independent operators into “mega-roasters” with giant roasting facilities, industrial grinders, and vacuum-sealed coffee cans to meet the coffee needs of the masses (Lyons, 2005). By the end of

World War II, coffee had become a standardized product. Most coffees were sold in cans in the supermarket and the choices were limited to brand and grind, with light roasts that didn't deliver a lot of flavor (Roseberry, 1996). At this time, coffee was primarily viewed as a "caffeine-delivery system," with generic brew prepared in giant percolators and community coffee pots (Manzo, 2010).

Coffee freshness and quality was not a high priority until about the 1970s, at which point consumers' focus shifted from convenience back to taste (Sinnott, 2010). This triggered the rise of specialty coffee and the growth of social coffeehouses. The onset of coffeehouse chains such as Starbucks and Peet's offered authentic, high-quality, niche specialty coffee products from exotic locations. This created lucrative distinctions between specialty coffee and homogenized, mass-produced coffee products (Lyons, 2005). Consumers were provided with an opportunity to practice "symbolic distinction" and demonstrate their discerning taste through consumption of these new, superior coffee products.

Over the past few decades, more and more consumers have become interested in coffee flavor, variety, and quality. In March 2008, Pulitzer Prize winning food critic Jonathan Gold of the *LA Weekly* described America's changing coffee landscape in terms of three "waves":

"The first wave of American coffee culture was probably the 19th-century surge that put Folgers on every table, and the second was the proliferation, starting in the 1960s at Peet's and moving smartly through the Starbucks grande decaf latte, of espresso drinks and regionally labeled coffee. We are now in the third wave of coffee connoisseurship, where beans are sourced from farms instead of countries, roasting is about bringing out rather than incinerating the unique characteristics of each bean, and the flavor is clean and hard and pure" (Gold, 2008).

The latest coffee movement is what a subculture of coffee connoisseurs now refer to as the “third wave” coffee phenomenon, which began around 2002. This movement views high-quality coffee as a complex flavorful beverage instead of a commodity, and consists of

“small-batch artisanal coffee roasters and independent or small-chain coffeehouses that are themselves part of a supply chain including a collection of field-to-coop actors starting with direct-trade growers with whom the coffee brokers, roasters, and café-owners are understood to have relationships” (Manzo 2010).

More and more consumers are beginning to appreciate coffee’s natural variation as influenced by growing region, processing, and roast. This trend can also be seen in other plant-based products such as wine, tea, and chocolate (Roseberry, 1996). The third-wave coffee movement focuses on showcasing the unique qualities of the beans themselves with improvements at all stages of production (Manzo, 2010). In short, the global coffee chain has gone through a “latte revolution”, in which coffee consumers can choose from hundreds of varieties of coffee, with a wide range of different price points, roasts, flavors, and qualities (Ponte, 2002).

Coffee connoisseurs

The second and third wave of coffee created a new kind of consumer—self-proclaimed “coffee geeks”, or coffee connoisseurs. These consumers cultivate and display “taste” and “discrimination” as they seek out good-quality coffee (Roseberry, 1996). An ethnomethodological study on coffee connoisseurs revealed one key finding for those identifying as passionate coffee connoisseurs—taste is not ascribed; it is acquired (Manzo, 2010).

Developing the palate to appreciate and differentiate different coffees requires investment and many interviewees revealed that their developed preference for quality coffee was much opposed

to their upbringing. One expressed pride for bringing his parents around to understand good quality coffee.

Sneijder and te Molder (2005) observed participants evaluating taste in online discussions of food pleasure and found that contributors claim expertise by presenting assessments as more than an opinion. They actively “negotiate their relative socio-epistemic rights to assess taste” to claim membership and construct their identities as gourmets. Consumers actively assert their identities in this situation to claim membership amongst others with refined tastes.

Membership in a gourmet community must be achieved. Manzo (2010) notes that self-proclaimed coffee geeks invest education, money, time, and social contacts to become a member of and maintain status in a third wave coffee community. For coffee aficionados, “taste” is the outcome of a great deal of effort and may even be described as burdensome. Manzo’s coffee connoisseurs describe their refusal or unwillingness to participate in mainstream coffee rituals as having social consequences such as appearing pretentious and inciting fear of judgement amongst friends. These developed preferences may make them difficult to be around but also confer in-group membership (Manzo 2010).

Why have “coffee geeks” chosen to invest so much time and money into a beverage that many others drink solely for the caffeine content? Many of them described a “wake-up” moment in which they were shown good coffee for the first time (Manzo, 2010). As noted earlier, one’s environment and surrounding influences play a large role in identity. Social class may be especially significant. Any conversation about self-proclaimed connoisseurship is obliged to touch upon the work of Pierre Bourdieu, author of *Distinction: A Social Critique of the Judgement of Taste* (1984). Bourdieu postulated that what appear to be matters of individual violation or self-selected taste are in fact inextricably connected with and based on social-structural products.

Simply put, our choices reflect our social class and our social class reflects our choices. For example, an interest in classical music from a person of low-class is often revealed to be something more accessible and low-brow, such as “classical muzak” (Manzo 2010). What we believe to be individual choice and preference is actually a reflection of our class status, which is continually reproduced as an unintended consequence of social interaction.

While social class has become more ambiguous in our post-industrial society, it is still highly relevant as a cultural construct that is shaped and maintained partly through cultural consumption. For example, choosing a coffee establishment to patronize reflects a self-selected distinction. As specialty coffee companies such as Starbucks and Peet’s came into the public eye, groups of middle-class consumers were suddenly able to display their discriminating taste through consuming a distinct, “authentic” kind of coffee (Roseberry 1996). The rise of these specialty coffee companies signified a shift in which specialty coffee companies began to focus on their brand instead of the product itself. They focused less on promoting qualities of coffee and more about the experiences around consumption. This allowed consumers to create identities around these brands and experience and embody a feeling of elite coffee status (Bookman, 2013). While coffee connoisseurs are clearly interested in coffee for the flavor and sensory properties, some of them could also be subconsciously driven to show their elitism and social class membership by demonstrating a refined and discriminatory sense of taste.

When Amaldoss and Jain (2005) performed a competitive analysis of the influence of social effects in the pricing of consumer goods they noted two competing needs among consumers—a need for uniqueness and a need for conformity. The group of consumers known as “conformists” desire conformity, and most often value a product more as the number of people who buy the product increases. On the other hand, the consumer category of “snobs” desire

uniqueness, experiencing a depreciation in value for a product as the number of people who buy the product increases. Snobs may be more inclined to buy a product as the price rises, signifying its exclusivity. Are coffee connoisseurs inclined to exhibit snob-like behavior, prizing coffee more when it is more rare and difficult to obtain?

Elliot et al explains that the difference between a snob and a true connoisseur is knowledge. The origin of the word connoisseur comes from “to know”, whereas the root of snob is *sine nobilitas*, translating to “without nobility”. Experts have highly organized and specific knowledge that leads to better performance at tasks related to their domain. While everyone can pick up flavors and aromas, experts are able to identify and name them. Snobs would likely not have the depth of knowledge and would be solely motivated by the appearance of exclusivity and elitism.

Novices to a product category such as coffee will engage with products in a very different way than experts. Experts and novices have the same olfactory sensitivity, but experts are slightly better at discriminating than novices for familiar stimuli (Langlois et al 2011). Additionally, consumers without experience won't have knowledge of the range of possible experiences, the variability of those experiences, and how to evaluate and appreciate these experiences (Clarkson, Janiszewski, & Cinelli, 2013). Novel consumption experiences build experiential consumption knowledge, which can improve the appreciation of future consumption experiences. Knowing this, experts often seek a focused set of experiences to deepen their consumption knowledge in a product category, as this will allow them to better enjoy future consumption experiences. Therefore coffee connoisseurs will likely often seek out new coffee experiences and knowledge for the purpose of appreciating it more.

Consumers interest in and preference for high-quality coffee is growing, representing a growing body of industry. The National Coffee Association's National Coffee Drinking Trends (NCDT) market research study showed a 4% increase in daily consumption of gourmet coffee beverages of American adults in 2014—up from 31% in 2013. Conversely, non-gourmet coffee drinking dropped from 39% to 35%. An investigation into demographics reveals that young working adults lead the pack as the highest consumers of gourmet coffee beverages. 42% of consumers ages 25-39 consume them daily, as compared to one-third of 18-24 and 40-59 year olds, and one-quarter of those 60+. (NCA, 2014)

We can tell that consumer interest in specialty coffees is growing, especially amongst the younger population, which means that consumers are desiring more quality and flavor, meaning that coffee connoisseurship may also be on the rise. This trend in high-quality coffee comes from a growing population of consumers that are very interested in their food, including artisanal cuisine such as bread, cheese, chocolate, wine, and coffee. These consumers often appreciate foods with connotations of authenticity, especially those produced according to historical traditions, or foods linked to a specific geographic place or ethno-cultural group (Cappeliez & Johnston, 2013). There is a growing group of coffee drinkers that want authentic single-origin coffee, roasted, ground, and brewed to perfection. Many of these coffee drinkers may self-identify as connoisseurs.

The very aspect of self-identity implies that the consumer is laying claim to a group membership. Connoisseurs are generally assumed to possess two qualities—they are very interested in the sensory aspects of certain products, and they have the knowledge and ability to name and discern between products. However, inevitably not all self-identified connoisseurs will have the same ability to distinguish flavors. They may be motivated by other factors such as a

sense of elitism or a desire to be perceived as within a certain social class. Learning about the traits embodied by self-identified connoisseurs will be useful to understand more about the psychology of a growing population of consumers. Additionally, identifying the motivations of a consumer target of interest allows us to hone in on these consumers and understand their responses in relation to this motivation for use in marketing, industry, and future research (Labbe et al., 2015).

Coffee Involvement

Another way to view different kinds of coffee consumers, in addition to connoisseurship, is “involvement.” The level of importance of food in general in a person’s life can be described as “food involvement”, which relates to the extent to which people enjoy thinking about food, talking about food, and engaging in food-related activities such as food acquisition, preparation, cooking, eating, and disposal. Bell and Marshall (2003) developed the Food Involvement Scale (FIS), a 12-point questionnaire, measure the continuum of individuals’ level of involvement with food. Individuals who are more highly food-involved and score higher on the FIS are associated with a greater ability to discriminate between foods varying in specific sensory characteristics. Additionally, those who are more “involved” in food are more likely to exhibit greater differences in hedonic ratings (Bell & Marshall, 2003). This concept may be able to be extrapolated to mean that individuals that care more about coffee or are more involved in the coffee world will have a wider variance of liking and discrimination between different coffees

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CHAPTER 5

Materials and Methods

This project was conducted in two parts—qualitative focus groups and quantitative consumer testing.

Focus groups

Background on focus group research

Focus groups are a type of qualitative research methodology that can be a powerful tool in explorative, hypothesis-gathering research. Focus groups allow for collection of open-ended data that controlled, experimental research cannot. Data can be elucidated from focus groups to inform future quantitative research projects. Focus-group interviewing has been established as a valuable tool in sensory and consumer research when aspects of the basic phenomenon of interest is not well understood (Lawless & Heymann, 2010).

Focus groups consist of a moderator guiding a discussion between a small group of involved participants to gather more information on their thoughts, feelings, and experiences with a particular subject matter. Focus groups are designed to obtain emergent, synergistic discussions between people who have specific knowledge of a topic (Jervis & Drake, 2014). By nature, qualitative research does not seek to show statistical associations or cause and effect relationships. Instead the emphasis is on describing or illuminating social phenomena and human experience. In this case, focus groups were conducted to determine coffee consumers'

preferences and habits, what motivations they had for coffee consumption, and what factors may have influenced their coffee-related identities.

Focus group protocol

Recruitment took place using a pre-existing consumer database of about 500 people living in or around Griffin, GA as well as fliers posted at local coffee shops. Participants were called and led through a pre-established screener to see if they qualified for the focus groups. The inclusion criteria was that participants must be 18 years or older and consume coffee three or more times per week. Recruited participants were divided into one of two types of focus group based on the answer to the question “Do you identify as a coffee enthusiast, aficionado, or connoisseur?” In total, six focus groups of six to ten people each were conducted—three “non-connoisseur” and three “connoisseur” groups. Each focus group lasted for one hour and panelists were compensated with \$20 in cash and free coffee throughout the session. Panelists were audio-recorded with their written consent. A moderator facilitated the focus groups and was supported by an assistant that took notes and expedited the sign-in and payment process.

The focus groups began with an ice-breaker question asking participants to introduce themselves by their first name and share what is their favorite coffee and why do they like it. Afterwards panelists were led through a series of questions to ascertain their coffee drinking routine and habits, their coffee drinking choices, their thoughts and feelings about coffee, and their coffee-related identity. The full list of questions can be seen in the Focus Groups Moderator’s Guide in Appendix A. Panelists were encouraged to talk out of order and to build off each other’s feedback to gain a depth of information about their coffee consumption habits and thoughts. Side talking was discouraged. Panelists were all given name tents which were

used to call on them directly if there wasn't a large response to a particular question or to clarify a point.

Repetition of focus groups helped to ensure that the breadth of responses was represented and achieved data saturation. The audio-recording was transcribed within 2 days of the focus group while memories were still fresh. Names were changed upon transcription and the original recordings were destroyed to ensure participant anonymity. Data analysis took place by printing out transcripts and highlighting words or phrases that stood out as important and/or compelling. Comments were written above each highlight describing the phrase, for example "addiction", "meaningful routine", and "anti-Starbucks." Participant thoughts that correlated to a similar topic were highlighted and grouped together to identify overarching themes and ideas.

Consumer Tests

Recruitment

Consumer tests were conducted to find out more about consumers' emotions in response to different qualities of coffee. Recruitment took place using a pre-existing consumer database of about 500 people living in or around Griffin, GA as well as a post on a local community Facebook group and fliers posted at local coffee shops. These advertisements provided a link to an online screener to verify participants' qualification for the study. The online screener utilized Qualtrics software and was only able to be taken once per computer. The screener questions used can be found in Appendix B. A verbal version of the screener was utilized for potential participants that did not have email addresses or had encountered technical difficulties. The inclusion criteria was that participants must be 18 years or older and drink coffee at least once a week. There were several trick questions designed to end the survey early in order to "weed out" potential participants that may be looking to "game the system" to get money. The survey was

designed as a “beverage study” and participants were asked to indicate which of the following beverages they had consumed, some of which were fictitious and resulted in expulsion from the survey. The survey then asked several questions about tea to lead participants to believe it was a tea study. After three tea questions, participants were asked “which would you prefer to drink in the morning, coffee or tea?” Those who indicated tea were expelled from the survey, and those who indicated coffee were permitted to continue with the screening and had an option for them to enter their contact information at the last window. Overall 252 people began the survey and 209 took the survey to completion. Out of those people, only 98 made it to the end of the survey and were able to enter their contact information. Twenty two people were recruited from verbal screeners to achieve 120 recruited participants. Sixteen did not show up, leaving a total of 104 participants who were compensated with \$20 for their time.

Sample and Serving Protocol

Participants who qualified were contacted by phone to give them more information about the study and invite them to choose from one of twelve sessions on Tuesday, Wednesday, and Thursday at 10am, 12pm, 3:30pm, and 5:30pm. The phone script can be found in Appendix C. Each session had space for ten participants. Participants were asked how they normally take their coffee to determine what cream and sugar should be added to their coffee during the consumer test. This ensured that they would receive the kind of coffee they usually consumed (Bhumiratana et al., 2014). Each coffee they received during the test was pre-doctored with their preferred coffee add-ins to avoid inconvenience to participants and possible discrepancies if they chose to not add the same amount each time. Twenty two participants asked for their coffee black. Upwards of 40 participants requested French vanilla creamer, which was substituted with unflavored creamer so that the flavor of the coffee could be detected. Participants asked for and

received a range of “whiteners”, including creamer, half&half, whole milk, and heavy cream. The creamer and half&half were purchased in pre-measured ~10g containers and the whole milk and heavy cream were measured into 10g samples placed in small 1 oz cups to emulate the size and convenience of the creamer and half&half. Sweeteners included sugar packets, sweet&low, Equal, and truvia. Half an hour prior to each session the requested quantity of cream and sugar was placed into the bottom of each cup so that hot coffee could be poured on top and stirred directly prior to serving. Requested add-ins ranged from a single packet of truvia to six creamers and six sugars. Participants were asked to describe the quantity of coffee condiments they usually consumed, and were told that it would be served in an 8oz cup or a “pretty small cup of coffee.”

Four coffees samples were served during the consumer test. A dummy sample was used in the first position for all participants to accommodate for the well-documented first-order effect in emotions research (Dorado, Pérez-Hugalde, Picard, & Chaya, 2016). Hence, three types of coffees were chosen to represent a wide range of quality and one (Dunkin Donuts) was repeated as the first sample for all participants. Data from this first sample was discarded as it is known that emotional responses measurements will be biased by the first position effect. The three coffees chosen were Folgers Classic Roast ground (Orrville, OH), Dunkin Donuts ground (Canton, MA), and Costa Rica Alberto Guardia Bourbon Honey, specialty coffee from a roaster called Temple Coffee (Sacramento, CA). These coffees were chosen for their ratings on coffeereview.com which listed coffee rating scores on a scale of 1-100. Folgers Classic Roast received a score of 67, Dunkin Donuts received a score of 84, and Temple Coffee received a score of 96. Temple coffee was evaluated two months prior in November 2015 while both Folgers and Dunkin Donuts were evaluated in 2012.

After the first dummy sample, the order of serving samples two through four was randomized per participant. Coffees were brewed using 12 oz Mr. Coffee coffeepots. Two pots of coffee were made of each coffee and mixed equally into two labeled double-walled steel carafes to retain heat and reduce within-sample variation. The brewing ratio was determined to be 106 grams of coffee per 1.9 L of coffee by taking the exact middle of the Specialty Coffee Association of America's recommendations for brewing coffee to be rated for the golden cup award,

“In order to qualify for the Golden Cup Award, the coffee brewing formula must fall between 3.25 and 4.25 ounces in weight (92 grams and 120 grams, respectively) of coffee per 64 fluid ounces of water (1.9 L), resulting in a coffee strength between 1.15% to 1.35% dissolved coffee flavoring material.”

Hence, the ratio of 72.41g coffee per 1.3 kg of water was used for all three coffees. Temple Coffee was freshly ground each morning to the smallest grind size the grinder allowed in an attempt to emulate the powder-fine ground coffee of Folgers and Dunkin Donuts. Using the same ratio by weight for all three coffees ensured perfect consistency which is highly recommended in sensory science studies, but may have resulted in the Temple Coffee being at a lower concentration than might be desirable to showcase all the flavors. It is likely that Temple Coffee would have been liked more if it had been brewed at a higher strength instead of being brewed more weakly in an attempt to match the ground coffee ratio. Coffee was poured into 8 oz paper cups with plastic lids (Dixie PerfecTouch, Atlanta, GA) about 5 minutes before serving and stirred to ensure that all add-ins were fully distributed.

Data Collection

All data was recorded on paper ballots. Panelists received one questionnaire for each of four cups of coffee and a final questionnaire at the end asking about their coffee habits, coffee identity, and some basic demographic information. The coffee ballot and final questionnaire can

be found in Appendix E and F. Each coffee ballot asked participants to indicate how much they liked the coffee on a 9 point hedonic scale, how familiar was the coffee on a scale of 1-7, and their willingness to buy the coffee on a scale of 1-5. Participants were also asked to rate their emotions during consumption of the coffee using a pre-existing coffee emotional lexicon consisting of 44 terms (Bhumiratana et al., 2014). They were given a scale of 0 (not at all) to 4 (extremely) and asked to circle the degree of intensity they were experiencing each emotion. The order of appearance of the 44 words was randomized for each of the ten panelists at each session. Before rating their emotions participants were asked to visualize the last time they drank coffee, and continue to think about this occasion throughout the session. This is known as “priming” and was used to put them in the correct mindset and context to appropriately evaluate coffee emotions. Priming has been shown to have a significant impact in sample differentiation (King, Ramon, and Weingand 2015).

Data Analysis

Data analysis took place using SAS, XLSTAT, and JMP. All 104 consumers were subjected to cluster analysis based on liking scores. The CLUSTER procedure using the Wards clustering method (minimum variance method) was used (SAS® version 9.2; SAS Institute; Cary, NC, USA) for this purpose. Hierarchical dendrogram and cubic clustering criterion were plotted to help decide the number of consumer clusters. One way analysis of variance was performed for each cluster (Appendix F). Principal components analysis was performed for each coffee within each cluster with emotions and liking. Multiple correspondence analysis was used to observe clusters with coffee involvement concepts (Appendix G). Finally, principal components analysis was used with participant identities for each cluster.

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CHAPTER 6

Focus Group Results and Discussion

Results

A “good cup of coffee”

Many of the participants expressed strong preference for the characteristics of their coffee. Strong coffee was a reoccurring theme, with many saying that “good, strong bold coffee” was a necessity. While a few people claimed to enjoy weak coffee, the majority found lack of strength to be a defect. Some were clearly appalled by weak coffee consumers, questioning why they would drink “colored water.” When asked what qualities were important to her in a cup of coffee, Natalie reports:

Natalie: Strength and depth. I dunno. I broke up with a guy because his coffee was too weak. I felt like it was letting me into a personality or character flaw.

Natalie takes her coffee strength very seriously—seriously enough to end a relationship over. Some participants expressed preferences for *very* strong coffee, saying they “want the spoon to have something to stand up in.” One participant, Danielle, mentioned that her coworkers always know when she makes the coffee because she adds close to twice the recommend quantity of grounds. When they complain, Danielle explains she is just trying to keep everybody awake.

Consumers varied widely in their coffee preferences. Descriptors of “good coffee” frequently included fresh, bold, and strong. Bitter was seen as either a positive or negative attribute. Participants with experience and knowledge with high quality coffee used vocabulary like viscosity, mouthfeel, oiliness, and body. About half the focus participants prefer dark

roasted coffee. There is a wide range in how participants choose to take their coffee, from “black and bitter” to “down from 20 tablespoons of creamer”. Some disdain the idea of flavored creamers or flavored coffee while others rave about them. Two coffee-drinkers said they enjoy the flavor of chicory in their coffee, while the rest do not.

When asked if the quality of coffee was important to them, the vast majority of participants answered yes. The only participants that did not find coffee quality to be important were those that did not consume coffee frequently. As Carrie noted:

Carrie: Well if I'm gonna make it and drink it I want it to taste good. And if I'm gonna drink it I want to enjoy it. Some of the cheaper brands don't have the same flavor as those name brands.

Carrie is loyal to Maxwell House Columbian and will go to a different store if they are out of it. She explains that this coffee is “one of the better ones you can get”. There was wide a range of what consumers listed as good quality coffee, from Lavazza to McDonalds to Folgers. A similar range was found for bad quality coffee, from Starbucks to Waffle House to gas stations. There was noticeable overlap in what some coffee drinkers named as good or even their “favorite” and others found to be bad or awful, including Community coffee, JPG, Folgers, Maxwell House, and instant coffee.

Caffeine and Flavor

The majority of coffee drinkers feel that their appreciation of coffee comes from both the flavor of coffee and the functional benefits of caffeine. Since he drinks it close to the middle of the morning Derek feels that he likes both the caffeine and taste of coffee. Some coffee drinkers feel that their preference for coffee is exclusively due to caffeine, like Juliana:

Juliana: I'm looking at retiring not too far off in the future and I'm really wondering if I want to carry that into my retirement. I'm not sure I want to keep the habit of getting up and having a cup of coffee. I see myself as having iced tea more—getting up and having an iced tea in the morning. So I really don't think it's the coffee. I think it's probably more the caffeine.

Caffeine is critical for many coffee consumers. Addiction surfaced as a theme multiple times, as participants expressed intense need or craving for coffee. Dan says that his wife will send him to the store at midnight if there is no coffee in the house because she has to have it the moment she wakes up. Joanna described a distressing day in which she had to fast for a physical and couldn't drink coffee in the morning. In response, Joanna put coffee grounds in a paper towel and sucked on them on the drive to try to get her fix. When asked for an extra shot in her Starbucks drink and an employee mentioned that there were already three shots in the drink she commanded, “Just add it! I'm paying for it!”

Another participant, Katrina, could do without coffee but not without caffeine:

Katrina: I cut back a lot. I used to have an IV of either coffee, coke, pepsi, mountain dew.

Now I drink one cup of coke and 1 cup of coffee day. Coffee isn't that important. I won't go to store to get it. But will substitute it.

Some of these behaviors or experiences reveal intense caffeine addiction. Several coffee-drinkers have found that caffeine no longer has an effect on them, allowing them to drink coffee from morning until night. One participant said that if she doesn't drink coffee at night she will go into withdrawal. Winnie started drinking coffee in large quantities when she began working the night shift several years ago, and has noticed that she gets headaches if she doesn't drink coffee every 3 to 4 hours. Several other participants agreed on the difficulties associated with caffeine

withdrawal, which for them involves flu-like symptoms and aching headaches during withdrawal. Some drink up to 10 cups of coffee per day to function. At this point, one can infer that these consumers drink coffee much more for the caffeine than the flavor.

On the opposite end, some coffee drinkers expressed that drinking coffee for them is purely the flavor experience and the pleasure of drinking something they enjoy. These consumers felt that the caffeine was much less important than the taste, and they will decline and wait if there is no good coffee available. Laura prefers Lavazza beans and insists that her enjoyment of coffee is purely due to the flavor. She makes her own espresso at home and owns both a semi-automatic and super-automatic espresso machine as well as multiple grinders. She explains,

Laura: If I could get the flavor in a decaffeinated bean I would do decaf but I haven't found a decaf that has the flavor. But so I guess I'm there for the flavor and the caffeine is just tagging along.

Laura has invested a lot of time and effort into her coffee. She said that her love of coffee began when she tried her first espresso, and that the crema (foam on top) is what keeps her from coming back. She frequently serves espresso to guests and considers coffee to be a big part of her life. Laura clearly chooses coffee primarily for the flavor, while many other participants appear to choose coffee primarily for the caffeine. However there are many more reasons beyond flavor and “wakes you up” to that influence coffee drinkers to consume coffee.

A familiar friend

A significant number of coffee drinkers mentioned having specific coffee rituals, which brought up a theme of consistency and tradition. Every morning, seven days a week, David will wake up and make two cups of Maxwell House coffee to drink in the morning. He uses different specific scoops for coffee, for cream, and for water so that his coffee is exactly the same every

time. Maria is obsessed with Starbucks Café Verona and will accept no other coffee. Laura likes to have black coffee in the morning and then has flavored k-cups like nutty caramel to drink after work, which is her “chill-out coffee”, which she will drink with milk. These participants have figured out what they like and draw a great deal of comfort out of knowing that their coffee will be the same each time.

Other coffee drinkers expressed the importance of getting time to sit and enjoy their coffee and not being disturbed. Martin is often too busy to sit and enjoy coffee during the week but Saturday is crucial:

Martin: Don't screw with my Saturday morning coffee ritual. The sun's coming up. I'm already awake. I go get my coffee. I sit on the porch for 20 minutes, that's my time. I watch the birds, whatever, whatever. Now after that, whatever. You can break out the chain saw. But for those 20 minutes don't screw with me please, you wouldn't like it.

Martin, along with several other respondents, feels like coffee facilitates an important experience for him—a chance to be at peace and sit and think and not have to deal with anything else. For these coffee-drinkers the tradition or ritual of sipping coffee while reading the newspaper, watching TV, or simply staring at the sunrise in the morning is very important. These consumers prefer to consume coffee before anything else and see that time as “me time”, choosing to avoid conversation or engagement with others until they are ready. As one participant described “it’s my chance to get strength to face the world.” Coffee is their chance to summon their mental energy to take on the day.

When asked why they consume coffee, participants said that their coffee drinking is just “kinda routine”, “I think a lot of it is habit, I’m not really sure”, and “I guess it’s a habit.” Many of them have been drinking coffee often for 20-30 years and can’t imagine stopping. At this

point, their habit has become engrained to the point where it is “nearly critical” and “part of my life, every morning”. While caffeine is a stimulant and obviously creates a psychological response that would be missed, several insist that they consistently drank coffee for reasons beyond mental stimulation. When asked if tea would be an acceptable substitute Shirley explains:

Shirley: I would still need coffee. It's not about the caffeine. I don't feel the effects of it. I mean I've been doing it since I was...maybe 7 or 8 years old. Every morning. Coffee was always a big part of my parent's life. I mean you get up and get yourself a cup of coffee. Sunday mornings get up and get a cup of coffee. That's just how you started your morning since I was a little girl. So, I just continued it.

For Shirley, coffee means more than the sum of its caffeine and flavor. For her, it means a connection with her parents and her childhood. John, who is close to retirement, specifically drinks the same Maxwell House coffee as his parents because it reminds him of them. Many participants were influenced to drink coffee by specific people they care about, such as parents, grandparents, or spouses. Some of them have come to associate coffee with fond memories of their loved ones. Alyssa credits her grandmother with getting her addicted to espresso in the morning and says that the drink has special meaning to her because of the significance.

Some participants associate their coffee consumption as a “coming of age thing.” Susan felt like it was a privilege when she realized she was old enough to drink coffee. Several coffee drinkers described their parents serving them a cup of weak coffee or allowing them to sip the remains of coffee from the bottom of a cup when they were growing up. They felt important when they made the choice to or were allowed to drink coffee themselves after it was a forbidden thing growing up.

Other consumers said that they mainly drink coffee as a social opportunity with others. Sam said that he really valued the opportunity to connect with friends and family over a cup of coffee. He really enjoys the atmosphere of a coffeehouse and drinks coffee for the social aspect. To him the coffee is “a byproduct of being around really great people”. Other participants mentioned enjoying the intimate and sensory pleasure of brewing coffee or grabbing a cup of coffee with a friend. Nate has a friend that comes by the house regularly and their routine is to sit and drink coffee together. Some grew up with coffee-drinking traditions, such as Elizabeth, who identifies her family as staunch “coffee drinkers.” Elizabeth explains that during family gatherings they will go through coffeepots like chain smoking—the next one gets prepared before the first one runs out.

While most consumers acknowledge that coffee plays an important role in their lives, some explicitly named the meaning and significance of coffee in their lives. Luke feels like coffee is a familiar friend:

Luke: I just really love it. It's great. You can just, it goes with all the different times of the day. Coffee is a companion. I was a smoker for 10 years and smoking was the same way. You can celebrate with it or be sad with it or be stressed with--it's there for all of those things.

Coffee has a lot of meaning for Luke and has been something he has relied on continually for many years. Other participants nodded knowingly after Luke's sentiment was shared. It appears that coffee represents something beyond flavor and caffeine to many participants—a meaningful routine or tradition that brings comfort, memories, and connection.

Tea is a hot, caffeinated beverage similar to coffee but almost all the coffee drinkers rejected the idea of tea in the morning, insisting it would be an unacceptable substitution. One said “it

wouldn't happen. I would just drink water." Another explained that, "teas are like cats. They don't love you back." Many coffee drinkers feel that tea tastes good and has a good flavor but is more for when they are sick or are trying to relax. Some said that they would drink tea in the evenings but not in the morning. Jamie explained that coffee was unique, that she had dozens of teas in the house but there was no substitute for coffee. Elizabeth explained about her family:

Elizabeth: We don't smoke and we don't drink hot tea. We drink coffee.

Elizabeth bonds with her family through drinking coffee and they will go through several pots during a family gathering. Tea would be a deplorable replacement. It appears that many coffee drinkers find something special and important about coffee that tea cannot compete with. Whether it be the flavor, the increased caffeine, or the familiar associations, coffee means something very significant to them.

Emotional effects of coffee

Many participants drink coffee for the benefit of boosting their day. Laura explained that coffee gives her a little oomph to get her started, both physically and emotionally. One participant said that he liked coffee for the "good, warm hug it gives you", with many others agreeing that they felt the same. Elena said that she feels like a nicer person when she has it:

Elena: I'm just like, so much happier. It's the first thing you do when you wake up in the morning. If I run out it ruins the entire day.

Elena enjoys coffee because it brightens her day. Many brought up that if they missed their coffee they would feel more slow and sluggish. Others expressed emotional responses to missing coffee. George said that if he doesn't have coffee he gets really cranky because he's not a morning person. Silvia explains that if she doesn't get coffee she will be snippier and a little more pessimistic.

Coffee drinkers experience a wide range of emotions from their coffee, including joy, euphoria, very happy, giggly, effervescent, energized, satisfying, soothing, relaxed, calm, good, great, relieved, jump started, gratified, and nostalgia. When asked how he would feel if presented with the best cup of coffee ever, Kyle responded:

Kyle: It would be like there were angels singing. I would be so close to coffeegasm. Don't use that for branding. I'm claiming it.

Kyle loves the sensory experience of coffee and associates it with highly positive emotions, with the perfect cup of coffee anticipated to bring him extreme pleasure. Coffee consumption appears to stimulate both high energy and low energy feelings, with many consumers additionally making noises of happiness and relaxation such as ahhhhhhh. Several agreed that coffee made them feel secure and comfortable, particularly when they held the cup in their hands and felt the warmth and could bring it close to their body. Sam said that when things are emotional or stressful he finds myself heading towards coffee, because coffee is “always there” for him.

When asked how a bad cup of coffee would make them feel, most said that they would feel disappointed and let down. One said that it would be like a slap in the face. Another said that he would feel cheated, like someone has wronged him. Other negative emotions from a bad cup of coffee included disappointment, disgust, and the feeling that the day is ruined. Some would feel mad and others might pour it down the sink. Martin said that he once threw an unsatisfactory XL cup of coffee out the window at 4am during a particularly long drive from Florida to Georgia.

Price

Price had a large influence in these consumers' choices in coffee. One participant said that she would drink any coffee as long as it wasn't “fancy or expensive.” Another said that she

had a couple of preferences when the budget allows for it, but usually just drinks the cheapest Keurig pods she can find. A few consumers mentioned that after making one pot of coffee they might put a little bit more coffee on top and do a re-run to save money while still getting the flavor. If Julie buys bad tasting coffee she will mix it half and half with good coffee so that she can still drink it and doesn't have to waste the whole bag.

Other participants found that price was worth it to them because it was so important. Laura, the espresso drinker with lots of fancy machines, explained that she is particular about her coffee and needs it to be a certain quality. She has tried to stop because it is expensive but she can't.

Identity

One important function of these focus groups was to understand more about how consumers shape their own identity, particularly consumers that see their tastes for coffee as an important part of their self-image. When asked to freely list words that described their identity, some said "habitual" and "average coffee drinker". Maria, with her insistence on whole bean Starbucks Café Verona, calls herself "consistent." Several members of one focus group readily agreed on what kind of coffee drinker they identified as:

Shirley: I'd have to say I'm an addict.

Joanna: Addict.

Chelsea: Yeah coffee addict

Paul: My name is Paul and I'm a coffee addict.

Shirley, Joanna, Chelsea, and Paul were happy to share their identities related to compulsive coffee consumption. Carissa was less forthcoming as they were sharing their identities around the table:

Jerry: Nobody mentioned addict yet. There may be a couple around the table.

Carissa: We're still in denial! That's why I went with habitual. It sounds a little better.

Carissa is reticent to call herself an addict, either because she isn't proud of it or because she feels like her consumption is based more on routine and habit than addiction. Later, when asked if participants identify as a connoisseur, aficionado, or enthusiast, many said that they identified as coffee enthusiasts because coffee is something they enjoy. Participants were intentionally not provided with a definition for the terms connoisseur, aficionado, and enthusiast. This, of course, led to some who admitted to not understanding.

Tina: I'm just an every morning coffee drinker and I like my coffee. None of these fancy words here. I'm from Griffin.

Along with the teasing remark that people from Griffin aren't particularly fancy, Tina claims to be an "every morning" coffee drinker, meaning that the only part of her coffee consumption she attributes to her identity is the repetitive consumption. She is conveying the same message as those identifying as habitual consumers or addicts—for them, consumption of coffee is no more profound than an important daily routine. These consumers may not think deeply about their coffee, seeing it more as a functional item they enjoy. Other participants felt that their coffee identity related more to the type of coffee they drank, identifying as a "strong coffee drinker" or "black coffee drinker".

After asking participants to freely list a word describing their identity, participants were asked if they identify as a connoisseur, aficionado, or enthusiast. These words were chosen as possible options for consumers to identify as if they felt strongly invested in their coffee. Martha feels that she is an enthusiast but definitely not a connoisseur:

Martha: I'd say enthusiast. I get pretty enthusiastic. I know I'm not a connoisseur. I'm thinking about them making this and that and this and all I hear is the teacher from Charlie Brown. All that stuff doesn't mean much to me.

Martha decided that since she wasn't interested in hearing about different types of coffee drinks that therefore she must not be a connoisseur. In a different group Juliana shares a similar sentiment when asked about her identity:

Juliana: There's other things in life. I mean it's just a cup of coffee! Just give me a cup of coffee and be done with it. But now my son in law knows all of these beans and roasts and I'll drink coffee with him and I'll listen to him but I'm not paying any attention.

Both Juliana and Martha are actively disinterested in learning about coffee. Their understanding of a connoisseur is someone that is highly knowledgeable about coffee. Conversely, another coffee-drinker, Betty expressed interest in learning more about coffee to be able to engage with connoisseurs. Sarah, a participant who self-identifies as a connoisseur, had a different interpretation of the word:

Sarah: I'm a connoisseur because I can tell the difference between Folgers in the red canister [ground beans] and what I make on my instant. I like my instant better. I don't know why there would be such a difference but to me there is. And most of the time I can tell.

In this situation, Sarah understood the word connoisseur to mean someone that could tell the difference between coffees. Since she could tell that her instant coffee was different from ground coffee, she considered herself to be a connoisseur.

Many coffee drinkers also defined connoisseur as an ability to distinguish. Paul, the same participant who identified as an addict earlier, shared:

Paul: I'm the same way. My mom and dad would not drink Maxwell house ground coffee. They said it tastes bad. But they will drink the instant. And if I had to drink their instant, I could tell an immediate difference in the taste. It's just not as robust as ground coffee. There's a total difference.

Would you call yourself a connoisseur?

Paul: Yeah, probably.

Paul places himself in the connoisseur category because he can immediately distinguish his parents instant. Another participant, Brad, says that he was obsessed with coffee, but wouldn't call himself a connoisseur because, "it all tastes the same to me, really". Brad agrees that connoisseurship relates to being able to discuss nuances between coffees. Another self-identified connoisseur, Kyle, worked as a server in a high-end restaurant for three years. At the time the only free thing he was allowed to consume was the coffee. Thus over the years he sampled many excellent coffees and now has a very discerning palate and high standards for good coffee.

Other participants understand the word connoisseur to mean someone who invests time in money in getting "the good stuff." Robert defines connoisseur as someone who drinks pricier supermarket coffee:

Robert: I guess we're kinda connoisseurs thing. We go for the higher end stuff. We're drinking Givalia right now. It's vanilla flavored. It's like \$7.99

Robert was proud to share with the group that he valued high quality coffee and only purchased Givalia. Robert's wife Natalia, however, said that she didn't think she was a connoisseur because she didn't grind her beans. She said that they used to grind their beans but stopped because it didn't make a difference since they ground them the night before. Another participant, Daria, doesn't identify as a connoisseur, aficionado, or enthusiast but calls herself a

“coffee diva” because she likes everything to taste natural and like it’s supposed to. Daria is very picky about avoiding artificially flavored creamers, and is even planning on breaking up with her Keurig because “it’s putting hot plastic into our coffee and our bodies.”

The word snob wasn’t listed in the initial question “do you identify as a coffee connoisseur, aficionado or enthusiast?” because it carries an elitist connotation and could possibly offend participants. When asked as a follow up question in some groups, nobody chose to identify as a snob. However, several said that they were “snobbish” with their coffee, equating their preferences to pickiness. This linguistic difference indicates that these participants are careful not to imply that their coffee consumption is better. Laura explained that some people would say that she was a snob because she invests a lot of time and money into her espresso making, but that she was not because she would drink Folgers if it was offered to her. Participants were careful about not conveying superiority to others, which is typical of the considerate “Southern hospitality” culture that one finds in Griffin, GA.

In the end, 12 participants out of 50 chose to identify themselves as connoisseurs. The word aficionado was avoided, possibly because it was seen to mean the same thing as connoisseur. Many participants identifying as connoisseurs did so because they had tried different coffees and discovered what they liked and enjoyed trying new coffees. One said he was a connoisseur because he had “definite tastes.” Jane said that she was a connoisseur because she liked to try different coffees and compare them. Jane explains:

Jane: It’s not just drinking the coffee it’s trying the different ones. It’s a lifestyle.

Coffee is so important to Jane that she considers it a lifestyle. She self-identifies as a connoisseur because sampling new and interesting brands of coffee is a great source of joy in her life.

Interestingly, identifying as a connoisseur has minimal correlation with the quality of coffee these consumers drank, which ranged from instant coffee to Maxwell house ground to Lavazza whole beans. Connoisseurs were equally as likely as other coffee drinkers to add sugar and cream to their coffee. Also, self-identified connoisseurs were no more likely to own expensive coffee machinery, with many using single-serve Keurig pods to make their coffee. Actually, the consumers who regularly consumed high quality whole bean coffee were less inclined to label themselves as connoisseurs, choosing words like “acquired taster,” “social,” “adventurer” and “experimental.”

Andrew, a passionate coffee roaster for a local independent coffee shop, explains that he isn't a connoisseur because he only has specific expertise in the South American coffees he purchases for the coffee shop and isn't super familiar with the wide range of coffees available elsewhere. Andrew was likely the most well-informed focus group participant—he has been refining his coffee roasting technique for ten years and spends a lot of his time thinking about coffee. He calls himself an “enthusiast” and “picky”, but rejects the connoisseur label because of his lack of experience with coffee beans from other parts of the world. Derek, another avid whole bean coffee drinker, rejected the connoisseur title because he considers it to be too pretentious. Derek calls himself “curious” because he loves to try new brands of coffees and intentionally seeks out local roasters when traveling.

In the end, self-identifying as a connoisseur was not an effective tool to discern and differentiate consumers that consumed a wide variety of coffees, consumed higher end coffees, or knew a lot about coffee from those that were not adventurous or knowledgeable about their coffee. Self-identified connoisseurs, in general, felt strongly about their coffee and thought that they were well-informed about coffee. However, participants who were heavily involved in the

coffee world were less likely to self-identify as a connoisseur because they were aware of how much they did not yet know. As a measure of determining how much thought and effort participants put into their coffee, the words connoisseur, aficionado, and enthusiast were insufficient.

Coffee Chains

Starbucks, the largest coffee house brand in America, was brought up independently in all 6 groups. Many shared strong opinions about Starbucks, with the majority of focus group participants agreeing that Starbucks was much too expensive and “fancy coffees” were something frivolous and silly. When Caroline mentioned that she will go to Starbucks when she is traveling it prompted a question from Jenny:

Jenny: Can I ask you a question?

Caroline: Oh dear.

Jenny: Do you have a long list of what you tell them to put in your coffee?

Jenny is asking Caroline if she is one of *those* consumers—the ones that speak fluent Starbucks and ask for specific drink modifications. Caroline responds quickly that she is not and that she has a very simple drink order, just a breve latte tall. In a different group a participant admits, “I don’t go to Starbucks. I don’t know anything about it. It’s too much.” Many of these focus group participants are overwhelmed and intimidated by Starbucks culture and reject it as dumb and unnecessary, possibly because they perceive they are not economically or culturally able to take part. Two groups brought up the term “foo-foo” or “floofy”, referring to the type of drinks Starbucks sells--unnecessarily fancy and a waste of money. The few consumers who claim to go to Starbucks are insistent that they were not the kind of consumers that had lengthy orders.

Martina explains:

Martina: I don't do anything special. French vanilla coffee. No latte, no frappe. I only know about it because a friend bought it for me. I stick to what I like.

Martina is asserting that she is the same as her fellow focus group members; that she is not trying to be better than anyone. This reoccurring theme of “I’m not better than you” surfaced in discussions of Starbucks as well as general coffee preferences. Those who purchased Starbucks or drank higher-quality coffee were careful not to imply that they judged anyone for drinking Folgers or Maxwell House, even when they named these brands after being asked to list bad quality coffees. While the groups recruited for “connoisseurs, aficionados, and enthusiasts” had more people that prioritized good-quality coffee, every group had at least one or two participants who drank lower-end name brand coffee. Overall, these focus groups encompassed a wide variety of coffee consumers and provided valuable insight into the psychology and identity of coffee drinkers in Griffin, GA.

Discussion

These coffee-drinkers encompass a wide range with their favorite type of coffee, from Folgers Instant to vanilla-flavored Keurig pods to single-origin Fair Trade whole bean coffee. They also vary in their preference for add-ins such as sugar and creamer, level of roast, and strength of brew. These consumers look for different desirable attributes in coffee and may use different language to describe their preferences, from “strong and bitter” to “viscous and complex flavor.” They drink between 1 and 10 cups per day, averaging 2-3. Many use a Keurig machine or drip coffeemaker to brew coffee, but others use a French press or espresso maker. Thus it is impossible to pinpoint what makes “a good cup of coffee” as each participant has different tastes and preference. Generally most focus group participants agree that coffee should

be sufficiently strong, fresh, and “good-tasting”. However, all participants have different preferences as well as different motivations and conceptions about coffee.

Antin and Hunt (2012) tell us that preferences are largely influenced by sensory aspects like flavor and taste but also by factors such as social and cultural beliefs, habit, and economic background. *Familiarity, personal experience, habit, price, and identity* are several factors that come into play with consumers’ decisions about coffee.

Familiarity and Personal Experience

Many participants’ coffee drinking began as the result of influence from someone close to them, such as a family member, spouse, or co-worker. Some participants’ palates were heightened by those who introduced them to it—Alyssa was “spoiled” by her grandmother’s espresso and Kyle seeks out high-quality specialty coffees from his days working as a server in a fancy restaurant. Others continue to drink the same kind of coffee their parents did growing up, like retiree John with his Maxwell House coffee. Consumers often choose foods based on the food’s familiarity to them and a positive association with family and friends (Antin & Hunt, 2012). The tastes and preferences of many of these participants were likely influenced by those around them as well as the general surrounding coffee culture.

In addition to familiarity and environment, socially and culturally constructed beliefs and values play a huge role in how people make food choice decisions. These social and cultural beliefs can imbue food with meaning, which is communicated through consumption (Douglas, 2003). Many consumers described how coffee holds important meaning and significance for them, particularly with reference to an important morning ritual. Creating “me time”, or an opportunity to relax and sip coffee and begin the morning is a critical part of morning coffee consumption.

Luke described coffee as “a familiar friend” and Shirley explained that she doesn’t drink coffee for the caffeine but is deeply attached to her morning coffee routine. Others cited the pleasure of sharing coffee with a friend as integral to their experience with the beverage. Participants described a range of positive emotions elicited from coffee consumption, including euphoria, very happy, giggly, effervescent, energized, satisfying, soothing, relaxed, calm, good, great, relieved, jump started, and gratified. It appears that coffee represents something beyond flavor and caffeine to many participants and can be a very emotionally significant and meaningful routine or tradition that brings comfort, memories, and connection.

Habit

A glaringly obvious factor influencing coffee consumption is addiction and habit. Several consumers described behaviors representative of intense addiction such as requiring large volumes of coffee per day and experiencing excruciating withdrawal headaches if they missed a dose. Many participants self-described as coffee addicts and some shared hilarious stories of what they did for their need for caffeine. Notably, most participants said “habit” when asked why they consume coffee. Even when hard-pressed, many were unable to articulate a reason for their daily consumption beyond daily convention and routine. This echoes Phan Thuy (2015)’s finding that coffee consumption on a day-to-day basis is driven primarily by habit, as opposed to pleasure and enjoyment that motivated other beverage consumption like soda and alcohol. Habit has been shown to play a critical role in food choice, with habitual behaviors such as eating unhealthy foods being highly resistant to change and almost inaccessible to cognitive arguments (Köster, 2009). It is clear that habit plays a large role in the complex decision-making factors that influence coffee consumption.

Price was a critical decider of what brands to purchase, with some saying that they would purchase cheaper coffee or creamer if they ran out of money by the end of the month.

Identity

Every time a consumer makes a decision, in this case about coffee, they are reflecting on themselves and their environment, creating meaning, and thus self-selecting an identity (Crouch & Neill, 2000). Identities arise through a complicated interaction between the self and the environment which is often reflexive. In this case, this means that the identities of consumers will both influence their coffee choice and result from their coffee choice.

Some food-related identities were revealed organically in the focus group discussion. Elizabeth described her entire family by saying, “We’re coffee drinkers.” Everyone in her family drinks coffee and will often go through multiple pots at family gatherings, inspiring an identity that they all share. When asked what kind of coffee they consume, some consumers said, “I’m a Maxwell House drinker”, instead of “I like drinking so and so brand.” Maria is a drinker of Starbucks Café Verona, which she managed to mention no less than four times during the hour-long focus group. Her brand loyalty is so strong that she identifies as a “Café Verona drinker.” The way some of these consumers identified with their chosen coffee brand indicates that this choice means something unique that goes beyond customer loyalty and says something about her as a person.

When asked to freely list words that described their identity, some consumers said “habitual” and “average coffee drinker.” Others described the coffee they drank, such as “black coffee drinker”. For these consumers the consumption of coffee is no more profound than an important daily routine Many self-admitted that they were an “addict.”

After being asked to list identities, participants were asked if they identified as three identities chosen to represent passion for high-quality coffee: “connoisseur, aficionado, and enthusiast.” About half the participants felt that they were coffee enthusiasts because they enjoyed drinking coffee, no one claimed to be a coffee aficionado, and twelve out of fifty focus group participants said they identified as a connoisseur. There was no clear discernment between those identifying as a connoisseur and those not identifying as a connoisseur. In fact, because the definition of the word connoisseur was intentionally left open to interpretation, many consumers identified to be a connoisseur that would fall short of the typical definition, such as Sarah who “could distinguish between Folgers instant and Folgers ground.”

There was no obvious association between consumers having knowledge about coffee and self-identifying as a coffee connoisseur. In general, there were 4 different “qualifications” that consumers felt would make someone a connoisseur. These qualifications included an implication of extensive knowledge about coffee, a cultivated “good taste”, an ability to discern between different types of coffee, and a willingness to spend extra money on good taste. About half the self-identified connoisseurs claimed the title because of their ability to “tell the difference” or discern between coffees, which were mostly between grocery store brands. A few said that they were connoisseurs because they had good taste, and one claimed the title because he bought Gevalia brand coffee instead of the lower-priced options.

However, many coffee drinkers that were highly involved with specialty coffee rejected the connoisseur label because they “didn’t know enough.” Notably, the consumers who regularly consumed high quality whole bean coffee were less inclined to label themselves as connoisseurs, choosing words like “acquired taster,” “social,” “adventurer” and “experimental.” It appears that once a coffee drinker is fully aware of the depth and breadth of learning about coffee, they are

less likely to consider themselves a connoisseur, but if someone's experience with coffee is limited to those available at the local grocery store they believe themselves to have a thorough understanding of all available products. This phenomenon may be representative of the Dunning-Kruger effect, a cognitive bias in which relatively unskilled persons overestimate their abilities and perceive themselves to be more skilled than they actually are (Kruger & Dunning, 1999). The more feedback and skills people develop in a particular category, the more likely they are to realize the limitations of their abilities.

In the end, words like connoisseur were not particularly effective in differentiating people that consumed a wide variety of coffees, consumed higher end coffees, or knew a lot about coffee. Self-identified connoisseurs, in general, felt strongly about their coffee and thought that they were well-informed about coffee. However, participants who were heavily involved in the coffee world were less likely to self-identify as a connoisseur because they were aware of how much they did not yet know. As a measure of determining how much thought and effort participants put into their coffee, the words connoisseur, aficionado, and enthusiast were insufficient. Demographic information about coffee consumption habits, brands used, and general attitudes about coffee may be more useful to ascertain coffee involvement, as some consumers lofty self-identities correlated poorly with their actual coffee routines.

Coffee snobbery

Participants were careful about not conveying superiority to others, which is typical of the considerate “Southern hospitality” culture that one finds in Griffin, GA. An insistence on modesty—the antithesis of snobbery—was a reoccurring theme. In these spaces consumers are careful not to offend others beyond friendly jabs about their coffee. Nobody chose to identify as a snob, although some said they were “snobbish” about their coffee. Laura explained that some

people would say that she was a snob because she invests a lot of time and money into her espresso making, but that she was not because she would drink Folgers if it was offered to her.

Starbucks coffee shop was brought up independently in all six focus groups, with most participants regarding their coffee-based drinks as silly, fluffed-up, “foo-foo”, and a waste of money. Those that did consume Starbucks were quick to explain that they were not one of *those* consumers—the ones that speak fluent Starbucks and ask for specific drink modifications. Many of the focus group participants were of lower income and may have felt overwhelmed and intimidated by Starbucks culture. They reject it as dumb and unnecessary, possibly because they perceive they are not economically or culturally able to take part.

Conclusion

In conclusion, there are many reasons and influences for consumers to drink coffee. Consumers gained a diversity of meaning and significance from their coffee, from the sensory aspects of the beverage to the connection to loved ones to the treasured opportunity for respite and relaxation. Every consumer had different motivation for consumption, ranging from intense addiction to a comforting daily habit to the sheer euphoria experienced from a good cup. Each got a slightly different emotional experience from the beverage and appeared to construct their identities based on different inputs which they found to be uniquely relevant. These findings provide a valuable framework to learn more about the emotional experiences of different coffee consumers and suggest appropriate information to gather to attempt to cluster or segment consumers to see if further conclusions can be drawn.

Limitations

There were several limitations of these focus groups. Because all participants lived close to Griffin, GA, the demographics were skewed to be representative of a small town in the rural

south. Additionally, it is possible that those who felt strongly about coffee did not feel comfortable sharing their thoughts for fear of offending those in the room that did not drink high-quality coffee. A future study would do well to recruit within a larger metropolitan area to gain more perspective and diversity of opinion.

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CHAPTER 7

WHO CARES ABOUT HIGH QUALITY COFFEE? AN ANALYSIS OF COFFEE
INVOLVEMENT AND EMOTIONS WITH DIFFERENT CATEGORIES OF COFFEE
CONSUMERS³

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Abstract

Coffee consumers differ in the importance and value they place in high-quality coffee. Focus groups revealed that decisions about coffee consumption appear to be influenced by many factors including habit, familiarity, meaning and significance, price, and one's identity as it relates to coffee. Additionally, focus groups generated several "coffee involvement" concepts which were used to gather data in subsequent consumer tests. Emotional consumer tests were performed with three coffees of varying quality and a fourth dummy sample to eliminate the first-order effect in emotions research. Based on the 11 emotion terms that were significant in predicting for liking for all four clusters we can infer that the most important emotional qualities consumers seek in their coffee relate to gratification, calming, focusing, the absence of disgust, and general positive emotions. Four consumer clusters were identified based on coffee liking scores--"Typical coffee drinkers" that prefer Folgers coffee and feel generally emotionless and indifferent to coffee, "Uninterested coffee drinkers" that prefer mild-flavored coffee with lots of cream and sugar and would be okay with drinking tea instead, "Coffee lovers" that liked all three coffee samples, experience a lot of emotion when drinking coffee, and would never substitute coffee for tea, and "Coffee snobs" that care strongly about flavor and are choosy and discriminative about their coffee. Typical and Uninterested coffee drinkers were low on the spectrum of coffee involvement while "coffee lovers" and "coffee snobs" were high. Self-identifying as a connoisseur was not significantly associated with high-quality coffee choices, suggesting that self-selecting an identity may say more about consumers wish to convey versus their true consumption habits.

Introduction

Coffee drinkers consume coffee for a variety of reasons. Labbe et al. (2015) divided motivations for coffee drinking into two distinct factors — sensory enjoyment (hedonic motivation) or by stimulation (functional motivation), and were able to recruit participants who identified specifically as one of the two categories to gain a better idea of how to market to each individually. Cines and Rozin (1982) noted that the number of cups of coffee consumers drink per day is predicted by their liking for hot coffee flavor, their desire for “morning effects” such as helping to wake up and relax, and caffeine addiction. Coffee can also provide psychological and emotional benefits. Asioli et al. (2014) found that consumers’ main motivations for iced coffee consumption are enjoyment and relaxation as well as for energy and alertness. Drivers included ‘I want to indulge myself’ followed by ‘it will keep me awake’ and ‘I need new energy.’ Different kinds of consumers can be distinguished by both their motivations to consume coffee and the importance of coffee in their lives. Bell and Marshall (2003) found that individuals fall on a continuum of general “food involvement” which depends on the extent to which they enjoy thinking about food, talking about food, and engaging in food-related activities. Individuals who are more highly food-involved are associated with a greater ability to discriminate between foods and exhibit greater differences in hedonic ratings, which should apply to coffee as well.

Another factor that can serve to differentiate coffee consumers is the emotions they experience while drinking coffee. Understanding consumers’ emotions in response to coffee drinking can reveal important information about their coffee drinking experience. Bhumiratana et al. (2014) developed a 44 term coffee emotional lexicon and found that coffee drinkers sought different emotional experiences from the beverage including high-energy emotions, low-energy

emotions, and a feeling of focused mental state. Interest in measuring product-related emotions has recently grown due to evidence that emotions play a significant role in influencing consumers' choice and consumption behaviors (Jaeger & Hedderley, 2013). Measuring food-evoked emotions can guide understanding of consumer behavior of food choice and be a valuable source of information that goes beyond traditional sensory and liking measurement (Erica Kenney & Adhikari, 2016). Emotional responses can be a critical tool for industry product development and marketing campaigns (Russell, 2003).

Coffee quality is another important factor to categorize coffee consumers. The quality of coffee is often determined through evaluation of its sensory properties by trained coffee "cuppers" who evaluate and apply standardized criteria to the aroma, flavor, and body of a given sample (Lingle, 2001). Coffee is commonly divided into two categories: commodity coffee and specialty coffee. Commodity coffee is generic "coffee", with a focus on price-point and minimal consideration to quality or how it was grown or processed while specialty coffee is grown, processed, shipped, roasted, sold, and brewed with taste as the primary focus (Hoffman, 2014). Specialty coffee is generally higher-quality and more exclusive than the relatively homogenous and undifferentiated industrial blends (Ponte, 2002).

Coffee freshness and quality was not a high priority in the U.S. until about the 1970's, at which point consumers' focus shifted from convenience to taste (Sinnott, 2010). This triggered the rise of specialty coffee and the growth of social coffeehouses. The onset of coffeehouse chains such as Starbucks and Peet's offered authentic, high-quality, niche specialty coffee products imported from all over the world. This created lucrative distinctions between specialty coffee and homogenized, mass-produced coffee products (Lyons, 2005).

This rise of coffee house chains provided an opportunity for consumers, especially the middle class, to demonstrate their refined taste through consumption of these new, superior coffee products (Roseberry 1996). Consumers began to create identities around these brands and experience and embody a feeling of elite coffee status (Bookman, 2013). This growth of branded chain coffee houses in the late twentieth century encompassed the “second wave” of coffee consumption while the subsequent “third wave” of coffee began around 2002, focusing on showcasing the unique qualities of the beans themselves with improvements at all stages of production, with a focus on growing region, processing, and roast (Manzo, 2010). Both waves helped create a new kind of consumer—self-proclaimed “coffee geeks”, or coffee connoisseurs. Coffee provides an opportunity for these consumers to cultivate and display “taste” and “discrimination” as they seek out distinct, “authentic”, good-quality coffee (Roseberry, 1996). These consumers may enjoy what Bourdieu (1984) terms “symbolic distinction,” a cultural construct that is shaped and maintained through conspicuous consumption.

Developing one’s identity is a continual process which requires acquisition and then consistent validation as consumers make conclusions about consumption that both reflect and enhance their own identity (Crouch & Neill, 2000). Bisogni et al. (2002) did a series of interviews to understand consumer identities in relation with food. Food identities can include the range of foods a person views as acceptable i.e. identifying as a picky eater, personal characteristics such as an orientation towards health, and identities related to reference groups and social categories. Identity formation is a reflexive process—the identities of consumers both influence food choices and result from food choices as the person compares themselves with reference points (Bisogni et al., 2002). Food choice is a multi-dimensional process which involves one’s personal identity (Antin & Hunt, 2012). Many factors come together to influence

food-related identity and food choice, including the ideals, identities, and roles related to class, religion, family, and ethnicity (Devine et al., 1999). Learning about the traits embodied by self-identified connoisseurs as well as other coffee-related identities will be useful to understand more about the psychology of a growing population of consumers. Identifying the motivations of a consumer target of interest allows us to pinpoint these consumers and understand their responses in relation to this motivation for use in marketing, industry, and future research (Labbe et al., 2015).

The objective of this study was to gather information on coffee consumers and how they respond to different qualities of coffee. This information could be used to gain a better understanding of factors correlated with coffee connoisseurship. The research was conducted in two parts—focus groups and consumer evaluations including emotional surveys. Focus groups were used to gather information about consumer motivations to consume coffee and identify concepts related to coffee involvement and coffee connoisseurship. Emotional profiling consumer tests were used to understand consumer emotions in relation to three varying qualities of coffee. Emotional test participants were also asked to answer questions related to their coffee involvement and share their coffee-related identity and connoisseur status to provide more information on consumer concepts and segmentation. This allowed for the development of four coffee consumer clusters and a deeper understanding on coffee involvement and coffee-related identities such as connoisseurship.

Materials and Methods

This project was conducted in two parts – qualitative focus groups and quantitative consumer testing. The study was approved by University of Georgia’s (UGA) Institutional Review Board (IRB; STUDY00002475) before it was conducted.

Focus groups

Focus groups were conducted to determine coffee consumers' preferences and habits, what motivations they had for coffee consumption, and what factors may have influenced their coffee-related identities.

Participants

Participants were recruited through a pre-existing consumer database (Sensory Evaluation & Consumer Lab, UGA-Griffin) of about 450 people living in or around Griffin, GA as well as fliers posted at local coffee shops. The inclusion criteria was that participants must be 18 years or older and consume coffee three or more times per week. Recruited participants were divided into one of two types of focus group based on the answer to the question – “Do you identify as a coffee enthusiast, aficionado, or connoisseur?” In total, six focus groups of six to ten participants each were conducted—three “non-connoisseur” and three “connoisseur” groups. Each focus group lasted for about one hour and panelists were offered free coffee throughout the sessions. Panelists were audio-recorded with their written consent. A moderator facilitated the focus groups and was supported by a note-taking assistant.

Methodology

A focus group moderator's guide pertinent to the study was developed and used for conducting the focus groups, which took place around a table in a large well-lit conference room. Participants were verbally informed of the rules and guidelines and then asked to introduce themselves by their first name and share their favorite coffee and what they like about it. After introductions they were led through a series of questions to ascertain their coffee drinking routine and habits, their coffee drinking choices, their thoughts and feelings about coffee, and their coffee-related identity. Panelists were encouraged to talk out of order and to build off each

other's feedback to reveal more information about their coffee consumption habits and thoughts. Side talking was discouraged. Panelists were given name tents which were used to call on them directly to clarify a point or if there were not a large response to a particular question. Three focus groups with each type of participants (connoisseurs and non-connoisseurs) were run to ensure that the breadth of responses was represented and achieve data saturation.

Analyses

The audio-recording was transcribed within two days of each focus group to ensure accuracy. Names were changed upon transcription to ensure participant anonymity. Data analysis took place by printing out transcripts and highlighting words or phrases or themes that stood out as important, relevant and/or compelling. Comments were written above each highlight describing the phrase, for example "addiction", "meaningful routine", and "budget." Participant comments that correlated to a similar topic were highlighted and grouped together to identify overarching themes and ideas.

Consumer Test

Consumer tests were conducted to find out more about consumers' emotions in response to different qualities of coffee.

Consumers

Participants were recruited through the same ~450 person consumer database, a posting on a local community Facebook group, and fliers at local coffee shops. An online screener (Qualtrics LLC, Provo Utah) was used to determine whether potential participants qualified for the test. A verbal version of the screener was utilized for potential participants that did not have email addresses or had encountered technical difficulties. The inclusion criteria was that participants must be 18 years or older and consume coffee at least three times per week. The

screeners was designed to identify consumers that met the qualification criteria and keep the non-serious respondents out of the test. Participants who qualified were contacted by phone to give more information about the study and schedule their test session.

Samples

The three coffees chosen for the study were Folgers Classic Roast ground (Orrville, OH), Dunkin Donuts ground (Canton, MA), and Costa Rica Alberto Guardia Bourbon Honey, specialty coffee from Temple Coffee roasters (Sacramento, CA). These coffees were chosen based on their ratings on coffeereview.com, a subscription-based coffee rating website. On a scale of 1-100, Folgers Classic Roast received a score of 67 (2012), Dunkin Donuts received a score of 84 (2012), and Temple Coffee received a score of 96 (2015).

Sample preparation

Coffees were brewed using Mr. Coffee coffeepots (12 cup capacity; SK13; Sunbeam Products, Inc., Boca Raton, FL). Two pots were made of each coffee and mixed equally into two labeled double-walled steel carafes to retain heat and reduce within-sample variation. The average temperature was 90 °C. The brewing ratio was determined to be 106 g of coffee per 1.9 L of coffee by using the mean value of the range recommended by the Specialty Coffee Association of America's (SCAA) recommendations for brewing coffee SCAA's Golden Cup Award (92 – 120 g/1.9 L, resulting in a coffee strength between 1.15% to 1.35% dissolved coffee flavoring material. This translated to 72.41 g/1.3 L, which was used for brewing all the three samples.

Temple Coffee was freshly ground each morning to the smallest grind setting using a coffee grinder (Grindmaster, 825B, Louisville, KY) in an attempt to emulate the grind size of pre-ground Folgers and Dunkin Donuts. Participants were asked beforehand (during the test

scheduling call) to describe how they usually took their coffee. This was done to ensure that they would receive the kind of coffee they usually consumed (Bhumiratana et al., 2014). Individual small-packs of coffee creamer (CoffeeMate, Original Liquid Singles, Nestle, Glendale, CA) and half & half (Land O Lakes, Arden Hills, MN) in addition to whole milk (Kroger, Cincinnati, OH) and heavy whipping cream (Kroger) were used as coffee whiteners in the study. Individual cane sugar packets (Domino, Yonkers, NY), Sweet N' Low packets (Brooklyn, NY), Equal packets (Merisant Company, Chicago, IL) and Truvia (The Truvia Company LLC, Minneapolis, MN) were used as sweetening agents. Pre-measured amounts of whitener/creamer and sweetener/sugar were added to each coffee sample to avoid inconvenience to participants and possible discrepancies if they chose to not add the same amount each time. Twenty two participants asked for their coffee black. Coffee was poured into 236 mL paper cups with plastic lids (Dixie PerfectTouch, Atlanta, GA) about 5 min before serving and stirred to ensure proper solubilization of added whitener and sweetener.

Serving Protocol

Ten participants were scheduled for each session and each received four coffees samples. A dummy sample was used in the first position for all participants to accommodate for first-order effect in emotions research (Dorado et al., 2016). Dunkin Donuts sample was repeated as the first sample for all participants and this data was discarded before data analysis. After the first dummy sample, the order of presentation of the three samples was randomized. All samples including the dummy sample were coded with 3-digit random codes.

Data Collection

All data was recorded on paper ballots. Panelists received one questionnaire for each cup of coffee and a final questionnaire at the end asking about their coffee-related habits, thoughts,

and identity. Each coffee ballot asked participants to indicate how much they liked the coffee on a 9-point hedonic scale (1 = dislike extremely to 9 = like extremely), how familiar was the coffee on a category scale of 1-7 (1 = very unfamiliar and 7 = very familiar), and their willingness to buy the coffee on a category scale of 1-5 (1 = very unlikely and 5 = very likely). Participants were also asked to rate their emotions during consumption of the coffee using a pre-existing coffee emotional lexicon consisting of 44 terms (Bhumiratana et al., 2014). They were asked to circle the degree of intensity they were experiencing each emotion using a scale of 0 (not at all) to 4 (extremely). The order of appearance of the 44 words was randomized for each of the ten panelists at each session. Before rating their emotions participants were asked to visualize the last time they drank coffee, and continue to think about this occasion throughout the session. This is known as “priming” and was used to put them in the correct mindset and context to appropriately evaluate coffee emotions. Priming has been shown to have a significant impact in sample differentiation (King, Ramon, and Weingand 2015).

After sampling four coffees, participants were given a demographic questionnaire. They were asked to rate their agreement on a 5-point scale from “strongly disagree” to “strongly agree” on a series of statements such as “I am passionate about coffee”, or “I drink whatever coffee is available.” These statements were generated from comments in the focus groups to assess participants coffee involvement.

Data Analyses

Univariate Analyses

A one-way analysis of variance using the generalized linear model in SAS (ver 9.4; SAS Institute, Cary, NC, USA) was done on the data comprising of the acceptability and emotion

data. Post-hoc mean separations were carried out using Tukey HSD at 10% level of significance. The same analysis and assumptions was employed when the data for each cluster was analyzed.

Multivariate Analyses

The CLUSTER procedure using the overall acceptability data (Ward's minimum variance method) was used (SAS® ver 9.4) to cluster the consumers.

Principal components analysis (PCA) was carried out on the average emotions score for cluster × samples data matrix using XLSTAT (Addinsoft, New York, NY, USA). PCA was also done for frequency that that resulted from the 'coffee self-identity' question where the participants described their relationship with coffee using a single word.

Multiple correspondence analysis in XLSTAT was done for the quantitative data on demographic and habit questions related to coffee to gain consumer insights in to preferred habitude of coffee drinkers.

Results and Discussion

Focus Groups

Forty-seven participants showed up for six focus groups. There were 35 women and 12 men, ranging in ages from 19-71 y. They were asked questions about their coffee drinking habits and preferences, their motivations for drinking coffee, and about how they viewed themselves as coffee drinkers. Information from these dialogues was used to generate specific questions to be asked during the subsequent consumer test.

These participants varied widely with their coffee preferences. All said that flavor was important to them, yet each described their ideal cup of coffee a little differently, ranging from "lots of cream and sugar" to "strong and bitter" to "viscous and complex flavor." In addition to

flavor, habit and addiction, familiarity, meaning and significance, price, and identity are several concepts that were particularly salient when discussing consumers' experiences with coffee.

Habit and Addiction

The majority of participants said that they consumed coffee out of "habit", supporting Phan Thuy (2015)'s finding that coffee consumption on a day-to-day basis is driven primarily by habit, as opposed to the pleasure and enjoyment that motivates other beverage consumption like carbonated and alcoholic beverages. This habit is likely due to the fact that coffee contains caffeine, an addictive substance shown to improve mood, increase alertness, and improve performance on a number of cognitive measures (Christopher et al., 2005). Addiction frequently surfaced as a theme as participants expressed their need or craving for coffee. A few participants described habits indicative of extreme caffeine addiction, such as excruciating withdrawal headaches and drinking up to ten cups of coffee per day.

Familiarity

Many participants' coffee drinking began as the result of influence from someone close to them such as a family member, spouse, or co-worker. Some participants' palates were heightened by those who introduced them to it, like a participant being "spoiled" by her grandmother's espresso or another participant seeking out high-quality specialty coffees from his days working as a server in an upscale restaurant. Others continue to drink the same kind of coffee their parents did growing up. The choice to drink coffee and preferences about coffee flavor has often been affected by one's environment, reflecting the findings of Antin and Hunt (2012) that consumers often choose foods based on the food's familiarity to them and a positive association with family and friends.

Meaning and Significance

Another theme that emerged was the meaning and significance of coffee consumption, particularly with reference to a morning coffee ritual. Creating “me time” or an opportunity to relax and sip coffee to begin the morning is critical for many coffee drinkers. Some had very intimate relationships with coffee, where they describe as “a familiar friend,” or for the “good, warm hug it gives you.” The meaning and significance of coffee was epitomized by whether or not participants were willing to substitute their coffee for tea - some claimed that they simply liked something hot in the morning and would not mind a substitution while others were staunchly loyal to their coffee.

Price

Price had a strong influence in many consumers’ choices in coffee, with some saying that they would purchase cheaper coffee if they ran out of money by the end of the month. One participant said that she would drink any coffee as long as it was not “fancy or expensive.” Some participants mentioned making adjustments to save money, such as re-using the same grounds with more water or mixing a bad coffee with good coffee so as not to waste it.

Connoisseurship

When prompted, twelve out of forty-seven focus group participants said that they identified themselves as a connoisseur. Because no definition of connoisseur was given, the focus groups organically generated five different concepts that might identify someone as a connoisseur: an ability to discern between different types of coffee, extensive knowledge about coffee, an interest in trying new coffees, a cultivated “good taste”, and a willingness to spend extra money to get good coffee. However, identifying as a connoisseur did not appear to be related to knowledge and experience in the coffee world. Those who were very involved in

specialty coffee and worked for a local roaster were notably less likely to identify themselves as a connoisseur because they were aware of how much they did not know.

Summary

Decisions about coffee consumption appear to be influenced by many factors including habit, familiarity, meaning and significance, price, and one's identity as it relates to coffee. These focus group discussions generated a number of relevant concepts that were used to gather more information during the following consumer tests. These included caring about flavor and caffeine, being unable to function without coffee in the morning, being passionate about coffee, seeing coffee drinking as a lifestyle, belonging to a community of coffee drinkers, drinking any coffee that is available, drinking-high-quality coffees, curiosity about coffee, knowledge about coffee, ability to discriminate, and spending money on coffee. These factors may be useful to gain a deeper understanding of the coffee drinking experience.

Emotion Consumer Test

Out of the 252 people who began the online screener survey for the consumer tests, 209 took the survey to completion and 98 respondents actually qualified for the test. Twenty two people were recruited by verbal screeners to achieve a total of 120 recruited participants. Of those 120, 16 individuals either did not come or did not complete the test. Thus data from 104 participants was analyzed.

The participants were between the ages of 18-75 y and most drank coffee every day, averaging about 2 cups of coffee per day. There were 69 female and 34 male participants in the study. Twenty-three identified themselves as connoisseurs, 22 drank their coffee black, and 21 used whole beans. About half the participants consumed lower-priced grocery store coffee such as Folgers, Maxwell House, and Community Coffee while 23 consumed higher-priced grocery

store coffee such as Dunkin Donut, Eight O’Clock, and Gevalia, and 16 consumed specialty coffee purchased online or from local roasters.

Consumer responses to three different qualities of coffee

One-way analysis of variance on the entire data indicated Folgers to be the least liked coffee while Temple and Dunkin were equally acceptable (Table 7.1). The liking scores were all below 6 which show that none of the samples were liked by a majority of the participants. The same was true for both ‘familiarity’ and ‘willingness to buy’, which indicated that there might be segments of consumers who had preference for different samples. A low average liking for the Temple Coffee was unexpected because it is rated to be a higher-quality coffee. However, a processing flaw might have resulted in Temple coffee being less concentrated than the other two. While all three coffees were brewed at the same weight to water ratio for consistency, freshly-ground Temple Coffee was not able to reach the fine particle size and hence lesser surface area as compared to the pre-ground Dunkin Donuts and Folgers resulting in a comparatively weaker coffee.

Table 7.1: Average liking, familiarity and willingness to buy scores of the coffee samples for the entire data

Attribute	Coffees		
	Folgers	Dunkin	Temple
Liking (9-point scale)	4.52b*	5.74a	5.73a
Familiarity (7-point scale)	3.53b	4.26a	3.79ab
Willingness to buy (5-point scale)	2.21b	2.73a	2.83a

*Common letter in each row indicates no statistical difference at $p \geq 0.10$

No clear trends were seen for the emotion terms for all the 3 coffees as well, except for Folgers to some extent. As the least-liked coffee, Folgers was statistically different ($p < 0.05$)

from Dunkin and Temple in its low ratings for positive emotions of *content, fulfilling, good, merry, peaceful, pleased, relaxed, rewarded, satisfied, and soothing*, and high ratings for negative emotions, including *annoyed, disappointed, disgusted, grouchy, and off-balance*. To further elucidate differences between consumers and identify trends within the data, hierarchical cluster analysis using the liking scores was done.

Cluster Analysis: Liking and Emotions

Table 7.2: Average liking, familiarity, and willingness to buy scores of the coffee samples for each of the 5 clusters.

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

*Common letter in each sub row indicates no statistical difference at $p \geq 0.10$

** Cluster 5 is not discussed

The average liking, familiarity, and willingness to buy scores of the coffee samples for each of the five clusters resulting from the cluster analysis are shown in Table 7.2. The results show that cluster 1 liked Folgers the most, cluster 2 liked Temple, and cluster 4 liked Dunkin. Cluster 3 preferred both Dunkin and Temple over Folgers, though they did not dislike Folgers *per se*. Similar trends were noticed for ‘familiarity’ and ‘willingness to buy’ within a cluster-- consumers were more familiar with and willing to buy their preferred coffee. Cluster 5 was removed from further analysis because this group disliked all the samples and their average scores for familiarity and willingness to buy were very neutral indicating a low interest in coffee drinking.

To reveal emotional differences among the clusters a one-way ANOVA within each cluster was done. The 11 emotion terms that were common to all 4 clusters were *clear-minded*, *content*, *disgusted*, *fulfilling*, *good*, *motivated*, *pleasant*, *pleased*, *rewarded*, *satisfied*, and *soothing*. These emotions can elucidate what overall emotional experiences consumers look for and prioritize in their coffee. *Content*, *good*, *pleasant*, and *pleased* are compatible with consumers seeking positive emotional experiences when drinking coffee. *Clear-minded* and *motivated* were both associated with the desirable focusing effects of caffeine, while *soothing* implies relaxation and calmness associated with a nice cup of coffee. The only major negative emotion was *disgusted*, indicating that an inclination of displeasure is strongly correlated against liking. The emotions of *fulfilling*, *rewarded*, and *satisfied* might be related to the gratification of consuming a good cup of coffee. These findings are supported by prior research that consumers like their coffee to elicit positive low and high energy emotions as well as feelings of a focused mental state (Bhumiratana et al., 2014).

A principal components analysis bi-plot (Figure 1) shows all the positive emotions clustered to the right side of the plot while the negative emotions *off-balance*, *bored*, *annoyed*, *grouchy*, *disgusted*, and *disappointed* clustered to the top left and the less intense emotions of *nervous*, *worried*, and *guilty* near the middle on the left.

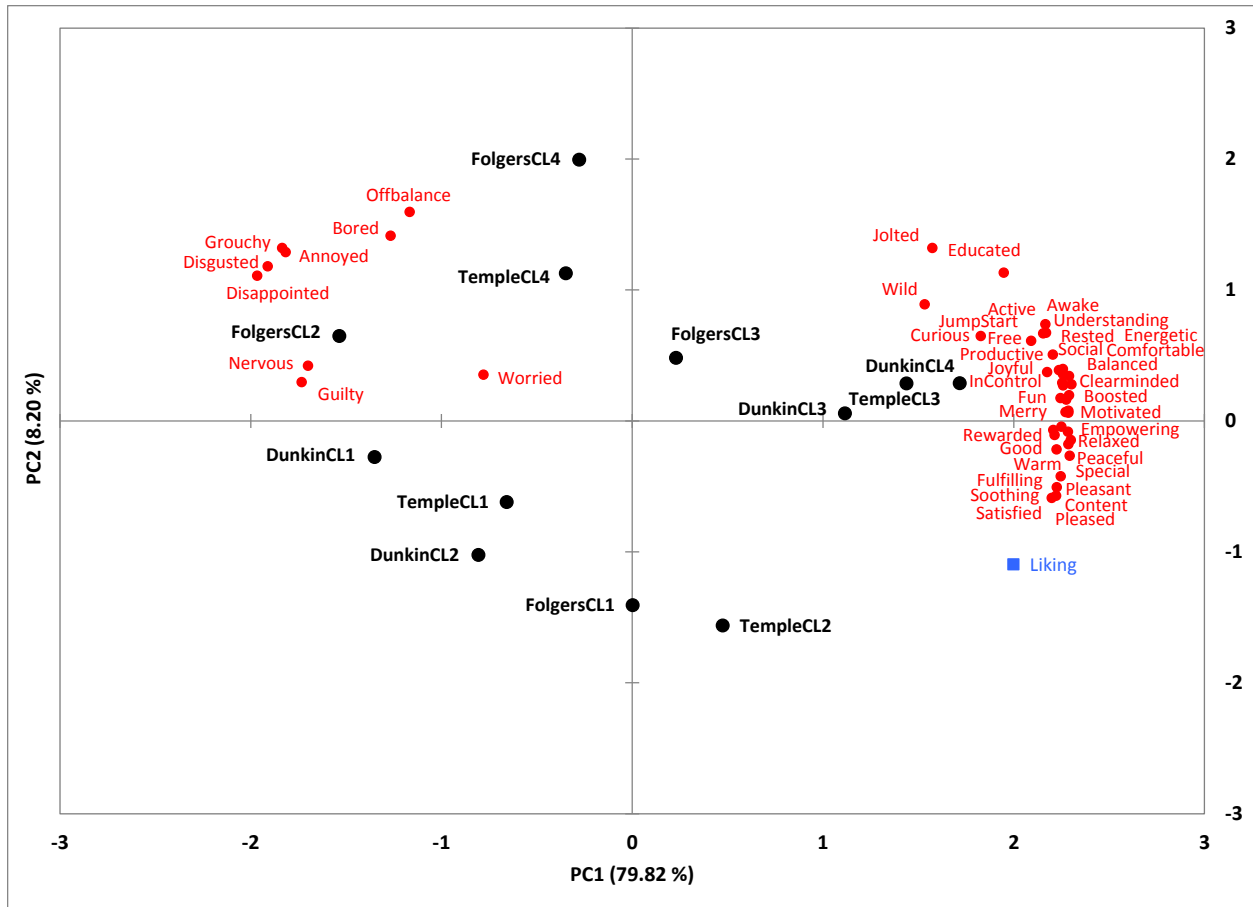


Figure 7.1: PCA plot representing 4 coffee clusters and 3 type of coffee with 44 emotions.

Cluster 1 liked Folgers the most, and Dunkin the least (Table 2), which is also apparent on the PCA plot as ‘FolgersCL1’ is closest to the positive emotions while ‘DunkinCL1’ is on the opposite side with the negative emotions. As shown in Table 3, Folgers scored significantly higher ($p < 0.10$) than the other two coffees for *pleasant*, *pleased*, *content*, and *good*, and lowest for *disgusted*. The emotion term *satisfied* most closely reflected the varying liking scores of the consumers in this group.

Table 7.3: Significant emotion terms for cluster 1 consumers

Emotions	Coffee Samples		
	Folgers	Dunkin	Temple
Boosted	1.32a	0.26b	0.95ab
Bored	0.26ab	0.68a	0.11b
Clear minded	1.53a	0.42b	1.21a
<i>Content**</i>	<i>2.00a</i>	<i>0.68b</i>	<i>1.00b</i>
Disappointed	0.42b	1.89a	1.21ab
<i>Disgusted</i>	<i>0.15b</i>	<i>1.21a</i>	<i>1.00a</i>
<i>Fulfilling</i>	<i>1.52a</i>	<i>0.32b</i>	<i>0.68b</i>
<i>Good</i>	<i>1.84a</i>	<i>0.53b</i>	<i>1.11b</i>
In Control	1.16a	0.37b	1.00ab
Motivated	1.26a	0.53b	0.79ab
<i>Pleasant</i>	<i>1.53a</i>	<i>0.53b</i>	<i>0.79b</i>
<i>Pleased</i>	<i>2.00a</i>	<i>0.47b</i>	<i>1.00b</i>
Rewarded	1.11a	0.37b	0.68ab
<i>Satisfied</i>	<i>2.26a</i>	<i>0.37c</i>	<i>1.21b</i>
Soothing	1.53a	0.58b	0.95ab
Warm	2.05a	1.00b	1.58ab

*Common letter in each row indicates no statistical difference at $p \geq 0.05$

***Italicized data indicates emotions that are particularly relevant and discussed*

Cluster 2 scored Temple coffee the highest for liking, familiarity and buying, and Folgers the least. The 44-emotion PCA plot (Figure 1) shows that Temple coffee (TempleCL2) is positively correlated to emotions like *special*, *pleasant*, *soothing*, and *content* while there were no significant positive emotions for Dunkin and Folgers. Means separation analysis for cluster 2 also reflected this finding – Temple was rated strongly for a number of emotions, the highest being *comfortable*, *content*, *curious*, *peaceful*, *pleasant*, *relaxed*, *special*, and *soothing* (Table 4). The emotions of *good*, *pleased*, and *satisfied* were the most significant ($p < 0.05$) and closely related to the liking scores for the three coffees.

Table 7.4: Significant emotion terms for cluster 2 consumers

Attributes & Emotions	Coffee Samples		
	Folgers	Dunkin	Temple
Active	0.28b	0.55ab	0.95a
Annoyed	1.43a	0.63b	0.10b
Balanced	0.43b	0.73ab	1.29a
Boosted	0.48b	0.77ab	1.29a
Bored	0.71a	0.46ab	0.05b
Clear minded	0.67b	0.91ab	1.67a
<i>Comfortable**</i>	<i>0.43b</i>	<i>0.91b</i>	<i>1.76a</i>
<i>Content</i>	<i>0.52b</i>	<i>0.95b</i>	<i>2.00a</i>
<i>Curious</i>	<i>0.81b</i>	<i>0.77b</i>	<i>1.48a</i>
Disappointed	2.10a	1.18b	0.19c
Disgusted	1.71a	0.45b	0.00b
Empowering	0.24b	0.36b	0.90a
Energetic	0.48b	0.86ab	1.33a
Fulfilling	0.29b	0.55b	1.52a
Fun	0.14b	0.41b	0.95a
<i>Good</i>	<i>0.28c</i>	<i>0.82b</i>	<i>1.86a</i>
Grouchy	0.95a	0.32b	0.05b
In Control	0.57b	0.86ab	1.48a
Joyful	0.10b	0.41b	0.90a
Merry	0.05b	0.41b	1.14a
Motivated	0.28b	0.59b	1.14a
Nervous	0.43a	0.23ab	0.05b
Off-balance	0.62a	0.14b	0.05b
<i>Peaceful</i>	<i>0.29b</i>	<i>0.73b</i>	<i>1.62a</i>
<i>Pleasant</i>	<i>0.29b</i>	<i>0.73b</i>	<i>1.91a</i>
<i>Pleased</i>	<i>0.19c</i>	<i>1.00b</i>	<i>1.76a</i>
Productive	0.48b	0.55b	1.24a
<i>Relaxed</i>	<i>0.48b</i>	<i>0.77b</i>	<i>1.90a</i>
Rested	0.33b	0.45b	1.10a
Rewarded	0.24b	0.45b	1.19a
<i>Satisfied</i>	<i>0.19c</i>	<i>0.95b</i>	<i>1.90a</i>
Social	0.33b	0.45b	1.33a
<i>Soothing</i>	<i>0.19b</i>	<i>0.72b</i>	<i>1.62a</i>
<i>Special</i>	<i>0.10b</i>	<i>0.23b</i>	<i>0.86a</i>
Understanding	0.33b	0.59ab	1.14a
Warm	0.95b	1.64ab	2.29a

*Common letter in each row indicates no statistical difference at $p \geq 0.05$

***Italicized data indicates emotions that are particularly relevant and discussed*

Cluster 3 gave acceptable liking scores to all three coffees (Table 1), with Temple and Dunkin preferred more than Folgers. Consumers in this cluster indicated that all three were “slightly familiar.” They were slightly more willing to buy Temple coffee as compared to the rest. The PCA plot (Figure 1) indicated that Cluster 3’s emotions for Dunkin Donuts and Temple were near *merry, peaceful, warm, balanced, relaxed, boosted, and motivated*. Out of all the emotions, these consumers gave the highest scores for the emotion terms of *good, satisfied, and comfortable* (Table 5).

Table 7.5: Significant emotion terms for cluster 3 consumers

Attributes & Emotions	Coffee Samples		
	Folgers	Dunkin	Temple
<i>Clear minded**</i>	1.46b	1.75ab	2.33a
<i>Comfortable</i>	1.82b	2.14ab	2.56a
Content	1.43b	2.11a	2.30a
Disgusted	0.50a	0.32ab	0.4b
Fulfilling	1.29b	1.89a	2.19a
<i>Good</i>	1.79b	2.25ab	2.41a
<i>Merry</i>	0.86b	1.57a	1.59a
Motivated	1.25b	1.82ab	2.07a
Off-balance	0.64a	0.29ab	0.15b
<i>Peaceful</i>	1.21b	2.07a	2.15a
Pleasant	1.50b	2.11a	2.33a
<i>Pleased</i>	1.46b	2.29a	2.37a
<i>Relaxed</i>	1.21b	2.04a	1.96a
Rewarded	0.96b	1.61a	1.81a
<i>Satisfied</i>	1.57b	2.29a	2.59a
Soothing	1.11b	2.18a	2.11a
<i>Special</i>	0.57b	1.07ab	1.37a

*Common letter in each row indicates no statistical difference at $p \geq 0.05$

***Italicized data indicates emotions that are particularly relevant and discussed*

Folgers was rated lower than Dunkin and Temple for all positive emotions, with the most distinct difference being in the term *special*, followed by *peaceful, pleased, relaxed, and merry*. Temple and Dunkin were very similar in most emotions, with Temple eliciting slightly higher scores for *comfortable, clear-minded, and special*. Cluster 3 had significantly higher ($p < 0.10$)

average liking and emotion scores than all the other clusters. This reflects the findings of Bhumiratana et al. (2014) that there is a strong relationship between higher liking scores and the emotions evoked by the coffee drinking experience.

Cluster 4 had the highest scores for the Dunkin sample in all three categories of liking, familiarity, and willingness to buy (Table 1). Dunkin also showed the highest valence for positive emotions on the PCA plots (Figure 1). Folgers and Temple were disliked equally by this group and were associated with negative emotions like *nervous*, *worried*, and *guilty* on the PCA plot. As expected, Dunkin Donuts sample was significantly higher ($p < 0.10$) for all positive emotions, with the highest-scored being *comfortable*, *content*, *energetic*, *good*, *pleasant*, *pleased*, *satisfied*, and *soothing* (Table 6). Similarly, as for other clusters, the results from this cluster also show positive relationship between like/dislike and positive/negative emotions (Bhumiratana et al. 2014).

Table 7.6: Significant emotion terms for cluster 4 consumers

Attributes & Emotions	Coffee Samples		
	Folgers	Dunkin	Temple
Active	1.38ab	1.79a	1.00b
Annoyed	1.25a	0.13b	0.78a
Awake	1.92ab	2.54a	1.39b
Balanced	1.08b	2.08a	1.17b
Boosted	1.08b	2.21a	1.09b
Bored	0.58ab	0.25b	1.00a
Clear Minded	1.42b	2.29a	1.48ab
Comfortable	1.54b	2.75a	1.43b
<i>Content**</i>	<i>1.13b</i>	<i>2.63a</i>	<i>1.09b</i>
<i>Disappointed</i>	<i>2.04a</i>	<i>0.13b</i>	<i>1.87a</i>
<i>Disgusted</i>	<i>1.29a</i>	<i>0.00b</i>	<i>0.83a</i>
Empowering	0.75b	1.63a	0.83b
<i>Energetic</i>	<i>1.25b</i>	<i>2.9a</i>	<i>1.04b</i>
Free	1.04ab	1.67a	0.83b
Fulfilling	0.92b	2.38a	0.96b
Fun	0.83b	1.54a	0.57b
<i>Good</i>	<i>1.13b</i>	<i>2.88a</i>	<i>1.39b</i>
Grouchy	0.88a	0.04b	0.61ab
In Control	1.29b	2.08a	1.35ab
Joyful	0.83b	1.71a	0.96b
Merry	0.67b	1.5a	0.87ab
Motivated	0.88b	2.04a	1.09b
Off-balance	0.75a	0.00b	0.96a
Peaceful	0.88b	1.96a	1.22ab
<i>Pleasant</i>	<i>0.96b</i>	<i>2.29a</i>	<i>1.17b</i>
<i>Pleased</i>	<i>0.92b</i>	<i>2.67a</i>	<i>0.83b</i>
Productive	1.17b	2.13a	1.17b
Relaxed	1.25b	2.29a	1.43b
Rewarded	0.83b	2.21a	0.71b
<i>Satisfied</i>	<i>0.96b</i>	<i>2.67a</i>	<i>1.09b</i>
Social	1.13b	2.17a	1.00b
<i>Soothing</i>	<i>0.83b</i>	<i>2.21a</i>	<i>1.00b</i>
Special	0.46b	1.25a	0.65ab
Understanding	1.08ab	1.83a	0.74b
Warm	1.96ab	2.67a	1.65b

*Common letter in each row indicates no statistical difference at $p \geq 0.05$

***Italicized data indicates emotions that are particularly relevant and discussed*

Characteristics of Coffee Consumers

The coffee habits questionnaire was created to understand more about the coffee habits, preferences, conceptions, and identities of the different participants. In addition to providing a useful framework to understand more about the 4 identified clusters, the data also revealed specific demographic correlations with gender and drinking habits.

Within these participants there were significant gender differences found for coffee preferences. Men (n=34) were significantly more likely ($p < 0.0001$) to drink their coffee black, to drink coffee more frequently ($p < 0.02$), to drink more cups of coffee per day ($p < 0.001$). Women (n=69) were more likely to say that they “like to add a lot of cream and sugar to their coffee” ($p < 0.0003$), to agree with the statement “I can’t function without coffee in the morning” ($p < 0.01$); and also to agree with the statement “I care a lot about the caffeine in coffee” ($p < 0.02$).

Twenty two participants chose to take their coffee black. Black coffee drinkers drink coffee more frequently than those who add condiments. Out of the 10 participants that indicated they consume four or more cups per day, seven were black coffee drinkers. Black coffee drinkers were more likely to like dark roast coffee ($p < 0.008$) and drink coffee at work ($p < 0.001$) than those who added condiments to their coffee. Drinking coffee black was also somewhat related with the use of whole beans ($p < 0.09$) and self-identifying as a connoisseur ($p < 0.05$).

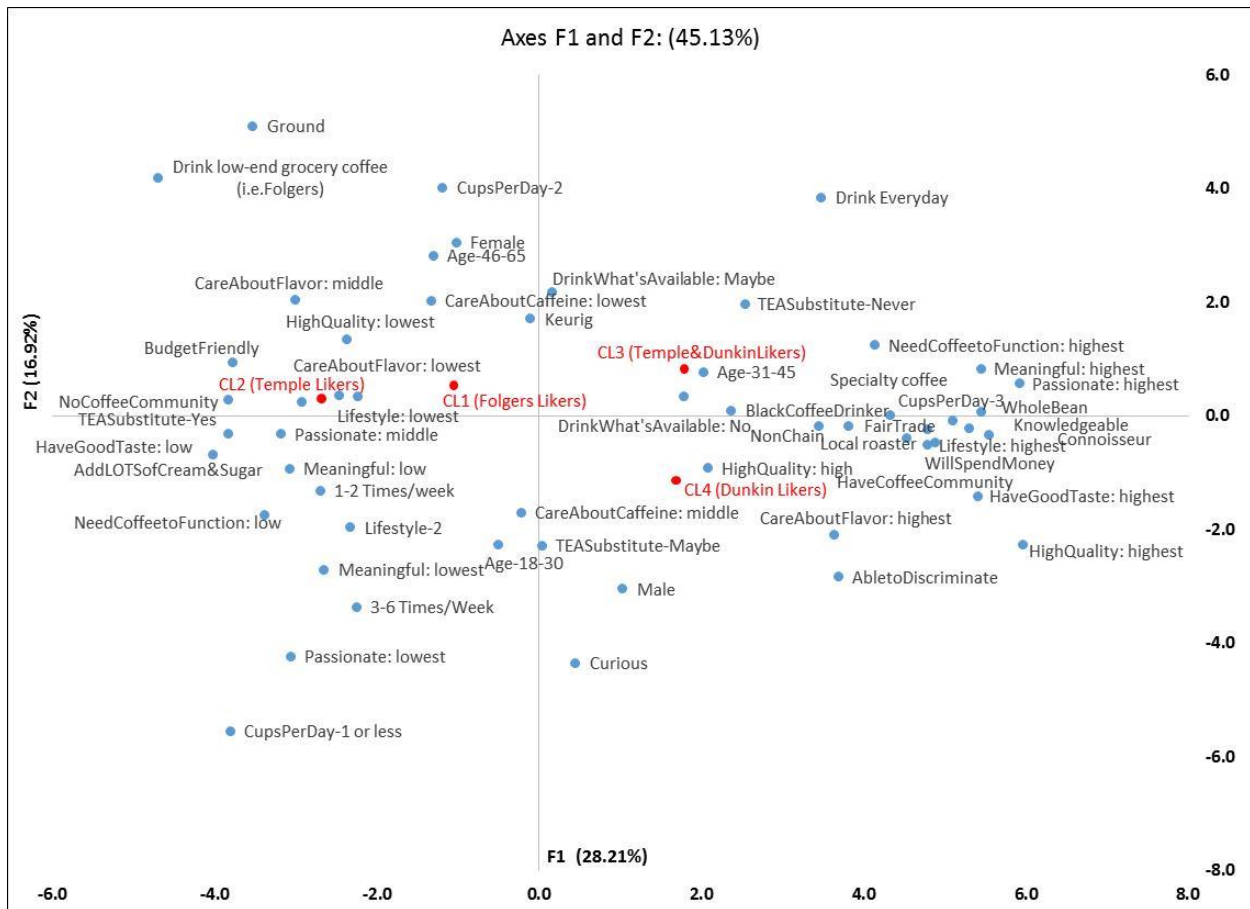


Figure 7.2. MCA Plot correlating the 4 significant clusters with participant information about consumption habits and preferences

An MCA plot (Figure 2) was created using the 4 clusters and information from the coffee habits questionnaire. The plot is visually divided based on how much participants care about their coffee. Traits that cluster to the left side of the plot are indicative of not caring a lot about coffee – adding lots of cream and sugar, being willing to substitute coffee for tea, not finding coffee to be meaningful, being less passionate about coffee, not drinking high-quality coffee, choosing budget-friendly coffee, being able to function without coffee, not caring about caffeine, and not feeling that coffee is a lifestyle. Traits that cluster in the right half of the plot show a lot more interest and involvement in coffee – being unwilling to substitute coffee for tea, caring strongly about flavor, finding coffee very meaningful, being able to discriminate, being highly

passionate about coffee, seeking out non-chain and specialty coffee, being willing to spend money on coffee, and not drinking any coffee that is available.

The layout of these demographics offers an interesting look at the spread of consumer conceptions about coffee. While Labbe et al. (2015) observed that flavor and caffeine are two separate and unique factors to motivate coffee consumption this plot indicates that “desire for sensory experience” and “desire for energy” may be correlated. The traits of caring about flavor, drinking coffee black, and drinking specialty coffee were strongly associated with needing coffee to function and also drinking 3 or more cups per day—attributes that are indicative of consumers seeking out coffee for the caffeine. There does not appear to be a substantial number of consumers that just drink coffee only to wake up or only for the sensory experience. In fact, those who really enjoy coffee appear to appreciate the overall coffee experience including both flavor and caffeine.

Coffee Connoisseurs

In addition to being asked questions about their coffee consumption and conceptions, participants were asked to indicate whether or not they identified as a coffee connoisseur. This MCA plot (Figure 2) reveals that the self-identified connoisseurs are correlated with being knowledgeable about coffee, using whole bean for making coffee, feeling that coffee is a lifestyle, and belonging to a local coffee community. Additionally, they are associated with drinking 3 or more cups of coffee per day, being willing to spend money on coffee, and seeking out fair trade coffee and independent (non-chain) coffee shops. Many of these concepts were also brought up in the prior focus groups, specifically having knowledge about coffee and the willingness to pay extra for good coffee.

The MCA plot also backs ethnomethodological research about how taste, specifically the acquisition of taste through extensive investments of time and money, is the primary focus of self-identified coffee connoisseurs (Manzo, 2010). However, it is interesting to note that while the MCA plot displayed visual correlations between connoisseurship and a number of indicators of seeking high-quality coffee, only 7 of the 23 self-identified connoisseurs used whole beans and only nine drank their coffee black, with five consumers common in both of those categories. According to Manzo (2010) true “coffee hobbyists” describe their refined palate for coffee as “burdensome” and prone to cause tension in their personal relationships, indicating that coffee is an extremely high priority in their lives (Manzo, 2010). However, Roseberry (1996) noted that interest in coffee was growing as specialty coffee and coffee culture becomes increasingly more accessible, and one no longer has to be a gourmet to feel or act like one. Coffee could be an opportunity for middle-class consumers to cultivate and display “taste” and “discrimination” as they seek out distinct, “authentic”, good-quality coffee (Roseberry, 1996). Those who choose to identify with connoisseurship can enjoy a form of cultural capital, based around acquiring and sharing coffee knowledge (Bookman, 2013). In both the focus groups and these consumer tests, participants who self-identified as connoisseurs perhaps would not fit the traditional definition, implying that their self-identification may have been motivated by a desire to be a connoisseur rather than actually having the knowledge and experience to qualify.

Coffee Conceptions in Each Cluster

Cluster 1 and Cluster 2 are found on the left half of the plot which indicates both do not feel strongly about coffee. This is explainable in the context of their low average emotion scores for all three coffees. Cluster 1 is somewhat related to not drinking high-quality coffee and the lowest score for caring about flavor, indicating general indifference to coffee. Cluster 2 is

correlated with being willing to substitute coffee for tea, the lowest score for caring about flavor, not having a coffee community and drinking budget-friendly coffee. Further, Cluster 2 is also correlated with adding lots of cream and sugar, indicating that perhaps this cluster simply does not like the flavor of coffee, explaining why they scored Temple 2.5 points higher than the other two coffees. As mentioned before, this might have been caused by Temple's less-concentrated and milder flavor due to the processing mistake.

Cluster 3 "Coffee Lovers" and Cluster 4 "Dunkin Drinkers" were found on the right half of the plot, indicating that these consumers care more about coffee. They were both more likely to buy coffee online or at a gourmet store and to drink black coffee. Cluster 3 is correlated with ages 31-45, would never substitute coffee for tea, and is interestingly sandwiched in between "not drinking whatever's available" and "maybe drinking whatever's available." Cluster 3's location on the plot indicates that they value good coffee, but the fact that Cluster 3 gave higher average liking and emotion scores than all the other clusters, and the fact that they would never substitute coffee for tea indicates that they are passionate about coffee in general. It is also evident that Cluster 3 appreciates high-quality coffees because they gave higher liking scores to Temple and Dunkin but their liking for Folgers as well means that they still derive pleasure from all types of coffee, which may explain their apparent indecision about drinking any coffee that is available.

Cluster 4 was correlated with the highest score for caring about flavor and a high score for consuming high-quality coffee. They gave a neutral score to the question "do you care about the caffeine in coffee?" and were somewhat correlated with maybe substituting coffee for tea and also being able to discriminate. This cluster appears to care about coffee but in a more picky way than the all-encompassing enthusiastic Cluster 3.

Identities

As part of the coffee habits questionnaire, participants were asked to write down a single word that described their identity in context of coffee. Their written identity terms were grouped into several overarching categories or themes: Addict, Casual, Coffee Preference, Commitment, Curiosity, Discernment, Emotion, Frequency, Habit, Love, Pleasure, and Typical. Each of these categories had a minimum of 5 participants and a maximum of 16. The terms Addict, Casual, Curiosity, Habit, Love, and Social were based on participants writing those exact words or variations of these words. The category Coffee Preference encompassed participant responses like “warm” and “strong”, while Commitment grouped together terms like “dedicated” and “loyal”, Discernment “expert” and “choosey”, Emotion “calm” and “comfortable”, Frequency “daily” and “regular”, Pleasure “enjoy” and “satisfied”, and Typical “average” and “normal”. Figure 5 shows a PCA plot showing the clusters with the participants’ self-indicated identities. It is interesting to note that the categories - Addict and Habit overlapped in the plot implying that their functional meaning was very similar.

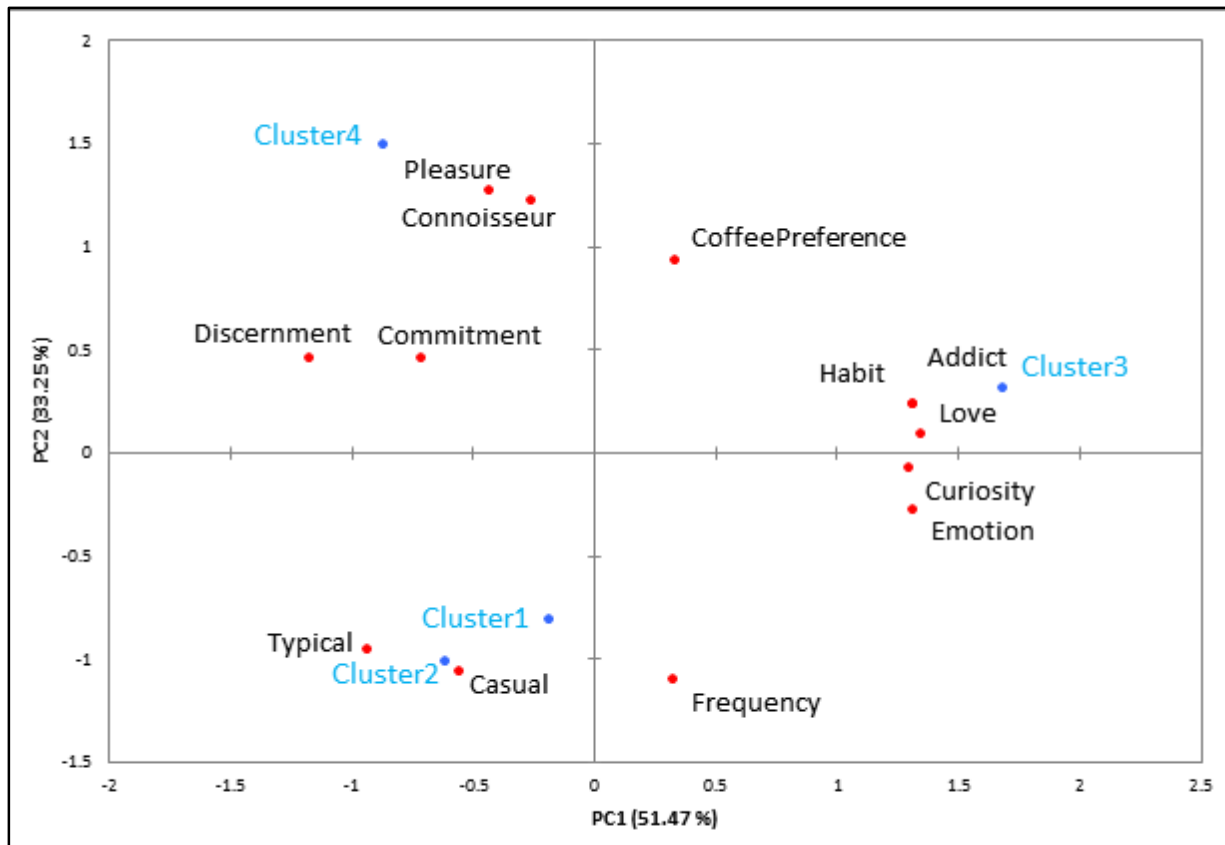


Figure 7.3. PCA correlating clusters with overarching themes of coffee self-identity

Clusters 1 and 2 appear to be correlated with the consumer identities Frequency, Typical, and Casual. These participants gave themselves the most mundane coffee-related identities as possible—they’re “normal/average” or “daily/moderate/regular” coffee drinkers and have very little else to say about their coffee consumption. This supports data from both the MCA plot and average emotion scores indicating that both cluster 1 and 2 have little investment in their coffee. Cluster 1 will henceforth be referred to as “typical coffee drinkers” due to their self-identity and the fact that Folgers is the leading brand of coffee in the U.S. (Wong, 2013). Cluster 2 will be termed “uninterested coffee drinkers,” as they don’t appear to like the flavor of coffee and many identify as casual coffee drinkers.

Cluster 3, or the “coffee-lovers”, are closely correlated with the identity category of Love as many of these participants wrote “lover”, or “love it!” Additionally, Cluster 3 is related to the functionally identical concepts of Addict and Habit, indicating that their enthusiasm and emotion for coffee may be closely related to their chemical dependence on caffeine. Cluster 3 is also related to Curiosity and Emotion. This cluster appears to be the true coffee enthusiasts, with their self-ascribed identities indicating passion, interest, and addiction.

Cluster 4 consists of self-identified Connoisseurs that drink coffee for Pleasure and is somewhat correlated with Discernment and Commitment, or being choosy about coffees and being a loyal coffee drinker. As Temple coffee ended up being less concentrated than intended, this group recognized Dunkin Donuts as the “best”, as indicated by their liking scores and correlation with the strongest positive emotions. They also share the interest and caring about coffee of Cluster 3, but are more serious about coffee and enjoy high-quality coffees, earning them the title of “coffee snobs.”

Consumer clusters found in the literature reflect a similar division based on caring about coffee, specifically coffee flavor. Geel, Kinnear, and de Kock (2005) generated four clusters using preference mapping to relate qualities of coffee to consumer preferences for instant coffees. These clusters were “pure coffee lovers” who enjoyed full-bodied strong complex flavors, “coffee blend drinkers” who liked less intense coffee flavor and higher sweetness, “general coffee drinkers” who consumed coffee out of habit and were less concerned about the sensory properties of coffee, and, lastly, “not serious coffee drinkers.” These four clusters also demonstrate a wide variance in seeking out and prioritizing flavor and quality.

Conclusions

Caring about coffee is a spectrum and consumers can be categorized based on their degree of interest in and commitment to coffee. In this research four consumer segments were identified—Cluster 1 “typical coffee drinkers” that prefer Folgers coffee and feel generally indifferent to coffee, Cluster 2 “uninterested 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, and Cluster 4 “coffee snobs” that care strongly about flavor and are picky and discriminative about their coffee.

In general, participants who value good coffee are correlated with having a coffee community, considering coffee to be a lifestyle, finding coffee to be meaningful, being passionate about coffee, being able to discriminate, spending money on coffee, and consuming three or more cups per day. Many consumer test participants who self-identified as connoisseurs did not drink whole bean coffee or take their coffee black, indicating that their selected identity may be saying more about what they wish to convey to others rather than their true commitment to high-quality coffee.

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CHAPTER 8

CONCLUSION

The intent of this project was to better understand different kinds of coffee consumers, with a particular focus on self-identified “connoisseurs.” One objective was to learn more about coffee connoisseurship through examining consumers’ emotions in response to different qualities of coffee. However, a processing error with Temple coffee led to a weaker cup of coffee, which impacted the way this high-quality specialty coffee was perceived during the emotional consumer tests. While Folgers was the least-liked coffee and received high scores for negative emotions and low scores for positive emotions, there was minimal liking and emotional differentiation between Dunkin and Temple. As consumers did not appear to be distinguishing between these two coffees the focus of this project moved towards consumer segmentation and the concept of coffee involvement.

It is easy to conceptualize connoisseurs as an elite, separate group of consumers that are deeply dedicated to coffee. Hypothetical connoisseurs would congregate at fancy coffee shops sipping tall mugs of black coffee and chatting about countries of origin, roasting process, and bean freshness. And in fact a trip to the local roaster revealed coffee drinkers doing exactly that. However those not all coffee drinkers who identify as connoisseurs demonstrate behaviors one might associate with coffee snobbery.

One assumption made prior to this research was that people would understand the term connoisseur to mean someone who invested a lot of time and energy into good coffee. Due to this assumption, focus groups were intentionally not provided with a definition for “connoisseur” when they were asked if they self-identified as such. Some self-identified connoisseurs loved

chicory coffee, others purchased Gevalia and then added a half cup of flavored creamer, while others proudly proclaimed to be able to tell the difference between Folgers Instant and Folgers classic roast ground. Other participants, most notably coffee-drinkers that were deeply involved in the coffee world, chose not to use the term connoisseur because they felt they weren't sufficiently informed about coffee. It was apparent that consumers self-chosen identities were not a reliable source of data about their actual passion and interest in coffee quality.

Originally this project aimed to identify definitive traits that separated a "connoisseur" from an every-day coffee drinker or "common-seur." The focus groups and consumer tests made it clear that not only is self-identification a poor way to gather certain types of coffee consumers, but consumer interest in coffee is more of a spectrum than a binary. Consumer segmentation was a useful approach to accomplish the original goal of identifying differences between consumers who "care about coffee" from those who don't. Four clusters were identified: "typical coffee drinkers", "uninterested coffee drinkers", "coffee lovers", and "coffee snobs". These clusters, along with the MCA plot generated from the consumer data, revealed that consumers fell along a range of coffee involvement. The clusters of "typical coffee drinkers" and "uninterested coffee drinkers" were not particularly involved with coffee and did not consider it to be a high priority while "coffee lovers" had high liking and emotion scores for all coffees and "coffee snobs" were discerning and choosy about their coffee.

In conclusion, coffee drinkers exhibit a wide spectrum of coffee involvement and identifying as a connoisseur does not correlate to any particular coffee consumption habits or thoughts. This research revealed interesting things about gender differences in coffee consumption, as well as traits of black coffee drinkers. Based on the significant emotions of all

four consumer clusters, we learned what emotions are most important to coffee consumers. This project was successful in its endeavor to unwrap more about different kinds of coffee consumers.

Appendix A
FOCUS GROUP MODERATOR'S GUIDE

Hello, my name is Erica. Welcome and thank you for coming. I'm a graduate student in Dr. Adhikari's lab and I'm doing my thesis project on the psychology of coffee drinkers.

We have invited you here today for a focus group so I can learn more about your thoughts and feelings about coffee. I hope that you have all signed your forms. The pink copy is yours to keep and we will take the white copy. You may have noticed that it states we will pay you \$15. I have exciting news—we will actually be paying you \$20. If everybody has consented to audio recording I'll go ahead and start.

This will be an hour long focus group session. During this time I ask that you be open and honest in sharing your experiences and opinions. Please share how you truly feel, even if you're not the same as the rest of the group.

At the beginning of this focus group I will ask you a few quick questions to gather information about your coffee drinking habits and coffee choices, and in the last part of the focus group I will ask you some bigger questions about your thoughts and feelings. Please speak clearly, one at a time. And please share all your side conversation with the rest of the group, not only with your neighbor. We tape record the sessions so be sure to say aloud what you feel.

Let's start this discussion by introducing yourself by your first name and tell us:

What is your favorite coffee and what is it that you like about it?

Let's talk about your drinking routine and habit.

When do you drink coffee?

Do you make your own coffee? If so, how do you make it?

Do you add milk or sweeteners to your coffee?

What are the sensations you look for when drinking a cup of coffee?

What is a good cup of coffee? What might it look like, smell like, and taste like?

What is a bad cup of coffee?

Now let's talk about your coffee drinking choices

Why do you drink coffee?

Is coffee quality important to you?

What attributes are you looking for when you choose a coffee to purchase?

What is one bad type of coffee that I could find in a grocery store?

What is one good type of coffee that I could find in a grocery store?

Now let's talk about how you feel about coffee

How important is coffee in your life?

What influenced you to start drinking coffee?

Is the flavor of coffee important to you?

Do you like to learn about coffee?

Do you like to try new coffees?

Do you identify as a coffee connoisseur, aficionado, or enthusiast? If so, why? If not, why not?

Are you snobbish about your choice of coffee?

How do you feel when you drink a good cup of coffee?

How do you feel when you drink a bad cup of coffee?

Conclusion

Thank you so much for your contributions today. (Make a statement to summarize what has been said so far)

It's about time for us to wrap up. Does anybody have any final remarks? We really appreciate you sharing your thoughts.

Appendix B
CONSUMER TEST RECRUITMENT SCREENER

1. How old are you?
 - a. Under 18 (automatically disqualify)
 - b. 18-24
 - c. 25-34
 - d. 35-44
 - e. 45-55
 - f. 55-65
 - g. 65+

2. Which of the following products have you consumed in the past month?
 - a. Soda
 - b. Fruit Juice
 - c. Energy drinks
 - d. Coffee (if no, automatic disqualification)
 - e. Tea
 - f. Kombucha (go to #3, otherwise skip to #4)

3. What flavors of kombucha do you like?
 - a. Chocolate (automatic disqualification)
 - b. Vanilla (automatic disqualification)
 - c. Ginger
 - d. Berry
 - e. None of these or have not tried kombucha

4. Are you comfortable sharing your thoughts and feelings about certain types of products?
 - a. Yes
 - b. No

5. How would you make tea at home?
 - a. Loose leaf
 - b. Tea bag
 - c. Instant tea

6. What is your favorite kind of tea? _____

7. Which of these teas have you tried?
 - a. Yerba mate
 - b. Azuki (automatic disqualification)
 - c. Oolong

- d. Rooibos
 - e. Konjac (automatic disqualification)
 - f. None of these
8. If given a choice between tea or coffee in the morning, which would you choose?
- a. Tea (automatically disqualify)
 - b. Coffee
9. Do you drink coffee at home?
- a. Yes (direct to #7)
 - b. No (direct to #8)
10. What type of coffee do you drink at home?
- a. Whole bean coffee
 - b. Ground bean coffee
 - c. Instant coffee
 - d. Keurig pods
11. Where do you get your coffee?
- a. At work
 - b. Dunkin Donuts
 - c. Starbucks
 - d. McDonalds
 - e. Gas station
 - f. Other _____
12. In general, how often do you drink coffee?
- a. Less than once per week (automatically disqualify)
 - b. Once per week (automatically disqualify)
 - c. A few times per week
 - d. Three or more times per week
 - e. Every day
 - f. Multiple times per day
 - g. Nonstop
13. Congratulations you've been selected!
- Name (optional) _____ Phone number _____ Email _____

Appendix C
CONSUMER TEST TELEPHONE SCRIPT

- 1) Hello, my name is _____ and I am calling from the University of Georgia. We received your results from our online survey and would like to tell you a little bit more about our test. Is this a good time for you to talk?
 - a. If the person says yes and gives consent, proceed to #2.
 - b. If the person says no then respond with, “When is a good time for me to call you?”
- 2) There is a possibility that some of these questions may make you uncomfortable or distressed; if so, please let me know. You don’t have to answer those questions if you don’t want to. All information that I receive from you during this phone interview, including your name and any other information that can possibly identify you, will be strictly confidential and will be kept under lock and key. Remember, your participation is voluntary; you can refuse to answer any questions, or stop this phone interview at any time without penalty or loss of benefits to which you are otherwise entitled.
- 3) At the end of this interview, we will tell you if you qualify or not to participate in the study. If you don’t qualify, all the information you gave me will be immediately destroyed.
- 4) The purpose of this study is to learn more about different kinds of people that drink coffee. Participants in this study will be asked to come to a 45 minute long consumer test and answer questions about their identities and emotions while drinking coffee. Does this sound like something you would be interested in participating in? (if they say no, kindly hang up)
- 5) The basic plan for this study is that you will come to the UGA Griffin campus to answer some questions about how you feel about coffee. We will invite 10 people at a time to sit in separate booths and answer questions using a computer. You will be served different types of coffee with your preferred amount of cream and sugar and asked about what emotions you experience while drinking the coffee. After that you will be asked about your coffee drinking habits and coffee identity. The whole test should take between half an hour to an hour.
- 6) During the emotional test you may feel like the questions are hard and ask a lot of you. For every coffee you will be asked to rate your emotions. Would you still be willing to participate in this test even if there may be some challenging questions that require you to think deeply about your emotions, coffee habits and identity?
- 7) If you are selected for this study you will be paid with \$20 in cash. I hope that you will enjoy the experience of drinking different coffees and answering questions. Your participation in this study may not have direct benefits to you, however your participation will allow coffee roasters and coffee companies to make informed decisions to increase their consumer satisfaction. Do you still want to participate?
 - a. If they say yes to all the previous questions; tell them they have passed and lead them to question 13.

- b. If they said no to any other previous questions, thank them for their time and kindly hang up the phone.
- 8) The dates and times we have available are during Tuesday, Wednesday, or Thursday January 26th, 27th, and 28th at either 10-11, 12-1, 3:30-4:30 or 5:30-6:30. Which of these times would you prefer? (circle)
- 9) Thank you. I have one last question for you. How do you normally take your coffee? That is, what do you normally put in your coffee? (clarify to determine type and quantity of add-ins in 8oz cup)

Creamer (type and quantity): _____

Sweetener (type and quantity): _____

- 10) Thank you. We look forward to seeing you on (date). If you have any questions about this research project, please feel free to call me at 770-412-4747 ex: 230. Questions or concerns about your rights as a research participant should be directed to Institutional Review Board, telephone number (706) 542-3199; email address irb@uga.edu.

Appendix D
COFFEE SAMPLE QUESTIONNAIRE

Sample # _____

Think about the last occasion when you drank coffee. Spend a little time while thinking about that coffee drinking experience. What did the coffee smell like and taste like? How did it make you feel?

Continue to think about this occasion throughout this session.
Now please smell the coffee and inhale the aroma.
Now please take a sip and rate the sample.

How much do you LIKE the coffee you are drinking?

Dislike extremely	Dislike very much	Dislike moderately	Dislike slightly	Neither like nor dislike	Like slightly	Like moderately	Like very much	Like extremely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How FAMILIAR are you with the coffee you are drinking?

Very unfamiliar	Moderately unfamiliar	Slightly unfamiliar	Neither familiar nor unfamiliar	Slightly familiar	Moderately familiar	Very familiar
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As you drink the coffee sample _____ how does it make you feel?
 Please rate the emotions that are relevant to your experience drinking this coffee, using the scale below with “0” representing “not at all” and “4” representing “extremely.”

Feelings	Not at all	Slightly	Moderately	Very	Extremely	Feelings	Not at all	Slightly	Moderately	Very	Extremely
Grouchy	0	1	2	3	4	Pleased	0	1	2	3	4
In control	0	1	2	3	4	Free	0	1	2	3	4
Joyful	0	1	2	3	4	Jump start	0	1	2	3	4
Educated	0	1	2	3	4	Relaxed	0	1	2	3	4
Wild	0	1	2	3	4	Fulfilling	0	1	2	3	4
Active	0	1	2	3	4	Understanding	0	1	2	3	4
Boosted	0	1	2	3	4	Social	0	1	2	3	4
Satisfied	0	1	2	3	4	Balanced	0	1	2	3	4
Curious	0	1	2	3	4	Nervous	0	1	2	3	4
Guilty	0	1	2	3	4	Annoyed	0	1	2	3	4
Merry	0	1	2	3	4	Worried	0	1	2	3	4
Peaceful	0	1	2	3	4	Energetic	0	1	2	3	4
Disappointed	0	1	2	3	4	Rested	0	1	2	3	4
Special	0	1	2	3	4	Soothing	0	1	2	3	4
Pleasant	0	1	2	3	4	Jolted	0	1	2	3	4
Content	0	1	2	3	4	Productive	0	1	2	3	4
Bored	0	1	2	3	4	Rewarded	0	1	2	3	4
Fun	0	1	2	3	4	Empowering	0	1	2	3	4
Awake	0	1	2	3	4	Clear minded	0	1	2	3	4
Motivated	0	1	2	3	4	Good	0	1	2	3	4
Off-balance	0	1	2	3	4	Disgusted	0	1	2	3	4
Warm	0	1	2	3	4	Comfortable	0	1	2	3	4

How likely are you to buy a 12 oz bag of this coffee for \$11.54?

Very unlikely	Somewhat unlikely	Undecided	Somewhat likely	Very likely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you!

Please return these papers with the rest of your coffee sample. Press the white “Done” button to indicate when you are ready to receive your next sample. Press “Help” if you have any questions.

Appendix E
COFFEE HABITS QUESTIONNAIRE

1. Please indicate HOW OFTEN you drink coffee: Panelist #: _____
- 1-2 times a week
 - 3-6 times a week
 - Every day/7 times a week
2. Please indicate HOW MANY cups of coffee you drink per day:
- One or fewer cups per day
 - 2 cups per day
 - 3 cups per day
 - 4 or more cups per day
3. Please indicate WHERE you regularly obtain hot/brewed coffee (regularly: at least once per month). Check all that apply:
- Home
 - Work
 - Coffee Shop/Restaurant
 - Quick Shop/Vendor
 - Other, please specify _____
4. Do you brew coffee at home at least once per week?
- Yes No (skip to question 9)
5. WHAT BRAND of coffee are you currently using at home? _____
6. What kind of coffee do you usually buy?
- Whole bean coffee
 - Ground bean coffee
 - Keurig pods
 - Other, please specify _____
7. What type of coffee roast do you enjoy? (Select all that apply)
- Light/Mild Roast
 - Medium Roast
 - Dark/Bold Roast
 - Flavored (Hazelnut, caramel, cinnamon, etc)
8. Where do you buy your coffee beans/ground beans from?
- Local coffee shop
 - Grocery store/discount store
 - Specialty/gourmet store
 - Other, please specify _____

9. Indicate if the following statements describe your coffee drinking habits:

- | | | |
|--|------------------------------|-----------------------------|
| I like to add a lot of cream and/or sugar to my coffee | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| I regularly drink decaffeinated coffee | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| I try to purchase budget-friendly coffee | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| I try to purchase coffee with certifications like Fair Trade | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| I make an effort to go to non-chain or independent coffee shops instead of chain coffee shops like Dunkin Donuts/Starbucks | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

10. How frequently do you purchase a cup of coffee? (i.e. coffee shops, fast food restaurant, gas station)

- Less than once per month
- Once per month
- 2-3 times per month
- 4 times per month (once per week)
- Multiple times per week

11. If you add cream, which of the following creams do you add?

- Dairy (Milk, half & half, etc.)
- Alternative, non-dairy milk (almond, soy, etc)
- Non-dairy creamer (unflavored/plain)
- Non-dairy creamer (flavored)
- Other, please specify _____
- No, I do not add cream

12. If you add sweetener, which of the following sweeteners do you add?

- Sugar
- Natural sugar alternative (i.e. Stevia/Truvia)
- Artificial sweetener (i.e. Spenda, Sweet&Low, Equal, etc)
- Other, please specify _____
- No, I do not add sweetener

13. Would you consider substituting your coffee with tea?

- Never
- Maybe
- Yes

14. Indicate how much you disagree or agree with the following statements from “strongly disagree” to “strongly agree”

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I care a lot about the FLAVOR of coffee.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I care a lot about the CAFFEINE in coffee.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can't function without coffee in the morning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee is meaningful & significant to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am passionate about coffee.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee drinking is a lifestyle .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I belong to a community of coffee drinkers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I drink whatever coffee is available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I drink high-quality coffees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Indicate if the following statements describe your coffee drinking identity:

I am curious about where my coffee comes from (i.e. country of origin).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I consider myself to be knowledgeable about coffee.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I am able to discriminate between different types of coffee.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I <i>don't like</i> to spend a lot of money on coffee	Yes <input type="checkbox"/>	No <input type="checkbox"/>

16. Write one word to describe yourself as a coffee drinker: _____

17. Do you consider yourself to be a coffee connoisseur?

Yes No

18. What kind of coffee drinker are you? Check as many words as you feel apply to you, and feel free to write more if you wish:

- Enthusiast
- Addict
- Snob
- Aficionado

- Habitual
- Coffee lover
- Adventurer
- Experimental
- Social
- Gourmand
- Foodie
- Average/Typical
- Traditional
- Curious

Demographic Questions

1. Gender:

- Male
- Female
- Transgender

2. Age:

- 18 to 30
- 31 to 45
- 46 to 65
- Above 65

3. Educational Background:

- Grade School
- High School
- High School Graduate
- Some College
- Associate Degree
- Bachelor's Degree
- Master/Doctoral

4. What race or ethnicity do you identify as? (check as many as apply):

- White/Caucasian
- Black/African American
- Hispanic/Latino
- Asian
- Native American
- Other____

APPENDIX F

SAS CODE FOR HIERARCHICAL CLUSTER ANALYSIS

```
data coffee;
input consumer Temple DDonut Folgers;
datalines;
DATA DELETED
;

proc cluster data=coffee outtree=treew method=ward S pseudo std CCC;
id consumer;
Var Temple DDonut Folgers;
run;

proc tree data=treew nclusters=5 out= treeout sort;
id consumer; run;

Proc sort data= treeout;by consumer;run;

proc sort data=coffee; by consumer;run;

DATA COMB; MERGE coffee TREEOUT; BY consumer;run;

proc sort data=comb;
by cluster;
run;

proc print data=comb;
by cluster;
run;
```

APPENDIX G

SAS GLM CODE FOR ANOVA OF CLUSTERS

```

dm'log;clear;output;clear;';
data clus1;
input consumer$      Coffee$      Liking familiarity buy Active Annoyed      Awake
      Balanced      Boosted      Bored Clearminded Comfortable Content
      Curious      Disappointed Disgusted      Educated
Empowering Energetic      Free Fulfilling      Fun Good Grouchy      Guilty
      InControl      Jolted Joyful JumpStart      Merry Motivated      Nervous
      Offbalance      Peaceful      Pleasant
Pleased      Productive      Relaxed      Rested Rewarded      Satisfied      Social
      Soothing      SpecialUnderstanding Warm Wild      Worried;
cards;
DATA DELETED
;
ods rtf;
proc glm data=clus1;
class coffee consumer;
model Liking familiarity buy Active Annoyed      Awake Balanced      Boosted      Bored
      Clearminded Comfortable Content      Curious      Disappointed Disgusted
      Educated      Empowering Energetic      Free
Fulfilling      Fun Good Grouchy      Guilty InControl      Jolted Joyful JumpStart
      Merry Motivated      Nervous      Offbalance      Peaceful      Pleasant
      Pleased      Productive      Relaxed
Rested Rewarded      Satisfied      Social Soothing      SpecialUnderstanding Warm Wild
      Worried = coffee/ss3;
repeated consumer;
lsmeans coffee/pdiff lines adjust=tukey alpha=0.1;
run;
ods rtf close;
quit;

```