

Emotional Intelligence In Consumer Behavior:
Ability, Confidence and Calibration as Predictors of Performance

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(ABSTRACT)

The focus of this research is to examine the impact of emotional intelligence on consumer decision making. Several research goals are presented: 1) to develop and test a practical domain-specific scale of emotional ability, 2) to identify the influence of emotional ability on behavioral individual and group level performance in a consumer context, 3) and to identify how performance is further influenced by cognitive ability, cognitive and emotional confidence and calibration between perceived (i.e., confidence) and actual ability.

Three studies were conducted to meet these goals. Study 1 involved the development and validation of a consumer emotional ability scale (CEAS), based on four underlying emotional abilities (i.e., perceiving, facilitating, understanding, managing). This instrument allowed for further examination of how emotional intelligence affected performance among consumer relationships. A proposed conceptual model was examined in an individual (study 2) and small group (study 3) context using the CEAS scale, along with additional items to assess the influence of cognitive ability, cognitive and emotional confidence, and calibration on performance in the consumer domain of healthy food choices.

DEDICATION

This dissertation is dedicated to my wife Virginie, whose endless love and encouragement has given me the strength and fortitude to “press on” throughout this arduous process. She has been my guiding light and without her support, completion of this dissertation would not have been possible.

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CHAPTER 1

1.1 Introduction

Emotion is an essential component of judgment and decision-making (Gohm and Clore 2002; Schwarz and Clore 1996), in that it carries important information about who we are and how we interact with others (Gohm 2003). Despite the importance of emotion in our decisions, little is known about how emotions affect performance outcomes in marketing (see Bagozzi, Gopinath and Nyer 1999; Brown, Cron and Slocum 1997; Richins 1997). This research focuses on the role of emotional intelligence in the context of consumer decision making. Consumers' ability to recognize, understand, express, and manage emotions is examined, along with their confidence in these emotional abilities, and the calibration between confidence and accuracy of emotional abilities on behavioral performance.

1.2 Plan of Studies

Three studies are planned to examine the hypothesized relationships in the proposed conceptual model (Figure 6-2). Study 1 involves development and psychometric validation of a scale of emotional ability in consumer behavior (CEAS). Study 2 involves a test of model components on consumer performance incorporating cognitive and emotional influences of ability, confidence, and calibration in an individual consumer decision making task. Study 3 involves a test of the conceptual model incorporating ability, confidence and calibration in a group consumer decision making task.

1.3 Outline of the Literature Review

The role of emotion is pervasive in marketing, yet researchers are only beginning to understand exactly *how* emotions can influence behavioral performance. Researchers continue to pose questions for future research such as; what is the role of emotions in

exchanges and relationships (see Bagozzi et al. 1999), and how do consumers use emotional information to make marketing decisions (Luce, Payne, and Bettman, 1999). However, these questions remain unanswered. The mental ability framework of emotional intelligence was applied in this research to provide some answers to these questions.

The literature review begins, in chapter 2, with a discussion of *emotion*, how it fits into the broader category of affect, and how it is differentiated from less intense mood states. The review then addresses common theories of emotion, and how emotion has been understood in the marketing literature. In this section, major gaps in the literature are highlighted, namely the lack of understanding of how individuals understand and use emotional information to make marketing decisions. In chapter 3, the reviewed literature focuses on the construct of *ability* -- another background component underlying emotional intelligence -- and how it can influence performance. Models of cognitive ability in marketing are then addressed, followed by a discussion of early attempts to investigate how consumers understand and use emotional information, and the lack of a conceptual framework for examining emotional ability in marketing. Chapter 4 introduces the concept of emotional intelligence and provides a discussion of a recently developed mental ability model of emotional intelligence and the four dimensions underlying this model. The usefulness of the ability model is discussed as an application in a marketing context of consumer decision making. Finally, in chapter 5, ability is discussed in terms of people's beliefs about the abilities that they possess. This is addressed as confidence in knowledge and ability (i.e., perceived or subjective knowledge). In addition, a related concept reviewed in chapter 5 is the idea that people can be more confident in the abilities that they possess than they are objectively accurate in those abilities. This is discussed as calibration or the

correspondence between confidence and ability. The literature reviewed in each of these chapters motivates the development of the hypotheses in chapter 6. Subsequent chapters deal with scale development and validation (study one; chapter 7), analysis of hypothesized relationships in an individual decision making context (study two; chapter 8), and a small group context (study three; chapter 9). Chapter 10 reviews the findings and suggests further research directions.

CHAPTER 2

2.1 Emotion, Affect and Mood

Research has made conceptual distinctions between various types of affective states. The concept of *affect* is typically viewed as a broad term for a set of more specific processes including moods, feelings and emotions. Mood represents affect that is of lower intensity than feelings and emotions (Edell and Burke 1987), is typically nonintentional and global (Frijda 1993), and is not as directly associated with explicit actions or action tendencies as are feelings and emotions (Bagozzi et al. 1999).

Emotion is often used interchangeably with feelings (see Ruth 2001) and these constructs are considered to be conceptually synonymous (Burke and Edell 1989). Emotions and feelings (both referred to as emotions hereafter) are defined as mental states of readiness, and are considered to be more intense than moods in the strength of felt subjective experience, the magnitude of physiological response (e.g., autonomic nervous system activity) and the extent of bodily displays (e.g., facial expressions) (Bagozzi et al. 1999). Emotions represent relatively stable reactions that typically last from a few hours to a few days (Lazarus 1994), whereas moods tend to be more transient often changing depending on the stimulus (Bagozzi et al. 1999). Another important characteristic that differentiates

emotion from mood is the way in which emotions arise. Emotions are viewed as having a specific referent (e.g., a consumer is angered by an aggressive salesperson) and arise in response to changes in specific plans or goal-relevant events that influence a person's state of well-being. Moods on the other hand, are often based on changes in events surrounding them, and are elicited by "(a) after effects of emotion; (b) physiological conditions such as illness, fatigue, previous exercise, and good health, or pharmacological agents; (c) general environmental conditions and side-effects of activities: heat, noise, environmental variety, stressful conditions" (Frijda 1986, p.289). Finally, emotions are thought to directly stimulate volitions and initiate action, where as moods tend to require an additional motivation to influence behavior (Bagozzi 1992).

In sum, these criteria indicate that emotions are conceptually distinct from mood states. Both moods and emotions can provide important insights into behavior, although given the common belief that emotions serve as primary motivators of behavior, emotion may offer a unique means to examine the influence of affect on behavioral performance (see Abelson et al. 1982; Izard 1992). Several theories have been proposed to identify the influence of emotion on behavior.

2.2 Theories of Emotion

A variety of emotional frameworks have been presented in the literature, including a model of the antecedents of emotion in decision-making (see Cohen and Areni 1998), how individuals can have different emotional reactions to stimuli (i.e., emotional appraisal; see Lazarus 1991; Smith and Ellsworth 1985), communicative frameworks of emotions where events are evaluated in relation to desired goals (e.g., Oatley and Johnson-Laird 1987), and conceptual models of bipolar dimensions of high and low emotional arousal (e.g., pleasure/

displeasure; see Russell 1980) as well as independent dimensions of positive and negative affect (Watson and Tellegen 1985).

These conceptual models are limited, however, in that they fail to provide a framework of the influences of emotional abilities on performance in a marketing context. A better understanding of these distinctions allow further investigation of how these abilities may be developed and modified in specific marketing domains.

2.3 Emotions in Marketing

The application of emotion theories in marketing has lead to research focused on; 1) emotion as an antecedent to behavior, 2) emotion as a consequent, and 3) emotion as a mediated or moderated influence on marketing relationships. This organization of the emotion literature is adopted from a three-part framework proposed by Cohen (1990) and colleagues (Cohen and Areni 1998).

Antecedent Influences. A considerable amount of research has focused on how emotion influences consumer's information processing (e.g., Lee and Sternthal 1999), attitudes (e.g., Williams and Aaker 2002), decision-making (e.g., Isen 2001) purchase behavior (e.g., Kahn and Isen 1993) and post purchase behavior (e.g., Mano and Oliver 1993; Westbrook and Oliver 1991). For example, research indicates that shopping environments that are more affectively pleasing can create positive affect toward the product evaluation and decision-making process (e.g., Hirschman and Holbrook 1982). Emotion has also been shown to influence ratings of the stores image, the number of items purchased, the amount of money spent, and even the time spent shopping (c.f. Cohen and Areni 1998).

Consequent Influences. Research on emotion as an outcome variable has also been prevalent in the marketing literature covering a wide range of topics, including evidence that

emotions are generated by the use of specific products (Holbrook et al. 1984; Mehrabian and Wixen 1986), by services (Oliver 1994), by a variety of consumption situations (Derbaix and Pham 1991; Havlena and Holbrook 1986; Richins, McKeage and Najjar 1992), and even by one's favorite possessions (Schultz, Kleine and Kernan 1989). Studies have also indicated that consumers who were encouraged to complain reported greater increases in positive emotion (Nyer 2000), that advertisements can elicit emotional processing of information (Agres, Edell and Dubitsky 1991; Edell and Burke 1987) and patterns of affective reactions (Baumgartner, Suja and Padgett 1997), that emotions can be elicited by word of mouth communication (Nyer 1997), and that cognitive appraisals of situations influence the emotions that are experienced in those situations (Ruth, Brunel and Otnes 2002). Other notable research suggests that even familiarity with a product can elicit favorable feelings (i.e., mere exposure effect, see Zajonc 1968). This is likely a result of people feeling increased certainty (or less anxious) when they recognize a previously presented item (Cohen and Areni 1998).

Mediated and Moderated Influences. There are also indirect and moderated relationships that have been influential to marketing relationships. For example, Holbrook and Batra (1987) proposed a framework of emotional responses to advertising effects indicating that the influences of an advertising message on the attitude toward the ad (A_{Ad}) and attitude toward the brand (A_B) is mediated by emotional reactions. Mano and Oliver (1993) proposed a framework for understanding the role of emotion on customer satisfaction, finding that positive and negative affect mediated the relationships between product judgment and customer satisfaction. Moderated effects have been examined by Stayman and Batra (1991) who found that respondents viewing an ad while in a positive (vs. neutral)

emotional state evoked stronger positive feelings toward a product when primed with the brand name. Another study found that positive affect moderated the relationship between two cognitive processes (i.e., bias against negative thoughts, reduced elaboration) and brand attitude, finding that positive emotion enhanced the effect of these cognitive influences.

Despite these contributions of emotional influences as predictors, outcomes, moderators and mediators of behavior, few studies have examined how individuals actually *use* emotions and emotional information to perform desired behaviors in a marketing context. Using emotional (or cognitive) information to achieve some desired outcome implies an *ability* to process and use this information (Mayer, Salovey and Caruso 2000). First, the concept of ability and how it relates to behavioral performance is addressed, along with a discussion of ability's role in marketing relationships and the potential implications of emotional ability in marketing.

CHAPTER 3

3.1 Ability and Performance

Differences in cognitive ability have been emphasized in the literature since ancient times. Aristotle claimed that intentional behavior is related to the mental state that immediately precedes it, stating that mental ability is “deliberation preceding action” (Jensen 1998, p. 4). However, it was not until the writings of Herbert Spencer (1855) that mental ability was considered a biological characteristic that “evolved through the differential adaptation of organisms to their environment over time” (Jensen 1998, p. 6). Spencer viewed mental ability as an adaptive function for achieving external results from internal predispositions (Spencer 1855). Several years later, Sir Frances Galton (1883) developed crude methods to test mental ability via sensory discrimination and speed of reaction. He

concluded that mental ability is inherited in much the same manner as physical traits, and this inherited intelligence and should be regarded as a general ability. Although Galton never offered a definition of ability or intelligence, researchers (e.g., Jensen 1998) have posited a definition based on Galton's writings to include "innate, general, cognitive ability" (p. 13). The term cognitive clearly distinguishes it from the two other attributes of Plato's triarchic conception of the mind – affective, conative. The cognitive conception of ability was further developed by Alfred Binet in 1905 with the invention of the first valid and practical test of intelligence. Building on the ideas of Galton, Binet's new tests were of much greater complexity and allowed for higher mental processes – reasoning, judgment, planning, verbal comprehension, and acquisition of knowledge – to be accessed and engaged (Jensen 1998). Binet's measurement techniques and conceptual development of this cognitive ability construct have been, at the very least, a foundation for later research on ability.

3.2 Cognitive Ability in Marketing

The construct of cognitive ability is prevalent in marketing research (e.g., Ariely 2000; McCarthy and Mothersbaugh 2002; Swait and Adamowicz 2001). Cognitive ability has taken several forms in the literature including the concepts of objective knowledge (Brucks 1985; Alba and Hutchinson 2000), expertise (Mitchell and Dacin 1996; Shanteau 1992), and prior knowledge (Wood and Lynch 2002). In line with these conceptualizations, *ability* is defined as the amount of domain-specific knowledge acquired through experience, training, or innate individual differences (see Spence and Brucks 1997).

Much of the research on ability has focused on an individual's cognitive capability to acquire (e.g., Capon and Davis 1984), process (e.g., McCarthy and Mothersbaugh 2002) and use (e.g., Ariely 2000) information to make better consumer-related decisions. For example,

research has shown that the availability of information can improve a consumer's ability to search and develop informed judgments (e.g., Russo et al. 1986), and that this ability is an essential component of effective decision-making (e.g., Alba and Hutchinson 1987) and behavioral performance (e.g., Park and Lessig 1981; Raju, Lonial, and Mangold 1995).

Despite the considerable amount of research on ability, it remains unclear exactly how cognitive ability influences behavioral performance (see Wood and Lynch 2002). Some research indicates that ability increases performance by facilitating the acquisition of new information, increasing search efficiency (Brucks 1985), and allowing for more automated thinking processes than those with lower levels of ability (Shiffrin and Schneider 1977). Ability is also suggested to lead to schema development (Prerau, Adler, and Gunderson 1992), facilitate rapid problem recognition and reduced memory search (Lamberti and Newsome 1989), and increased evaluative judgments (Taylor and Brown 1994). Other research, however, suggests the opposite influence, indicating that people; typically assume they know more than they actually do (i.e., overconfidence; Alba and Hutchinson 2000; Camerer and Johnson 1991; Keren 1987), form inappropriate inference heuristics due to repeated problem solutions (Shanteau 1992), and that people who are more familiar with a problem cue may inappropriately attempt memory recall instead of re-solving a changing problem (Schwartz and Metcalfe 1992), resulting in a complacency to learn new information (Wood and Lynch 2002). Individuals with higher levels of prior knowledge are more likely to incorrectly generalize from knowledge of existing product and make assumptions about their understanding of new product attributes and usage procedures. This inferior learning is due to motivation deficits at encoding rather than retrieval processes (Wood and Lynch 2002). Thus, a further delineation of how cognitive ability influences performance is needed

to reconcile extant literature. Cognitive ability is examined in the present research.

3.3 Emotional Ability in Marketing

Emotional ability has been largely ignored in the marketing literature, although a few attempts have been made to identify how people *use* emotions to influence performance. One area of research indicates that one's ability to understand emotional knowledge can influence the formation of attitudes (Ruth 2001). This author suggests, "...in addition to product- and brand-related knowledge, individuals systematically use nonmarket types of knowledge such as knowledge of emotions in evaluating products and prospective consumption experiences" (p. 100). This author goes on to suggest that the presence of emotional information (i.e., emotional benefits) facilitates access to categorical knowledge of an emotion and the types of experience associated with it. This information is then used to make favorable or unfavorable evaluations of the brand. Understanding emotional knowledge and how it leads to a desired outcome (develop evaluations of a product in this case) or make a choice selection, is an important component of emotional ability (i.e., see *Understanding Emotion* in the chapter 4).

Other research on emotional ability in marketing has applied the concept of emotional trade-off difficulties on choice behavior (see Luce, Payne and Bettman 1999; 2001). Simply stated, this research suggests that a consumer's ability to resolve emotion-laden trade-offs can have an important impact on the consumer's choice strategy. These authors propose a model of trade-off difficulty focusing on its antecedents and consequences in which they argue that consumers perceive and appraise choice situations in light of their goals and their potential emotional content. They go on to suggest that these emotional appraisals of ability to cope can influence assessments of trade-off difficulty. The ability to perceive and

assimilate emotions into judgment processes is an important component of emotional ability in marketing (i.e., see *Perceiving Emotion* and *Facilitating Emotion* in the chapter 4).

Despite these noted contributions, to our knowledge, no other research attempts to examine the influence of emotional ability on behavioral performance. A better understanding of emotional ability can have considerable value in extending our knowledge of marketing problems. For example, an examination of emotional ability may allow researchers to distinguish among empirically and conceptually distinct emotional influences that underlie consumer behavior (e.g., how does a consumer's *understanding* of emotion differ from his/her *facilitation* of emotion?) Further, an examination of emotional ability can provide a conceptual framework for *how* emotional influences predict performance in consumer contexts (e.g., how do emotional abilities help consumers to make better food choices?). And potentially our understanding of emotional information and how we manage this information can be influential to the quality of our decisions. For example, consumers who possess high levels of acquired knowledge of nutritional information, but not the ability to understand the emotions involved in maintaining a healthy diet, may be at a great disadvantage, unable to control impulsiveness or effectively regulate consumption-related affect, potentially leading to more severe health and fitness concerns. As a result, consumers who are ineffective relative to their emotional ability may make lower quality decisions based on a lack of emotional knowledge and ability to use this knowledge.

Despite these important implications of emotional ability in consumer behavior, no framework exists to capture the impact of these influences. Ability models of emotional intelligence can provide a conceptual model for identifying how consumers understand and use emotional knowledge to make better decisions.

CHAPTER 4

4.1 Overview of Emotional Intelligence

Emotional Intelligence (EI) is a relatively new domain of investigation, having recently gained considerable momentum with widespread international attention (Roberts, Zeidner and Matthews 2001). EI as a concept has gained interest, in part, because of the increasing realization of the importance of emotion in everyday life situations (see Fisher and Ashkanasy 2000; Goleman, 1995).

EI first appeared in the scientific literature in the early 1990s (e.g., Mayer, DiPaulo and Salovey 1990; Salovey and Mayer 1990) as a term used to reflect a type of intelligence that involved the ability to process emotional information. EI has been referred to as nonacademic (Sternberg 1985; 1997), noncognitive (Bar-On 1997), and nonintellective intelligence (Wechsler 1940). Each of these terms represents attempts to distinguish several less traditional views of intelligence from the more widely recognized and researched academic, cognitive, and intellective intelligence generally thought of as “general ability” which is typically measured by IQ-type tests (Hedlund and Sternberg 2000).

Over the past two decades, emerging theories have challenged the traditional IQ-based views of intelligence. Among these, Gardner’s (1993; 1999) theory of multiple intelligences has received the greatest attention. Within this theory, Gardner (1993) acknowledges the role of intrapersonal intelligence, which is the ability to understand oneself – “to know how one feels about things, to understand one’s range of emotions, to have insights about why one acts the way one does, and to behave in ways that are appropriate to one’s needs, goals, and abilities” (Hedlund and Sternberg 2000, p.138). Gardner (1993) also acknowledges the role of social (what he calls interpersonal) intelligence and defines it as

understanding others and acting on that understanding. Interest in these areas has led to emerging research on emotional intelligence (e.g., Bar-On 1997; Davies, Stankov and Roberts 1998; Salovey and Mayer 1990; Mayer, Salovey, and Caruso 2000; Mayer, Salovey, Caruso and Sitarenios 2003).

Recently, emotional intelligence has been under fire by challenges from researchers who questioned whether EI is anything more than a set of personality variables for which adequate measures already exist (Davies, Stankov, and Roberts 1998). As a result, Mayer, Salovey and Caruso (2000) began to distinguish between *ability models* and *mixed models* of emotional intelligence. These authors and others (e.g., Roberts, Zeidner and Matthews 2001; Tapia 2002) focused their research on the development and validation of models of emotional ability (Mayer, Caruso and Salovey 1999) and have warned that models that “mixed” abilities lacked internal consistency, since they included mental abilities along with a variety of other dispositions and traits. Mayer, Salovey and Caruso (2000) subsequently concluded that models of mental ability are the only models that can be appropriately termed emotional intelligence, since mixed models “offer a more general perspective than a definition of intelligence would suggest” (p. 413). These authors argue that it is more useful for researchers to take a “reasoned, thoughtful approach to studying human effectiveness under various conditions...” by employing mental ability models of emotional intelligence (p.416).

4.2 Ability Model of Emotional Intelligence

Ability models define emotional intelligence as a set of skills concerned with the processing of emotion-relevant information, and are measured with ability-based scales (Mayer, Salovey and Caruso 2002a). The ability model is a more restrictive framework of EI

that considers emotions not as a single trait or ability, but as a composite of distinct emotional reasoning abilities such as perceiving, facilitating, understanding, and managing emotional information (Mayer et al. 2000). Mayer and Salovey (1997, p. 15) stated that emotional intelligence “refers in part to an ability to recognize the meanings of emotional patterns and to reason and solve problems on the basis of them.” These discrete emotional abilities are divided into four branches: perceiving, facilitating, understanding and managing emotion.

Perceiving Emotion. Perceiving emotions is the ability to perceive accurately, appraise, and express emotions (Mayer, Caruso and Salovey 1999). Implicit in this dimension of EI is the individual’s awareness of both the emotions themselves and the thoughts that accompany their emotions, the ability to monitor and differentiate among emotions, and the ability to adequately express emotions (Roberts, Zeidner and Matthews 2001).

Facilitating Emotion. Facilitating emotion is the ability to access, generate, and use emotions to facilitate thought (Mayer and Salovey 1997). This dimension of EI involves assimilating basic emotional experiences into mental life (Mayer, Caruso and Salovey 2000). This includes weighing emotions against one another and against other sensations and thoughts and allowing emotions to direct attention. With this ability, emotions are marshaled in the service of a goal, which is an essential component for selective attention, self-monitoring, self-motivation, etc. (see Roberts, Zeidner and Matthews 2001).

Understanding Emotion. Understanding emotion is the ability to analyze complex emotions and form emotional knowledge (Mayer and Salovey 1997). This dimension of EI

involves reasoning and the understanding of emotional problems, such as knowing what emotions are similar and what relation they convey.

Managing Emotion. Managing emotion is the ability to regulate emotions to promote a desired outcome (Mayer and Salovey 1997) by understanding the implications of social acts on emotion and the regulation of emotion in the self and in others. According to Mayer, Caruso and Salovey (1999), regulating or managing emotions is the highest level of abstraction in the EI framework. This dimension involves knowing how to calm down after feeling stressed out or alleviating the stress and emotion of others. This component of EI can facilitate social adaptation and problem solving (Roberts, Zeidner and Matthews 2001).

4.3 Limitations of Existing Emotional Intelligence Measures

With the recent development of a comprehensive emotional intelligence scale, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; see Mayer, et al. 2003), a more thorough investigation of the relationship between emotional intelligence and performance can be examined. The MSCEIT is a measure of an individual's ability to perceive, facilitate, understand, and manage emotions. This instrument has been found to be a valid and reliable construct of emotional intelligence (see Mayer et al. 2003). Despite the advantages of using the MSCEIT, and its acceptance as "the" model of emotional ability, this instrument has disadvantages that preclude its usefulness. Most importantly, the MSCEIT is designed to be a general measure of emotional ability of individuals in a wide range of interpersonal contexts. Little is known about its appropriateness for assessing specific emotional abilities involved in marketing domains such as consumer behavior. Another disadvantage of a general measure is that it requires a protracted length in order to capture broad emotional abilities applicable to numerous contexts, making it difficult to administer in

combination with other scales. In the present research, the inclusion of measures of cognitive ability and cognitive and emotional confidence was critical in assessing the full conceptual model.

Based on these disadvantages of the MSCEIT, one contribution of the consumer emotional ability scale (CEAS) is to provide an instrument that is; 1) specific to the domain of consumer behavior, 2) condensed in length, and 3) allows for the administration of multiple scales concurrently without undue respondent fatigue. The development and validation of the CEAS is discussed further in study one (chapter 7).

In sum, models of emotional ability have been shown to influence performance beyond the effects of cognitive ability outside the field of marketing, however no research has applied this model to a marketing context. Thus, one goal of the present research is to examine a model of consumer performance in which cognitive and emotional ability influence decision quality.

In the next chapter, ability is discussed in terms of the consumer's beliefs about the cognitive and emotional abilities that he/she possesses. This suggests that there are differences not only in the abilities possessed by consumers, but also differences in perceptions of those abilities. For example, for a consumer to make the decision to order a salad instead of a cheeseburger, he/she should not only possess the ability to understand and manage emotions, but also *perceive* that he/she possesses these abilities. This perception of knowledge and ability refers to the constructs of confidence in ability and calibration between ability and confidence. These influences on consumer performance is addressed in chapter 5.

CHAPTER 5

5.1 Confidence and Performance

Research has suggested that consumers' confidence in their beliefs can influence performance (e.g., Alba and Hutchinson 2000). This confidence in beliefs about knowledge (e.g., Brucks 1985) and abilities (Bearden, Hardesty, and Rose 2001) can play an important role in how consumers think and behave (Moorman, et al. 2003). Research in this area focuses on the degree to which an individual *believes* that he/she has made a correct judgment. Thus, confidence in ability refers to the certainty of our estimates and predictions, and indicates ambiguity and presumption inherent in our judgments and decisions (Russo and Schoemaker 1992). Confidence beliefs can provide insight into how individuals make decisions based on subjective probabilities of expected outcomes. A second goal of this research is to assess the impact of perceptions of confidence in emotional and cognitive abilities on subsequent consumer performance.

5.2 Confidence in Marketing

Research has indicated that both ability and confidence can influence behavior differently (e.g., Brucks 1985; Park and Lessig 1981; Raju, Lonial, and Mangold 1995) and that individuals are “better off using confidence as an input to decision making than ignoring it – if they use it properly” (Alba and Hutchinson 2000, p.130). Despite empirical evidence of the association between confidence and performance, there exists some debate over the nature of this relationship. For example, Brucks (1985) found that in contrast to actual ability, perceived confidence in knowledge has a negative influence on evaluative judgments (see also Park and Lessig 1981) suggesting that higher levels of confidence can have a detrimental effect on performance outcomes. More recent findings, however, have not

supported evidence of a negative relationship. In fact, recent studies have suggested that confidence may have an adaptive value in providing affective, motivational, and performance effects in some settings (e.g., Taylor and Brown 1988, 1994). For example, Alba and Hutchinson (2000) suggest that, “optimism and inflated feelings of self-efficacy may have a motivational effect that ultimately results in higher levels of performance.” Moorman et al. (2003) supported this positive relationship finding that confidence in beliefs can have unique and positive effects on choice quality, independent of actual ability. These authors suggested that this effect occurs because perceived confidence “increases the likelihood that consumers will locate themselves near situational, informational, and/or social stimuli” consistent with their beliefs (p. 7). For example, if consumers believe they are knowledgeable about healthy food choices, the likelihood they will locate themselves proximate to stimuli associated with that knowledge would increase—such as healthy isles in a grocery store. This is due, in part, to a well-documented underlying need for self-consistency or the desire to seek out situations and people that are in line with beliefs about the self (Moorman et al 2003; for a review, see Swann, Rentfrow and Guinn 2002).

Additional research has indicated that perceived confidence is not only as important, but may even be more important than actual ability in making decisions and in behavioral performance (Russo and Schoemaker 1992). For example, a consumer confidently *believing* he/she possesses the ability to understand and manage emotions may feel empowered and in control of healthy food choices, regardless of actual emotional ability. This individual may even patron a fast food restaurant if it is believed to offer healthy food choices. Thus, individuals who believe they have the ability (i.e., confidence) are likely to strive for self-consistency and locate themselves near stimuli consistent with their knowledge. These

individuals are then likely to make more effective decisions regarding food choices than those with lower levels of confidence, and potentially are more likely to maintain a healthy diet.

Further however, it is likely that a more complex relationship exists between ability and confidence in that ability. For example, a consumer should not only possess competent knowledge of healthy foods, but also must believe that he/she possesses that knowledge (i.e., confidence). Thus, it is likely that actual knowledge is influential only at higher levels of confidence in that knowledge. If a consumer possesses knowledge but is not confident in his/her ability to use that knowledge, then the quality of the consumer's decision may suffer.

5.3 Calibration and Performance

Accurate judgments are critical for good decision-making (Yates 1990). Considerable research, however, has indicated that people are often more confident than they are accurate (Blanton et al. 2001). Fischhoff, Slovic and Lichtenstein (1977) further suggested that people are “wrong too often when they are certain that they are right” (p. 561). This correspondence is typically referred to as calibration (see Alba and Hutchinson 2000). Specifically, when an individual's mean confidence judgment (as measured on a probability scale) matches the proportion of times a target event actually occurs, then this person's opinions are highly calibrated between judgment and accuracy. Thus, if a person's calibration is low, this individual's opinions are not an accurate estimate of the actual occurrence of the events (Yates 1990). Alba and Hutchinson (2000) posit that an individual's judgments are routinely biased, posing several problems. First, bias implies that decision-making may suffer due to the inaccuracy of judgments. Second, individuals often do not receive feedback on this inaccuracy and are routinely miscalibrated in their judgments,

continuously making ineffective evaluative judgments (Yates 1990).

Alba and Hutchinson's (2000) empirical conclusions of the calibration paradigm indicate: 1) the existence of moderate correlations between subjective probabilities (i.e., reported confidence) and objective accuracy assessments (i.e., percent correct), 2) a general tendency toward overconfidence (i.e., mean confidence scores are greater than mean accuracy scores), and 3) when questions vary in terms of difficulty (e.g., measured by percent correct), there is more overconfidence in the hard rather than easy conditions (called the hard-easy effect). In other words, there exists a tendency toward overconfidence when confidence is high and a tendency toward underconfidence when confidence is low (Keren 1991). These discrepancies in judgment are relatively consistent across expert (Yates, McDaniel, and Brown 1991) and layperson (Fischhoff, Slovic, and Lichtenstein 1977) judgments, and for unique events such as predicting election outcomes (Yates and Curley, 1985) and repeated events such as prediction card game success (e.g., Keren 1987).

The influence of calibration can provide insights into how individuals systematically bias their judgments and how this can affect performance. Thus, a third goal of this research is to identify the impact of calibration between perceived and actual cognitive and emotional ability on performance in a marketing context.

5.4 Calibration in Marketing

In the marketing literature, the examination of cognitive and emotional calibration emphasizes the distinction between what consumers think they know (subjective knowledge) and what they actually know (objective knowledge; see Alba and Hutchinson 2000; Brucks 1985, Park, Mothersbaugh, and Feick 1994). *Objective knowledge* is viewed as actual knowledge stored in memory that represents a person's cognitive ability to perform some

knowledge related task (e.g., Bettman and Park 1980) such as the ability to indicate technical knowledge about a product or competitor's product. *Subjective knowledge*, on the other hand, is viewed as confidence in beliefs about that state of knowledge or ability (e.g., Moorman et al. 2003). This refers to a person's beliefs about "what they think they know" (Brucks, 1985 p.1). This area of research has focused on the accuracy of consumer's subjective judgments of their ability relative to their accuracy in performing some task. Findings suggest that correlations between these confidence judgments (i.e., subjective knowledge) and actual ability (i.e., objective knowledge) are generally low (e.g., Alba and Hutchinson 2000; Glenberg et al. 1982; Schwarz and Strack 1999; Vallone, Griffin, Lin, and Ross 1990), suggesting that miscalibration may allow for reliable discrimination of individuals who performance better on a given task.

A consumer's calibration is important since decisions are routinely made about where to consume food, what food to consume, which businesses to patron, and what products to purchase, to name a few. Inherent in each of these decisions are subjective judgments about our ability to perform certain tasks. For example, decisions about where to eat and what foods to order at a restaurant depend considerably on consumers' judgments about their ability to consume healthy food. If these confidence judgments are different from their actual level of ability to perform a behavior, these consumers are likely to make miscalibrated judgments and are then likely to make lower quality decisions. This suggests that miscalibration between confidence and ability may lead consumers to assume they know more than they actually do (Alba and Hutchinson 2000), resulting in a complacency to learn new information (Wood and Lynch 2002) and more importantly make effective decisions. For example, if consumers are confident in their nutritional knowledge, but lack an actual

knowledge of fat and fiber contents of certain foods, these individuals may assume they are eating healthy when, in fact, they are not. The more miscalibrated these individuals become, the lower the quality their health decisions become (Yates 1990), suggesting that without evaluative feedback about their ability, these consumers may continue to exhibit poor decision making.

CHAPTER 6

6.1 Hypothesis Development

Cognitive Ability on Performance. Consumer research has not clearly delineated exactly how cognitive ability influences performance. However, research is clear that cognitive ability is essential to improving consumer decision making (e.g., Alba and Hutchinson 1987; Ariely 2000; Balasubramanian and Cole 2002) and performance (e.g., Park and Lessig 1981; Raju, Lonial, and Mangold 1995).

Research over the past half century has indicated two conflicting pictures of the influence of ability on performance (Shanteau 1992; Wood and Lynch 2002). Some research has suggested that ability may decrease performance levels by inhibiting the acquisition of new information (Wood and Lynch 2002), reducing search efficiency (Schwartz and Metcalfe 1992), and stimulating the formation of inference heuristics (Shanteau 1992).

Despite these noted contributions relative to new product learning, a large body of literature exists that indicates a contrasting pattern of relationships among high knowledge experts and performance. This research has consistently indicated the superiority of experts vs. low knowledge novices, in various performance contexts (e.g., Camerer and Johnson 1991). This research suggests that more knowledgeable individuals (i.e., experts) have an information processing advantage when learning new information (Alba and Hutchinson,

1987), use of more automated thinking processes that benefits decision making (Larkin et al. 1980) freeing up cognitive resources that can be delegated to other tasks such as learning of new information (Chi, Glaser, and Rees 1982; c.f. Wood and Lynch 2002). High knowledge experts also categorize more information, and attend to perceptual processing more than low knowledge novices (Johnson and Mervis, 1997). Consumer research additionally indicates that more knowledgeable consumers may make higher quality decisions and make more thorough searches for additional product information since they are more aware of existing attributes (Brucks 1985), they ask more effective questions (Miyake and Norman 1979), and they are more able to identify relevant information (Johnson and Russo 1984). Based on this research, a direct relationship of cognitive ability on consumer performance is predicted.

H₁: Cognitive ability (i.e., objective knowledge) will positively influence consumer decision quality.

Emotional Ability on Performance. In addition to cognitive ability as a predictor of performance, this research will identify the influence of emotional ability on the quality of a consumer's decision. The idea that emotional ability (i.e., emotional intelligence) can lead to personal and professional success has generated a great deal of excitement among the general public, managers, academics, and business consultants alike (Mayer, Caruso and Salovey 2000). Mayer, Salovey and Caruso (1999) suggest that emotional ability is an optimal tool for identifying individuals who truly understand emotions. These authors argue that emotional ability allows us to accurately “distinguish the people who truly understand their own emotions from those who get lost in them.” The emotional ability framework can help identify those individuals who not only may be more successful in interpersonal interaction outcomes, such as between two consumers or between a consumer and a sales person, but

also may be more successful in making effective consumer related decisions. These individuals are likely to be better at making product and food choices since they are more able to perceive their own feelings and the feelings of those around them, use those feelings to facilitate important decisions, to understand emotions necessary to make decisions that likely lead to various consequences, to listen and feel empathically, and to behave sensitively. Thus, this framework has the potential to yield insights into how consumers use emotional abilities to make decisions and perform consumer related behaviors.

Researchers have routinely claimed that EI predicts important educational, managerial, and organizational outcomes (e.g., Fox and Spector 2000; Ryback 1998; Weisinger 1998). Only recently, however, have strides been made to understand the dimensions, determinants, and effects of emotional intelligence within a particular interpersonal interaction. Findings have generally suggested that an increase in emotional ability is associated with higher levels of performance and often predicts performance beyond general cognitive ability (e.g., Lam and Kirby 2002; Matthews, Zeidner and Roberts 2003). Despite its potential as a predictor of successful interpersonal interactions among consumers or among consumers and sales employees, no research has been conducted to identify how emotional ability affects the quality of a consumer's decisions. Thus, a direct relationship of emotional ability on consumer performance relative to food and product choices is predicted.

H_{2a}: Emotional ability to perceive, facilitate, understand, and manage emotions will positively influence consumer decision quality.

H_{2b}: Emotional ability to perceive, facilitate, understand, and manage emotions will positively influence consumer decision quality beyond the effects of cognitive ability.

Cognitive Confidence on Consumer Performance. It is suggested that confidence in knowledge and ability may be as important, if not more important than actual ability in the performance of a behavior (Russo and Schoemaker 1992). Whether a consumer possesses a competent knowledge of product features (i.e., cognitive ability) may be less important than the consumer's confidence in that knowledge, in order to effectively make a decision. Research indicates that consumers who are highly confident in their knowledge and ability may seek out situations and people that are in line with beliefs about the self (Swann et al 2002), which, in turn, is likely to increase the quality of a decision consistent with that knowledge (Moorman et al. in press). For example, if a consumer believes that he/she possesses knowledge about healthy foods, this person may act in accordance with these beliefs, where by only eating at restaurants that offer healthy food choices, or spending more time in the healthy food isles at the local grocery store. This consumer is likely then to increase the quality of the food choices made.

H₃: Confidence in cognitive ability (i.e., subjective knowledge) will positively influence consumer decision quality.

Moderated Influence of Cognitive Confidence. In addition to the direct impact of confidence on performance, a moderated relationship is hypothesized in which actual knowledge is influential only at higher levels of confidence in that knowledge. This suggests that a consumer should not only possess competent knowledge of healthy foods, but also must believe that he/she possesses that knowledge (i.e., confidence). Thus, when a consumer possesses knowledge but not the confidence in that knowledge, the quality of the consumer's decision is likely to suffer. For example, a consumer may be very knowledgeable about

healthy foods, but lack the confidence to employ that knowledge in making effective healthy choices. In this situation, the consumer is at a disadvantage, questioning his/her ability to make the best choice, and is likely to lower the quality of the choices made. Thus, a moderated influence of confidence on the relationship between cognitive ability and performance is predicted.

H4: Confidence in cognitive abilities (i.e., subjective knowledge) will moderate the relationship between cognitive ability (i.e., objective knowledge) and consumer decision quality, such that when confidence is high, the relationship between ability and performance will strengthen.

Emotional Confidence on Consumer Performance. Research has primarily focused on confidence beliefs toward cognitive knowledge and ability (e.g., Alba and Hutchinson 2000), although a similar mechanism is likely to operate in the domain of emotional ability. It is anticipated that consumers hold confidence in their beliefs about emotional abilities to perceive emotions in others, facilitate emotions into thought, understand complex emotions, and manage their own emotions and the emotions of others, in a way similar to their cognitive skills. Although emotional confidence does not currently exist as a construct in the consumer literature, it is likely that confidence in one's ability also pertains to emotional confidence. Individuals can be confident in their knowledge about healthy food, but may or may not be confident in their emotional knowledge about whether they are able to perceive, facilitate, understand or manage the emotions associated with healthy eating. Thus, emotional confidence refers to the certainty of our estimates and predictions about the way we react emotionally, and indicates subjectivity and ambiguity inherent in our emotions in a given situation. This confidence in beliefs about emotional abilities is likely to play an

important role in how consumers behave. For example, a consumer who is confident in his/her emotional ability to manage emotions is at an advantage when in a situation involving unhealthy food choices. This individual may be better equipped to make higher quality decisions when confidence is high, managing the emotions that are persuading this individual to purchase an unhealthy item, such as an order of fries. Thus, it is likely that a high level of confidence has a positive impact on the quality of a consumer's decision.

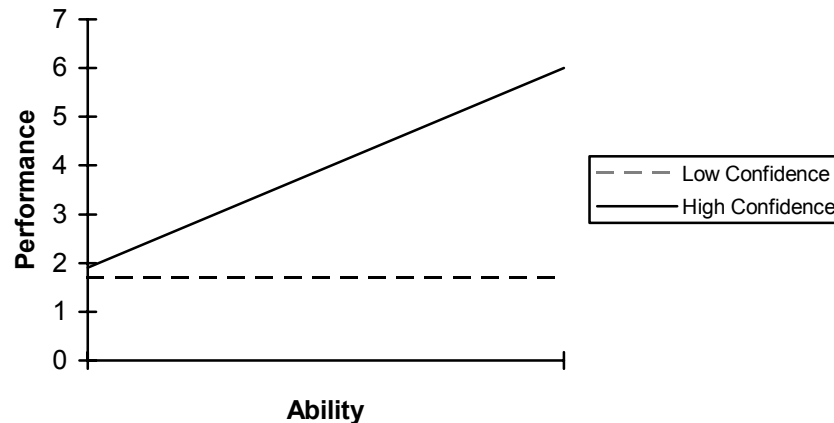
H₅: Confidence in emotional abilities will positively influence consumer decision quality.

Moderated Influence of Emotional Confidence. In addition to the direct impact of confidence on performance, it is likely that emotional ability influences performance only at higher levels of confidence. Thus, a consumer not only must possess emotional abilities in order to perform well, but also must believe he/she possesses those abilities. If a consumer is adept at understanding and managing emotion, but lacks confidence in using these abilities, it is likely that he/she will make lower quality decisions as a result of this inconsistency. For example, when in a grocery store, a consumer who is able to effectively manage emotions, but who lacks confidence in this emotional ability, may doubt his/her ability to manage these emotions and potentially give in to unhealthy food choices. As a result, this consumer is likely to spend more time in less healthy food isles. In this situation, the consumer's lowered confidence precluded his/her effective decision making when making food choices. Thus, it is predicted that emotional ability is influential on consumer performance only at higher levels of confidence. See Figure 6-1 for a diagram of proposed moderated relationships.

H₆: Confidence in emotional abilities to perceive, facilitate, understand, and manage emotions will have a moderated influence on the relationship between emotional ability and

decision quality, such that when confidence is high, the relationship between ability and performance will strengthen.

Figure 6-1. Proposed Moderated Influences of Cognitive and Emotional Confidence on Consumer Performance



Cognitive Calibration on Consumer Performance. Research suggests that consumers' success in estimating how they think they will perform and how they actually perform is crucial to human judgment and decision-making (Russo and Schoemaker 1992; Yates 1990). An examination of calibration's role in consumer performance is needed to better understand how bias in decision making can influence marketing applications.

Initial research indicated a positive association between calibration and performance, where higher levels of performance were associated with more accurate judgments of confidence relative to ability (e.g., Griffin and Varey 1996; Radecki and Jaccard 1995). This evidence suggests that as the gap between individuals confidence relative to their ability closes, the better they tend to perform. For example, consumers who have developed a considerable amount of knowledge regarding dieting and nutrition, possibly as a major in college, may have further developed this knowledge over time through trial and error and

continued successes and failures. For these individuals, it is likely that they have a good understanding of which knowledge is relevant and applicable to maintaining a diet and which is not. Through refinements to their knowledge and continued successes, they may also gain confidence in their ability to make healthy food choices, where by potentially becoming more accurate in their assessment of confidence relative to their ability. In other words, the gap between what they think they know and what they actually know may be reduced. As a result, these consumers may be better at selecting healthy food choices (i.e., displaying higher quality decisions). Thus, it is predicted that higher levels of calibration between what we think we know, and what we actually know will positively influence consumer performance.

H7: Calibration of cognitive abilities will positively influence the quality of a consumer's decision.

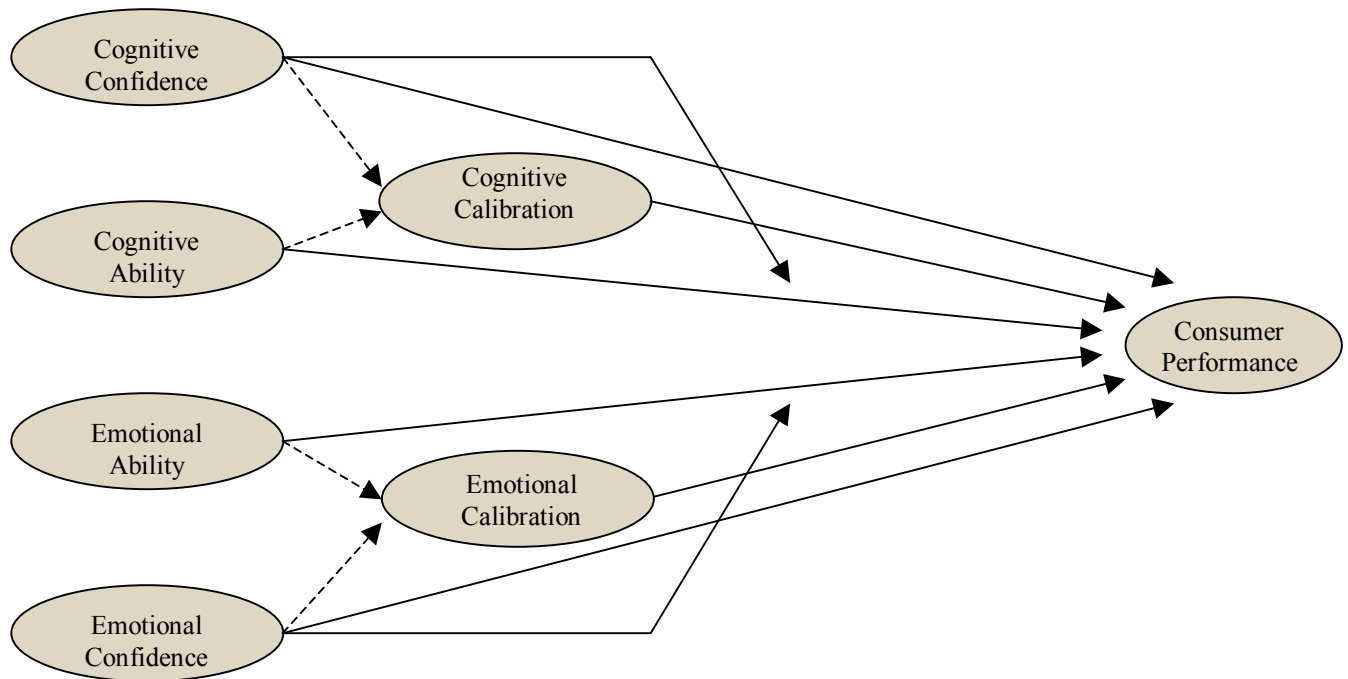
Emotional Calibration on Consumer Performance. Although research has examined cognitive calibration on consumer applications (e.g., see Alba and Hutchinson 2000; Park, Mothersbaugh, and Feick 1994), no research has examined calibration among emotional ability and confidence in that emotional ability. The present research suggests that the concept of calibration is likely to apply to emotional abilities as well and confidence in those emotional abilities. For example, consumers who are not capable of managing their emotions toward unhealthy food choices, such as routinely purchasing and eating a high fat, high carbohydrate meal, but who remain confident that they are good at managing their emotions and doing well on their diet, are overconfidence in their decision making. These individuals may repeatedly begin a diet only to become frustrated when the weight returns, likely due to their miscalibration between confidence and ability.

On the other hand, consumers who are not good at managing their emotions, and realize they are not good at managing emotions (i.e., low confidence – low ability), may in fact, make better decisions since they are aware of their shortcomings and may work toward correcting their inability to manage emotions. These individuals, along with high ability, high confidence individuals may be more likely to make better food and product choices. Thus, it is predicted that consumers who are more accurate in their assessment of their confidence relative to their emotional ability (i.e., higher calibration) will make higher quality decisions.

H₈: Calibration between emotional abilities to perceive, facilitate, understand, and manage emotions and confidence in those abilities, will positively influence decision quality.

In sum, this research has proposed a framework in which cognitive and emotional ability, confidence, and calibration between perceptions of confidence and actual ability, may impact consumer performance, namely influencing the quality of a consumer's decision. The full conceptual model can be found in Figure 6-2.

Figure 6-2. Full Conceptual Model of Cognitive and Emotional Ability, Confidence and Calibration on Consumer Performance



CHAPTER 7

STUDY ONE

Overview. Study one involves the development and validation of a consumer emotional ability scale (CEAS) that is designed to provide a domain specific, low cost, easily administered instrument of emotional intelligence. In this study, performance based measures of emotional ability are generated based on research identifying the underlying dimensional structure of emotional ability as four separate dimensions (see Mayer et al. 2003). This newly developed scale was assessed using a Multitrait-Multimethod analysis in order to evaluate its psychometric properties. Development of the CEAS instrument follows

the standard psychometric procedures suggested by Churchill (1979), Nunnally (1978) and Gerbing and Anderson (1988).

7.1 Scale Development

The first step in the development of the CEAS is to identify the underlying structure of emotional intelligence. The goal here is to delineate which components to include in the operationalization of emotional ability. Mayer et al. (2003) suggested a four-factor model of emotional ability that best represents the emotional intelligence construct: (a) *perceiving*: awareness of own emotions and the emotion of others, (b) *facilitation*: using emotion to facilitate cognitive activities, (c) *understanding*: comprehension of complex emotions and how they interact, and (d) *management*: managing own emotion and the emotions of others (Mayer and Salovey 1997).

The first dimension of the CEAS is the perception of emotion, which is the consumer's ability to accurately perceive his/her own emotions, and the emotions of other individuals. Items generated correspond to performance-based measures of EI proposed by Mayer and colleagues (e.g., Mayer and Salovey 1997), including viewing *faces* (Task 1) of an individual and then responding on a 5-point scale indicating the degree to which a specific emotion is present in the face. The faces task was derived using 5 pictures provided in Baron-Cohen, Wheelwright, and Jolliffe (1997) indicating a young college-aged woman expressing various emotions, including anger, sadness, surprise, interest and happiness. Some of the pictures indicated multiple emotional expressions. For example, the surprised facial expression also portrayed moderate levels of happiness and excitement. Another task involved viewing *products* or *packaging* (Task 6) of different product types and brands and indicating the degree to which a specific emotion is present in the product or packaging.

The second dimension of the CEAS is the facilitation of emotion, which includes the consumer's ability to assimilate emotional experiences into the buying process, or to translate emotions into thoughts about how to best proceed in an interaction, or the ability to make better judgments about which emotions are appropriate in a given situation. Items generated (corresponding to Mayer et al. 2003) reflect emotional *sensations* (Task 7), in which respondents are provided with different emotions and are asked to match sensations to them. For example, they might be presented with feelings of anger and decide how sensations of hot or cold are similar to that emotion. Additional items reflected emotional *facilitation* (Task 2) in which respondents judge the moods that best accompany or assist specific cognitive tasks and behaviors (e.g., whether joy might assist purchasing a gift for a friend).

The third dimension of the CEAS is the understanding of emotion, which includes the consumer's ability to understand how emotions are conveyed, how they interact to form other emotions, how the consumer conveys emotions to the salesperson, and how these emotions blend and progress over time. Items generated reflect a *blending* (Task 4) of emotions (see Mayer et al. 2003), in which respondents identify emotions that could be combined to form other emotions. They may conclude, for example, that malice is a combination of envy and aggression. Items additionally reflect *changing* (Task 3) emotions, in which participants select an emotion that results from the intensification of another feeling. For example, they might identify rage as the most likely consequence of intensified anger and frustration.

The fourth dimension of the CEAS is the management of emotion, which includes the consumer's ability to handle or control his/her emotions in situations in which management is needed or desired, or in managing the emotions of others in order to increase the likelihood of bringing about some desired outcome. Items generated reflect the *management* (Task 5)

of emotions, in which respondents judge the emotions that are most effective for a consumer to use in the management of his/her own feelings in a buying situation. They were asked to decide, for example, what a hypothetical character might do to reduce anxiety, or prolong joy. In addition, items reflect *emotional relationships* (Task 8) in which respondents judge the emotions that are most effective for a consumer to use in the management of feelings. For example, they are asked to decide which actions would be most effective for a consumer in the story to feel satisfied, trusting, or regretful if purchase is made. See Table 7-1 for an overview of the four-branch model of consumer emotional intelligence.

Table 7-1. The Four-Branch Model of Consumer Emotional Intelligence

Branch name	Brief description of skills
Perceiving Emotion (Branch 1)	The ability to perceive emotions in oneself and others, as well as in faces, objects, products, packaging, and other stimuli.
Facilitating Emotion (Branch 2)	The ability to generate, use, and feel emotion as necessary to communicate feelings, or employ them in other cognitive processes.
Understanding Emotion (Branch 3)	The ability to understand consumer-related emotional information and understand how emotions combine, blend together, and change.
Managing Emotion (Branch 4)	The ability to be open to feelings, and to modulate them in oneself and others so as to promote understanding and growth of consumer applications and relationships.

Pilot Tests. Four pilot tests were developed and conducted to provide specific emotions and specific situations in which emotions were involved in consumer related decisions. These pilot tests were necessary to develop the items contained in the CEAS instrument, and also to refine the measurement of the branches of emotional ability.

The first pilot test involved an open-ended elicitation of various consumer-related situations in which emotions may be evoked, such as, going to the grocery store and finding

that a particular favorite item was out of stock. Fifteen respondents from a similar sample used in study 1 were asked to indicate and describe consumer situations in which emotions might be evoked. The top 5 situations elicited were incorporated into the CEAS, including; negotiating with a salesperson, interacting with a rude employee, watching a nostalgic tv spot, and purchasing an important item. See Appendix A for the Emotional Elicitation of Consumer-Related Situations pretest.

The second pilot test involved developing items to refine the facilitation branch of emotional intelligence. Fifteen respondents were asked to indicate what emotions might be useful in various situations, including; interacting with an aggressive salesperson, consuming unhealthy food, receiving poor customer service at your favorite restaurant, and interacting with an incompetent employee. See Appendix B for the Emotional Facilitation Elicitation.

The third pilot test involved developing items to refine the understanding branch. Fifteen respondents were asked to list the emotions that could be combined to form more complex emotions that were provided to them. These complex emotions included; happiness, depression, anxiety, hostility, and guilt. See Appendix C for the Emotional Blending Elicitation.

The fourth pilot test involved developing items for the management branch. Twenty-five respondents were asked to read a very short vignette and then indicate what actions might be effective in changing or maintaining the characters emotions in that situation. Vignettes included; a woman coming back from a day of clothes shopping, feeling peaceful and content. The respondents were asked to indicate what actions might preserve her emotions. See Appendix D for the Emotional Management Elicitation.

Sample and Data Collection. Data collection for study one involved obtaining a sample of 100 undergraduate business students from a large southeastern university who participated for extra credit in a required upper-division course. This sample included juniors and seniors from a variety of business majors including marketing, management, and finance. Each respondent was administered both the newly developed CEAS and the MSCEIT. The demographic characteristics of the sample used in study one is provided in Table 7-2.

Table 7-2. Demographic Characteristics of CEAS Data

<i>Variable</i>	<i>Percentages</i>
Gender	
Male	48%
Female	52%
Age	
18-19	7%
20-21	83%
22-23	9%
>24	1%
Ethnicity	
White	67%
Asian	13%
Black	10%
Hispanic	4%
Other	6%
Class Level	
Freshman	0%
Sophomore	0%
Junior	90%
Senior	10%

Procedures. Two sessions were conducted for each participant; each session consisting of the administration of one of the two emotional intelligence instruments. In the first session, the participant was randomly selected to receive either the CEAS or the MSCEIT. The instrument that was not received in the first session was administered in the second session approximately a week later. The order of administration was counter-

balanced to reduce likelihood of alternative explanations (e.g., fatigue, testing effects). Order effects were tested in study one (see Results).

The participants were asked to read and sign an informed consent and were then provided with general instructions on how to enter identification and password information in order to be administered one of the instruments. Prior to receiving the survey, participants were asked to report information about their demographics such as age, gender, and grade point average. In addition, to evaluate nomological validity, trait items were assessed that the literature indicates are associated with emotional intelligence. These traits included self-monitoring, compulsive behaviors, and life satisfaction.

One of the two instruments was then administered online via desktop computer. The MSCEIT 2.0 took approximately 45 to 50 minutes to complete, while the CEAS takes approximately 20-25 minutes to complete.

Measures. The MSCEIT is the state of the art measure of EI that has been subject to numerous tests of its validity and reliability (see Mayer et al. 2003). Research on the psychometric properties of the MSCEIT has indicated that the scale is reliable, content valid, and a structurally valid indicator of a person's emotional ability (Mayer, Salovey and Caruso, 2000). The newest version of this ability test is the Mayer-Salovey-Caruso Emotional Intelligence Test, Version 2.0 (MSCEIT), which is argued to improve upon earlier measures (e.g., MEIS) of emotional intelligence due to its updated means of scoring, better reliability estimates, and superior factor validity estimates (Mayer, et al. 2003). The MSCEIT is intended to measure four branches, or skill groups, of emotional intelligence: (a) perceiving emotion accurately, (b) using emotion to facilitate cognitive activities, (c) understanding emotion, and (d) managing emotion (Mayer and Salovey 1997).

The MSCEIT version 2.0 is the most recent of a series of ability scales of emotional intelligence. Its immediate predecessor was the MSCEIT version 1.1, and before that, the Multifactor Emotional Intelligence Scale (MEIS; see Mayer, Caruso and Salovey 1999; Mayer et al. 2002b). These tests evolved out of earlier scales measuring related constructs such as social intelligence, emotional creativity, and non-verbal perception (e.g., Averill and Nunley 1992; Kaufman and Kaufman 2001; O’Sullivan and Guilford 1976).

Recently, there has been debate (e.g., Izard 2001; Kaufman and Kaufman; 2001; Roberts, Zeidner and Mathews 2001; Zeidner, Matthews and Roberts 2001) as to whether this scale and earlier scales of emotional ability are sufficiently reliable, whether these tests can provide one set of correct answers for emotional ability, whether the factor structure of such tests was fully understood and consistent with theory, and whether expert and general (e.g., layperson) judges opinions about answers diverge too much. In response to those concerns, recent work by Mayer et al. (2003) and others (e.g., Brackett and Mayer 2001) has addressed these issues finding that reliabilities for branch and overall test scores were reasonably high for the MSCEIT (Mayer et al. 2003), and two week test-retest reliabilities of $r(60) = .86$ were sufficiently high (see Brackett and Mayer 2001). In addition, findings from Mayer et al. (2003) suggest that a 4-factor model of underlying emotional ability dimensions provided the best representation of the emotional intelligence domain, as assessed by the MSCEIT V2.0, in support of the theoretical model of EI. Other findings suggest that expert (vs. consensus) scoring methods are in fact similar to the consensus ratings of correctness, but that they are actually improved when research is clear on emotional behavioral patterns. This is discussed further in the “scoring” section below. Mayer et al. (2003) suggest that the value of the MSCEIT as a measure of emotional intelligence will be settled by studies of its

validity and utility in predicting important outcomes over and above conventionally measured emotion, intelligence, and related constructs. A brief description of the MSCEIT items is as follows;

Perceiving emotion involves two tasks: Task 1 -- *Faces* (4 parcels, 5 responses each, 5-point scale). Participants view a series of faces, for each face a response is given on a 5-point scale indicating the degree to which a specific emotion is present in a face. Task 2 -- *Pictures* (6 pictures, 5 responses for each, responses were cartoon faces). This task is similar to the “faces” task, except that the landscapes and abstract designs form the target stimuli and response scale consists of cartoon faces (rather than words) of specific emotions.

Facilitating emotion involves two tasks: Task 3 -- *Sensations* (5 items, 3 responses each). Participants generate an emotion and match sensations to it. For example, they might generate a feeling of envy and decide how hot or cold it is. Task 4 -- *Facilitation* (5 items, 3 responses each). Participants judge the moods that best accompany or assist specific cognitive tasks and behaviors (e.g., whether joy might assist planning a party).

Understanding emotion involves two tasks: Task 5 -- *Blends* (12 free standing items). Participants identify emotions that could be combined to form other emotions. They may conclude, for example, that malice is a combination of envy and aggression. Task 6 -- *Changes* (20 free standing items). Participants select an emotion that results from the intensification of another feeling. For example, they might identify depression as the most likely consequence of intensified sadness and fatigue.

Managing emotion involves two tasks: Task 7 -- *Emotional Management* (5 items, 4 responses each). Participants judge the actions that are most effective in obtaining the specified emotional outcome for an individual in a story. They are asked to decide, for

example, what a character might do to reduce her anger, or prolong her joy. Task 8 -- *Emotional Relationship* (3 items, 3 responses each). Participants judge the actions that are most effective for one person to use in the management of another person's feelings. They are asked to decide, for example, which actions would be most effective for the character in the story to make her partner happy, make boyfriend feel guilty, make girlfriend feel better.

The CEAS (Consumer Emotional Ability Scale) was loosely adapted from measures in the MSCEIT version 2.0. The adaptation of scale items consisted of using similar format components, such as, the look and feel elements for each task, although no question wording was duplicated, nor were any of the pictures, social interactions or situations within the question stem or responses duplicated. The full CEAS instrument can be found in appendix E.

Scoring. Three methods of scoring have been reported in the emotional intelligence literature. These methods have been employed in various studies of emotional ability (see Mayer, Salovey and Caruso 2002a). One method of scoring is called the *target* score, in which the individual creating a particular scenario (read by respondents) reports his/her emotions while writing and indicating what emotions were being portrayed by the character within the scenario. A second method of scoring is called the *consensus* score, in which the participant's response to a given question is compared to the consensus response provided by the majority of participants on that item. The participant's score of a given task is increased by the percentage of the consensus group that answered the item correctly. Thus, if 80 percent of the sample were in consensus, the participant's who answered the item correctly would increase in score by an increment of .80. A third method of scoring is called the *expert* score, in which a panel of experts on emotions is asked to make correct responses on

each item. The same percentage increment scoring, as used in the consensus method, is used in the expert method.

Despite the use of these methods in past research, recent work by Mayer and colleagues (see Mayer et al. 2003) indicates that experts are more reliable judges of correct answers than non-expert consensus groups, and tend to converge on the same answers to a great extent where research has delineated a clear criterion for answer correctness and where more emotion research has been conducted. These authors suggest that with the confirmation of further research, it is likely that an expert criterion for judging correct answers may become the criterion of choice for such tests. These authors suggest however that their findings indicate the importance of using multiple expert judges ($N > 10$) in order to capture some degree of consensus among judges. When one or two experts are used alone, experts tend to perform no better than the consensus group.

Therefore, a panel of experts was obtained for use in study one to provide correct responses for the CEAS. The individuals used as expert judges have graduate training in areas of emotional expression and behavior, including specialized training in either clinical counseling or emotional research. Responses provided by this panel were used as correct answers for the CEAS, and provided the basis for scoring this instrument. Thus, scores for each task were calculated by summing responses on items into a combined score for each task. The two task scores were summed to form a composite score for the particular ability branch of the CEAS. These four branch scores were then summed to form an overall emotional ability score for each respondent. Like the MSCEIT, the CEAS is designed to attain one overall Emotional Intelligence score, along with the four branch scores. Each branch score is made up of two individual task scores. This structure and the levels of

feedback (i.e., scores) are indicated in Table 7-3. The branch scores and overall CEAS score were used for further analyses to test the full model in studies two and three.

Table 7-3. CEAS Structure and Levels of Feedback

Overall Scale	Four Branches	Task Level	CEAS Section
Consumer Emotional Ability Scale (CEAS)	Perceiving Emotions	Faces Product Pictures	(Section 1) (Section 6)
	Facilitating Thought	Facilitation Sensations	(Section 2) (Section 7)
	Understanding Emotions	Changes Blends	(Section 3) (Section 5)
	Managing Emotions	Emotional Management Emotional Relations	(Section 4) (Section 8)

Scale Refinement. To refine the CEAS scale, the items generated in study one were tested for internal consistency by submitting them to item analysis using item-to-total correlations. The CEAS must exhibit adequate levels of reliability, as does the MSCEIT. As with the MSCEIT, the CEAS four branch scores draw on different task that include different item forms (i.e., items are non-homogeneous). Under these conditions, split-half reliability coefficients are the statistic of choice (relative to coefficient alphas), since they involve the orderly allocation of different item types to the two different halves of the test (Nunnally, 1978). After initial reliabilities are assessed, more rigorous statistical techniques are applied to confirm the results predicted from past research. The items generated in study one will be assessed in a confirmatory factor analytic framework to evaluate the theoretical structure purported in the literature (see Mayer, Salovey and Caruso 2000). Since the underlying four-factor structure of emotional ability is well defined in the emotional intelligence literature, an exploratory factor analysis of the underlying dimensions of CEAS instrument will not be

conducted.

Assessment of factor structure is important because there has been debate as to whether emotional intelligence is a coherent, unified construct. Past research has proposed and supported a four-branch factor model, in which the abilities of perceiving, facilitating, understanding, and managing emotion provide the underlying structure of the emotional intelligence. Thus, if the CEAS shows similar structure to the MSCEIT, it would strengthen the argument that the theory of emotional intelligence is applicable across measures. Using the standardized sample, a confirmatory factor analysis was performed on the full CEAS, testing both a one-factor, and four-factor models to examine possible factor structures representing emotional intelligence.

In sum, a newly developed scale of consumer emotional ability is validated against an established measure of emotional intelligence (MSCEIT). With this new scale, relationships among key variables within the proposed model (Figure 6-2) can be examined.

7.2 Scale Validation

Overview. The goal of study 1 was to develop and validate the CEAS against the MSCEIT using a multitrait-multimethod analysis. In the previous section, both instruments were introduced and discussed relative to their advantages and disadvantages, along with their scoring methods and development procedures. In this section, the CEAS is compared to the MSCEIT relative to each instrument's psychometric properties in order to validate the CEAS as a reliable and valid tool to assess consumer emotional intelligence.

Churchill (1979) suggested that an important step in scale development is the assessment of what the instrument is actually measuring, namely, the extent to which the measure correlates with other similar measures (convergent/discriminant validity), and

whether the measure behaves as expected (nomological validity). Evidence of convergent validity is provided by “the extent to which it correlates highly with other methods designed to measure the same construct” (Churchill, 1979, p.70). Measures should also have discriminant validity, which is “the extent to which the measure is indeed novel and not simply a reflection of some other variable” (p. 70). To show discriminant validity, it is of interest in this research to discriminate between different tasks on different instruments. For example, task 1 on the CEAS should have a low correlation with task 2 on the MSCEIT. Participant’s responses on both scales are compared using a multitrait-multimethod matrix (MTMM).

Multitrait-Multimethod Matrix (MTMM). A useful way of measuring convergent and discriminant validity of an instrument is through a multitrait-multimethod (MTMM) study. The MTMM is a matrix of zero order correlations between different traits, when the traits are measured by different methods (Campbell & Fiske, 1959). Four elements of the MTMM should be identified; 1) Reliability, 2) Convergent validity, 3) Method variance, and 4) Heterotrait-heteromethod variance. Specifically, test-retest *reliability* estimates (diagonal), reflect reliability of alternate forms administered at two different times, although split-half reliabilities also can provide unbiased estimates for instruments with non-homogeneous item formats. We used split-half reliabilities as an estimate of the measure’s reliability. Correlations of roughly .6 or higher are expected in the reliability of the emotional ability measures.

Evidence for *convergent validity* can be identified by the extent to which the correlations between the same tasks for both instruments are significantly different from zero and sufficiently high to encourage further examination of validity (Churchill, 1979). For

example, branch 1 on the CEAS should be highly correlated with branch 1 on the MSCEIT. Correlations of roughly .5 and above are expected.

Evidence for *discriminant validity* suggests convergent correlations should be higher than the heterotrait-heteromethod coefficients (e.g., branch 1 for the CEAS method and branch 1 for the MSCEIT and branch 1 for the CEAS method and branch 2 for the MSCEIT). The heterotrait-heteromethod coefficients should not be significantly different than zero.

Figure 7-1 contains a graphical display of the proposed MTMM matrix.

Figure 7-1. Proposed Multi-Trait Multi-Method Matrix.

		<i>Method 1</i>				<i>Method 2</i>			
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Method 1	1	R				C			
	2	M	R			H	C		
	3	M	M	R		H	H	C	
	4	M	M	M	R	H	H	H	C
Method 2	1	C				R			
	2	H	C			M	R		
	3	H	H	C		M	M	R	
	4	H	H	H	C	M	M	M	R

R = Reliability
 M = Method Variance (different traits, same method)
 C = Convergent Validity (same trait, different method)
 H = Heterotrait-heteromethod (different trait, different method)
 C>H
 C>M = Discriminant Validity
 M=H

To assess how well a new set of measures behave, the nomological validity of the relationships should be assessed (see Churchill 1979). It is of interest, then, to determine how well dimensions of emotional ability are associated with other constructs or behaviors reported to be related to emotional ability. Thus, the nomological relations between each instrument and traits and behaviors are assessed in this study. If the expected relationships

between constructs are empirically supported, such that both instruments predict traits and outcomes that should be predicted by emotional intelligence, then confidence is gained that the measures of those constructs have a certain degree of nomological validity (see Bagozzi 1980; Peter 1981).

It is expected that instruments of emotional intelligence should be related to scales that assess specific aspects of expression of emotion, outlook on life, and ability to regulate emotions (Shutte et al. 1998). Thus, in this study, nomological validity are tested by relating scores of emotional ability to various outcomes such as satisfaction with work (including school), hobbies, and relationships, along with propensity for impulsive behaviors, and emotionally expressive behaviors. This research used several measures to test the nomological relations among constructs, including the Self-Monitoring Scale (Lennox and Wolfe, 1984), Compulsive Behavior Scale (Faber and O'Guinn, 1989), and The Values and Lifestyle Typology Life Satisfaction Subscale (Mitchell, 1983).

Self-Monitoring. Research has indicated that emotional ability is related to a greater ability to effectively express emotions. For example, Schutte et al. (2001) indicated that higher scores for emotional intelligence were associated with higher levels of self-monitoring. Specifically, the authors indicated that emotional ability facilitated the ability to a) understand others' emotions and behaviors, b) understand environmental contexts, and c) modify self-presentation effectively. Since emotional intelligence incorporates understanding others' emotions and regulating one's own emotions (allowing for effective self-presentation), instruments of emotional intelligence should be related to self-monitoring (Schutte, et al. 2001). Thus, it is anticipated that both the CEAS and MSCEIT are positively correlated with measures of self-monitoring.

Compulsive Consumption. Compulsive consumption behavior is characterized as chronic buying episodes of a somewhat stereotyped fashion in which the consumer feels unable to stop or moderate the behavior. Although compulsive buying may produce some short-term positive emotions for the individual, it produces a variety of negative consequences (Faber and O'Guinn, 1988). Because the ability to facilitate, understand and manage emotion in one's self and others is an important component of emotional intelligence, individuals with higher levels of emotional ability are likely to display lower levels of compulsive consumption behavior. It is argued that compulsive consumption is related to a lack of emotional management due to environmental cues, such as buying items only because they are on sale, or buying in order to feel better (Bearden, Netemeyer, and Mobley, 1993) and thus, those who are better able to understand and manage their emotions are less likely to engage in impulsive behaviors. Both the CEAS and MSCEIT are likely to be negatively correlated with measures of impulsivity.

Life Satisfaction. The ability to perceive one's own emotions and regulate and harness these emotions to facilitate important decisions may help individuals build satisfying long-term relationships and contribute to overall life satisfaction. Research (e.g., Schutte, et al. 2001) has found that people with higher levels of emotional intelligence have better relationships with others and report higher levels of satisfaction with those relationships along with higher levels of satisfaction toward life in general. Thus, it is anticipated that both the CEAS and MSCEIT are positively correlated with measures of satisfaction. The full nomological questionnaire, including instruments of Self-Monitoring, Compulsive Consumption, and Life Satisfaction, is provided in Appendix F.

7.3 Results

Order Effects. The possibility of order effects was assessed using *t*-tests comparing the mean level of responses across the two orders; MSCEIT first, CEAS first. The order of administration was found to be non-significant across both the CEAS total score ($t(98) = .193, ns$) and MSCEIT total score ($t(98) = .683, ns$). Additionally, there was no evidence for a systematic order effect across the four branch scores for either instrument.

Inter-Rater Reliabilities. Reliabilities of expert scorers was assessed in study one. Although reliability of expert ratings is necessary, the CEAS and MSCEIT instruments are unique in that each item has multiple correct answers. Mayer and colleagues (e.g., Mayer et al. 2002; 2003) suggested that not all branches of emotional ability are well understood by researchers as to what constitutes the correct response for a given item. For example, in the facilitation branch, emotions used to facilitate some action, such as, planning a dinner party, could involve both excitement and joy. Thus, if 50% of the experts believed joy was the best response and 44% believed that excitement was the best response, and all other options totaled 6%, then this item still is a very reliable item that adequately discriminates individuals who possess high versus lower levels of emotional ability. Nevertheless, when the reliabilities fall below .50 for expert scores, the items are no longer adequate discriminators of high and low emotional ability, and thus should be removed from the instrument. One item was eliminated from the CEAS that did not meet this criterion. These standards deviate slightly from suggested guidelines for inter-rater reliabilities (e.g., $> .70$; see Nunnally 1978).

Sample Characteristics. Sample characteristics and properties of the individual items were assessed to provide preliminary evidence for the newly developed CEAS. A summary

of the overall sample data is provided in Table 7-4. This table indicates the means, standard deviations, standard errors, and skewness for the overall score, the four-branch scores, and the eight task scores. The data (consisting of 100 respondents) shown in Table 7-4 are raw scores for the scales, and are based on an expert scoring method.

Table 7-4. Overall Raw Sample Data for Levels of Feedback based on Expert Scoring

Scale Group	Scale	Mean	<i>SD</i>	Skewness	Kurtosis
Overall	Total Score	45.73	7.05	-.925	.898
Branch Scores	Perceiving	15.85	3.77	-.508	-.030
	Facilitating	7.85	1.62	-.432	.142
	Understanding	11.06	2.05	-1.090	1.95
	Managing	10.96	1.72	-.690	.542
Branch 1: Perceiving	Faces	7.53	2.12	.014	-.775
	Products	8.32	2.10	-.627	.196
Branch 2: Facilitating	Facilitation	3.42	.951	-.331	-.603
	Sensation	4.43	1.14	-.197	-.053
Branch 3: Understanding	Changes	7.69	1.44	-1.074	1.66
	Blends	3.37	1.00	-.902	.302
Branch 4: Managing	Management	6.26	1.07	-.550	.562
	Relationships	4.70	1.01	-.264	-.611

Note: All scores are raw scores. Sample size = 100 Ss

To facilitate the use of this instrument, to ease interpretation, and to make raw scores comparable to scores on the MSCEIT, CEAS outputs were transformed into standard scores with a mean of 100 and a standard deviation of 15. All relevant scores were standardized including the four branch scores and the overall CEAS score. The standardized scores were used throughout the data analysis and interpretation process. The properties of each

individual raw item score, including means, standard deviations, and skewness and kurtosis values are provided in Table 7-5.

Table 7-5. Individual Item Properties (Raw Scores)

Scale Items	Mean	<i>SD</i>	Skewness	Kurtosis
Faces				
Happy	.4048	.14140	-1.702	1.901
Interest	.3118	.20610	.238	-1.632
Anxiety	.6096	.43357	-.551	-1.726
Surprise	.4531	.26290	-.375	-1.521
Afraid	.3876	.27488	-.153	-1.444
Sad	.2586	.16516	-.346	-1.224
Anger	.2689	.15779	.032	-1.790
Frustration	.2708	.12992	.179	-1.200
Disinterest	.4480	.45692	.156	-2.007
Arrogant	.3986	.35213	.240	-1.804
Disgust	.4800	.50212	.081	-2.034
Interest	.2186	.21116	.789	-.968
Disinterest	.2310	.12399	.2310	-.822
Sad	.1988	.09387	.983	-.500
Fear	.3864	.39148	.451	-1.759
Happy	.2564	.05926	-1.676	1.094
Guilt	.7294	.32326	-1.696	.905
Surprise	.4660	.21220	-.661	-1.246
Arrogance	.4626	.32344	-.281	-1.859
Facilitating				
Tension	.2603	.18593	-.385	-1.670
Hostility	.2809	.19208	-.060	-1.707
Frustration	.3029	.20760	.326	-1.640
Joy	.3781	.26454	-.105	-1.995
Guilt	.2821	.20185	.099	-1.670
Frustration	.2158	.11941	-.080	-1.707
Dissatisfaction	.2857	.17716	.371	-1.640
Anger	.2484	.13868	-.235	-1.995
Relaxation	.2050	.13753	-.314	-1.912
Tension	.1895	.15248	.695	-1.430
Joy	.5347	.36211	-.565	-1.845
Hostility	.2339	.15381	1.072	-1.636
Changes				
Joe	.9000	.30151	-1.707	-1.062
Karen	.9500	.21904	-2.193	-1.084
Steve	.6743	.20641	-1.394	-1.689
John	.8508	.26906	-2.312	-.607
A_woman	.7704	.35211	-1.608	.605

A_man	.4472	.27862	-.392	-1.654
A_young_woman	.5381	.36513	-.605	-1.649
A_woman	.5883	.32123	-.392	-1.234
A_young_man	.7100	.45605	-.940	-1.654
A_man	.7210	.39195	-1.241	-1.649
A_woman	.5389	.30350	-0.761	-1.234
Management				
Action_1	.2407	.15023	-.163	-1.197
Action_2	.3145	.16157	-.071	-1.246
Action_3	.2747	.22325	.453	-1.714
Action_4	.6176	.39474	-.854	-1.269
Action_1_He	.4212	.30213	.136	-1.921
Action_2_He	.3458	.16368	-.352	-1.387
Action_3_He	.2596	.11358	-.485	-1.056
Action_4_He	.2434	.08734	-.547	-1.736
Action_1	.2787	.09540	-.570	-1.218
Action_2	.4825	.25225	-.521	-1.461
Action_3	.4070	.16683	-1.617	.764
Action_4	.4178	.21053	-.350	-1.157
Action_1_She	.7861	.25631	-1.403	1.919
Action_2_She	.2973	.13386	-.151	-1.407
Action_3_She	.2936	.16372	-.668	-1.409
Action_4_She	.5750	.25500	-.868	-1.003
Products				
Anxiety	.2849	.14679	-.374	-1.128
Sadness	.5499	.28217	-.735	-1.407
Scheming	.2232	.21902	1.308	-.185
Anger	.2230	.21237	1.250	-.028
Happiness	.2509	.11677	-.468	-1.148
Excitement	.2811	.19414	.443	-1.226
Sadness	.6882	.40609	-1.000	-1.014
Surprise	.4600	.36777	-.109	-1.991
Happiness	.3411	.18149	-.290	-1.894
Excitement	.2526	.09054	-1.120	2.502
Relaxation	.2072	.14208	-.201	-1.295
Annoyance	.6442	.42389	-.739	-1.478
Sadness	.4263	.31134	.019	-1.889
Relaxation	.3362	.10611	-.469	-.225
Happiness	.2229	.09550	-.287	-1.717
Guilt	.6708	.36442	-1.177	-.619
Pride	.2373	.13256	-.062	-1.724
Excitement	.2094	.08900	-.872	.758
Happiness	.1919	.08229	-.859	1.264
Surprise	.2108	.19729	.922	-.622
Aggression	.2890	.12942	-.949	-.684
Joy	.2356	.21391	.190	-1.849

Relaxation	.3108	.27058	.491	-1.395
Sadness	.5771	.34183	-.795	-1.379
Sensations				
Hot	.3382	.16022	-1.403	.183
Yellow	.3927	.24718	-.296	-1.515
Sweet	.6984	.33519	-1.331	-.186
Hard	.3235	.16641	-.288	-1.349
Red	.4032	.37749	.161	-2.011
Cold	.2380	.19373	.743	-.849
Blue	.2955	.10110	-1.392	1.493
Sour	.3594	.26923	.204	-1.555
Soft	.4291	.35304	.085	-1.870
Warm	.3757	.29949	.079	-1.971
Purple	.3636	.34423	.245	-1.980
Salty	.2169	.16343	.299	-1.683
Blends				
Hostility	.5958	.32162	-.844	-1.298
Guilt	.5029	.27055	-.795	-1.311
Anxiety	.7300	.44620	-1.052	-.912
Happiness	.7050	.40908	-1.172	-.639
Depression	.8400	.36845	-1.883	1.578
Relations				
Action_1_They	.3135	.29240	.493	-1.713
Action_2_They	.2604	.11356	-.275	-1.717
Action_3_They	.2710	.13898	-.010	-1.275
Action_4_They	.4293	.36197	.093	-1.991
Action_1_She	.5082	.34008	-.295	-1.813
Action_2_She	.3717	.30469	.349	-1.683
Action_3_She	.4139	.15781	-.492	-.988
Action_4_She	.2623	.16440	-.293	-1.285
Action_1	.3046	.27255	.614	-1.398
Action_2	.4492	.23715	-.061	-1.772
Action_3	.8112	.22022	-2.027	2.753
Action_4	.3093	.28223	.605	-1.617

Table 7-6 provides the correlations of each individual task score with the four branch scores; perceiving, facilitating, understanding, and managing, and overall CEAS score. The central correlations to examine are those between the two tasks and the branch that corresponds with the given tasks. The other columns reflect the correlations between tasks and non-corresponding branches.

Table 7-6. Correlations among Eight Tasks and Four Branches

Scale Items	Total CEAS Score	Perceiving	Facilitating	Understanding	Managing
Perceiving	.407	--	.116	.155	.179
Faces	.759	.895*	.380	.302	.433
Products	.788	.893*	.529	.349	.358
Facilitating	.585	.116	--	.350	.274
Facilitation	.480	.381	.721*	.177	.242
Sensations	.629	.403	.817*	.410	.439
Understanding	.776	.155	.350	--	.421
Changes	.669	.386	.432	.892*	.427
Blends	.429	.188	.182	.759*	.269
Managing	.741	.179	.274	.421	--
Management	.593	.338	.369	.422	.838*
Relations	.577	.388	.381	.284	.816*

Note: All correlations are significant at $p < .05$; *Significance at .001.

Scale Refinement. Initial assessment of the CEAS involved examining the overall correlation with the MSCEIT. The total score for the MSCEIT correlated with the total score of the CEAS at $r = .481$.

Refinement of the CEAS involved an examination of the reliabilities for each underlying dimension. A split-half method was used to estimate reliability. The split-half reliabilities are reported at the total score, branch and task levels due to item heterogeneity. The total score for the CEAS full-test split-half reliability is $r(100) = .660$. This is somewhat lower than reported MSCEIT full test reliabilities (MSCEIT full test reliability = .752). The four branch score reliabilities ranged from .61 to .69, slightly lower than reliabilities reported on the MSCEIT (MSCEIT Branch reliabilities = .68 to .76). Overall, reliabilities at the total score and branch levels are above suggested criteria for reliability estimates (Churchill 1979), and indicate reliable measures, especially given the brevity of the CEAS. Reliability estimates at the task level range from a low of .50 to a high of .78. Despite some of these relatively low values, they are comparable to the reliabilities reported from numerous tests of

the MSCEIT. In accord with recommendations based on the MSCEIT, interpretation and further analyses are at the total score and branch levels. Past research supports this finding, suggesting that task level interpretation should be considered with caution, if at all (see Mayer et al. 2003). Thus, the eight task scores are not used in further analyses. Reliability estimates are provided in Table 7-7.

Table 7-7. Reliability Estimates at the Branch and Task Level

Scale Items	Reliability Estimate	Correlation Between Forms	Total N of Items
Total CEAS	.660	.570	88
Perceiving	.611	.521	38
Faces	.759	.613	19
Products	.779	.641	19
Facilitating	.650	.503	18
Facilitation	.565	.507	12
Sensations	.561	.490	6
Understanding	.664	.501	14
Changes	.590	.421	9
Blends	.501	.368	5
Managing	.689	.590	18
Management	.613	.444	12
Relations	.509	.409	6

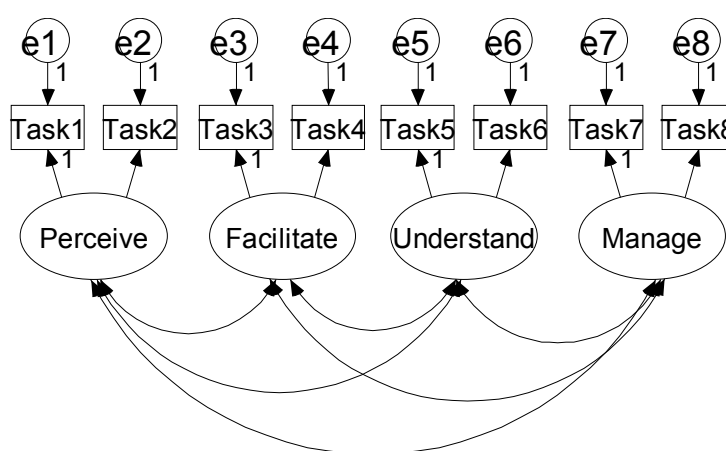
Further scale refinement involved assessment of the factor structure of the underlying dimensions of emotional intelligence. The items generated in study one were assessed in a confirmatory factor analytic framework to evaluate the theoretical structure purported in the literature (see Mayer, Salovey and Caruso 2000). Using procedures suggested by Jöreskog (1979), structural equation modeling (see also Jöreskog, et al. 2000) was used to assess the relationships between observed task scores and latent constructs for the four dimensions.

A confirmatory factor analysis can provide further evaluation for the four-factor structure of consumer emotional intelligence. There has been debate in the literature over whether emotional intelligence is a single unified construct represented by an individual item

score, or whether EI is made up of four underlying ability dimensions (Mayer et al. 2003). In response to this debate, Mayer and colleagues (Mayer et al. 2003) argued that the domain of EI is well described by both the four-factor structure and a one-factor structure. They suggest that a composite total score provides an adequate representation of the EI construct, but that the four-factor ability scores provide an even better representation of emotional intelligence. It is further suggested in this research, that if the CEAS indicates similar one- and four-factor structures as demonstrated by the MSCEIT, it would strengthen the argument that the theory of emotional intelligence employed works across tests.

Thus, a confirmatory factor analysis can cross-validate earlier studies that support the one- and four-factor solutions of the EI domain (Ciarrochi, Chan, & Caputi, 2000; Mayer et al. 1999; 2003; Roberts et al. 2001). The one-factor overall “g” model should load all eight CEAS tasks. While the four-factor model should load the two designated Branch tasks on each of the four branches (Mayer & Salovey, 1997; Mayer et al. 2001). The model specification of the one- and four-factor model is provided in Figure 7-2.

Figure 7-2. Four-Factor Confirmatory Model (Paths set to Full and Free)



One- and four-factor models were compared using AMOS IV (Arbuckle, 1999). The confirmatory models shared in common that (a) error variables were uncorrelated, (b) latent variables were correlated, (c) all other paths were full and free. In the one-factor model only, the four latent variables covariation paths were fixed at 1.0, indicate a single factor. Findings indicated that the four-factor model provided a significantly better fit to the data than the one-factor model ($\Delta\chi^2 = 47.04$, $df = 6$, $p < .001$). Overall, the indices for the four-factor model suggested an excellent fit to the data (Bentler and Bonett, 1980). The fit indices for the one-factor model suggested only an adequate fit to the data. Fit indices are provided in Table 7-8.

Table 7-8. Fit Indices for a One- and Four-Factor Model of Emotional Intelligence.

Model	χ^2	df	p value	GFI	CFI	RMSEA
One-Factor	30.14	20	.112	.901	.832	.092
Four-Factor	11.65	14	.674	.990	.985	.028

Multitrait-Multimethod Matrix (MTMM). Several analyses were conducted to assess the four elements of the MTMM; 1) Reliability, 2) Convergent validity, 3) Method variance, and 4) Heterotrait-heteromethod variance. Specifically, Guttman's Split-half method was used to assess reliability estimates between branches for both the CEAS and MSCEIT. As expected, we found high reliability estimates ($> .6$) for all split-half reliability estimates, suggesting that each branch of the CEAS elicits high levels of reliability. The full MTMM matrix is provided in Table 7-9.

Convergent Validity. Evidence for convergent validity is provided if correlations from the same branch across different measures, elicits correlations of .5 or above (Churchill,

1979). Examination of the MTMM matrix indicated that most coefficients were near or above .5, providing evidence of convergence (see Table 7-9).

Discriminant Validity. Evidence for discriminant validity is provided if three comparisons hold, namely, 1) convergent correlations are higher than the heterotrait-heteromethod, 2) convergent correlations are higher than the method variance, and 3) the pattern of correlations are consistent in all of the heterotrait diagonals. Examination of the MTMM matrix indicates that all three comparisons are satisfied in the present study, providing evidence of discriminant validity. Specifically, (a) convergent correlations ($> .4$) were higher than the heterotrait-heteromethod correlations in all cases, ranging from .195 to .389, (b) convergent correlations for each branch were higher than the method variance, ranging from .145 to .508, (c) and the pattern of correlations for these constructs were consistent in all of the heterotrait diagonals.

Table 7-9. Multi-Trait Multi-Method Matrix for Instruments

		CEAS				MSCEIT			
		1	2	3	4	1	2	3	4
CEAS	1	.611				.535			
	2	.508	.650			.286	.483		
	3	.364	.393	.664		.294	.374	.494	
	4	.442	.452	.432	.689	.277	.274	.345	.428
MSCEIT	1	.535				.681			
	2	.306	.483			.586	.690		
	3	.195	.218	.494		.145	.254	.654	
	4	.308	.389	.377	.428	.248	.404	.285	.693
Method 1	=	CEAS				Trait 1 = Perceiving Emotion			
Method 2	=	MSCEIT				Trait 2 = Facilitating Emotion			
						Trait 3 = Understanding Emotion			
						Trait 4 = Managing Emotion			

Nomological Validity. To test the relational or nomological validity of the CEAS, various outcome measures were administered to participants. Measures used to test nomological validity were three scales reported in the literature that are predicted by emotional intelligence; self-monitoring, compulsive behaviors, and life satisfaction. These outcomes were correlated with both the MSCEIT and CEAS. Evidence of nomological validity is provided when outcome variables, known to be predicted by one instrument (i.e., MSCEIT), are also predicted by a second instrument (i.e., CEAS).

Initial analyses supported findings in past research indicating that the MSCEIT predicted self-monitoring, compulsive behavior, and life satisfaction. Further, the CEAS branch and total scores were analyzed on these same variables and were also found to significantly predict outcome measures. In these analyses, each outcome variable was regressed on the total EI score and four branch scores for both the MSCEIT and CEAS.

The findings provide some evidence of the nomological validity of the CEAS instrument. The effects were relatively weak for both the MSCEIT and the CEAS on the outcomes of self-monitoring and life satisfaction, although the effects were in the appropriate directions. These weak results are likely due to power deficiencies as a result of the small sample size used in study one. The findings and scale reliability estimates are provided in Table 7-10.

Table 7-10. Nomological Relations of the MSCEIT and CEAS on Known Outcomes

Outcome Variable	Self-Monitoring	Compulsive Consumption	Life Satisfaction
Cronbach's α	.651	.778	.690
MSCEIT			
Total Score	1.592 (.008)	-2.150 (.019)**	1.571 (.009)
Perceiving	.866 (.003)	-2.027 (.015)**	.123 (.001)
Facilitating	1.245 (.005)	-1.009 (.008)	1.518 (.008)
Understanding	.419 (.002)	-.010 (.001)	.674 (.003)
Managing	1.401 (.004)	-2.153 (.017)**	.273 (.002)
CEAS			
Total Score	1.874 (.010)*	-3.492 (.023)**	1.401 (.007)
Perceiving	1.709 (.004)*	-.856 (.003)	.571 (.002)
Facilitating	1.642 (.003)*	-2.139 (.011)**	.174 (.001)
Understanding	.207 (.001)	-1.250 (.005)	1.225 (.023)
Managing	.230 (.001)	-1.882 (.009)*	1.067 (.027)

NOTE: Numbers indicated represent t-values. Parentheses represent unstandardized betas.

* $p < .10$ (Two-sided)

** $p < .05$ (Two-sided)

7.4 Discussion

Several analyses were conducted in study one to provide evidence of the accuracy and consistency of the CEAS instrument to assess consumer emotional intelligence. Initial reliability estimates indicate that the CEAS total score and branch scores provide reliable constructs for further analysis. The task scores, although eliciting low reliability estimates, were consistent with the reported task scores on the MSCEIT. In addition, each task correlated highly with its corresponding branch, indicating further support for the four-factor structure. Further evidence supporting both a one- and four-factor model was found via confirmatory factor analysis. Although the one factor model elicited an adequate fit to the data, the four-factor model elicited a superior fit.

Further, a multitrait-multimethod matrix was used to assess the reliability estimates of each branch (trait), the convergence between similar traits on both the CEAS and the MSCEIT, and discrimination between dissimilar traits. Assessment of the MTMM provided strong evidence for the convergent and discriminant validity of the CEAS measure.

Finally, nomological validity was tested in which the outcome variables; self-monitoring, compulsive consumption, and life satisfaction. Of the three outcomes, compulsive consumption was the only variable predicted at 95% confidence, while self-monitoring was marginally predicted by the CEAS and not predicted at all by the MSCEIT. Life satisfaction surprisingly was not predicted by either the CEAS or MSCEIT measures, although *t* values were consistently above 1.0.

In sum, findings in study one provide confidence in the reliability and validity of the newly developed consumer emotional ability scale (i.e., CEAS). With this information, this measure can allow for individual and group level analyses based on levels of consumer emotional intelligence. This measure can provide a means to understand how the emotional intelligence of individual consumers and small groups of consumers interacting (e.g., friends, spouses, partners), can influence decision making and subsequently consumer performance.

CHAPTER 8

STUDY TWO

Overview. The goal of study two is to test the relationships specified in the proposed model (Figure 6-2) in an individual consumer decision making context. Past research suggests that performance can be influenced not only by a consumer's cognitive ability (i.e., knowledge and skills), but also by the consumer's ability to perceive, understand, facilitate and manage emotions. Mayer and colleagues (Mayer et al. 2000; 2003) suggested that

emotional intelligence can have an important effect on interpersonal interaction outcomes, although to our knowledge, no research exists that examines how emotional intelligence affects individual decision making. Thus, one goal of study 2 is to provide a better understanding of how emotional abilities can influence how consumers make individual food choices.

Further, subjective ability, or one's confidence beliefs in their cognitive ability has been shown in past research to have a unique impact on performance outcomes in marketing applications (see Park, Mothersbaugh and Feick 1994). Confidence in emotional ability may provide an additional unique impact on consumer performance. Thus, another goal of this study is to identify the influence of cognitive and emotional confidence on the quality of a consumer's decision. In addition to ability and confidence, it is suggested that individuals are often more confident than they are accurate in their ability. A third goal of study 2 is to identify how a consumers' level of calibration, or cognitive and emotional confidence relative to their actual ability, can influence decision making performance.

The newly developed and validated CEAS instrument is used as a means to measure emotional ability in study 2. The model includes a direct influence of emotional and cognitive ability (measured as nutrition knowledge), a direct and moderated influence of confidence, and a direct influence of calibration on consumer performance (i.e., decision quality).

8.1 Pilot Tests

One pilot test was conducted to assess the difficulty of the cognitive ability (objective knowledge) items, to ensure an even distribution of hard and easy questions. Ten respondents were asked to rate the following food questions based on level of difficulty from

1 to 30, with 1 being the easiest. The difficulty ratings varied considerably, with several being rated as extremely easy, and some extremely difficult. Eighty percent of the items fell in between easy and difficult. The objective knowledge difficulty pilot test is provided in Appendix G.

8.2 Method

Sample and Data Collection. A total of 195 undergraduate business students participated in study two. The demographic characteristics of the sample are provided in Table 8-1.

Table 8-1. Demographic Characteristics of Study Two

<i>Variable</i>	<i>Frequency</i>	<i>Percentages</i>
Gender		
Male	88	45.1%
Female	107	54.9%
Age		
18-19	12	6.2%
20-21	141	72.3%
22-23	34	5.7%
>24	8	.04%
Class Level		
Freshman	0	0.0%
Sophomore	0	0.0%
Junior	158	81.0%
Senior	37	18.9%

Procedures. Data were collected using procedures similar to those employed in study one. Participants were asked to sign an informed consent and read general instructions. The participant was provided with a web address and password, and asked to complete the on-line questionnaire. The questionnaire, including measures of cognitive and emotional ability, confidence, background and performance items, took respondents approximately 35 to 45 minutes to complete.

Once they completed the assessment of their ability, confidence and calibration, respondents were told to put themselves in a situation in which they have the goal of maintaining their ideal weight, and that they need to decide what to eat for dinner from a menu at a local restaurant that offers a wide range of healthy or unhealthy options. Then they were asked to select from an online menu those food items that they would eat in that situation within the constraints of the goal. Once they had made their food choices, they were instructed to click on a submit button, which closed the window and opened up a new window that debriefed participants. The menu choices for the performance task are available on request from the authors. The debriefing sheet for all studies is provided in Appendix H.

Measures. The measures used to assess emotional ability were generated in study one. Additional measures were developed and employed in the current study to measure cognitive ability. Measures of cognitive and emotional confidence were based on confidence formats used in past research (e.g., Yates, 1990). The calibration construct is created based on the linear combination of ability and confidence and is calculated in the post data collection and analyses phase. Each measure used in study two is described below.

Emotional Ability. The newly developed measure called the consumer emotional ability scale (i.e., CEAS) was used in study two to examine the relationships in the proposed model (Figure 6-2). The complete CEAS instrument is provided in Appendix E.

Cognitive Ability. A measure of cognitive ability was generated for use in this study. This measure is similar to knowledge measures widely used in consumer research (e.g., Brucks 1985; Moorman et al. in press) and reflects objectively defined right or wrong responses of an individual's level of actual knowledge. Thus, cognitive ability items represent general and specific nutrition knowledge of fat contents of different food types,

including fruits, grains, meats, dairy and condiments. Respondents were asked to provide true/false responses to each knowledge question regarding whether one food has more fat than another food. Answers are assessed as right or wrong based on a nutrient analysis provided by the USDA guidelines. For example, participants were asked questions similar to the following; 1 cup of 2% milk contains more fat than 1 large Florida orange. The respondent answered either 'True' or 'False' in a forced choice item. The fat-content items were combined to form an overall nutrition knowledge score. The full list of cognitive knowledge measures are provided in Appendix I.

Cognitive Confidence. Cognitive and emotional perceptions of confidence were measured using subjective probability ratings developed and employed in past research (e.g., Kahneman and Lovallo 1993; Snizek, Paese and Switzer 1990). Typically, respondents answer a series of knowledge items, such as the two-alternative forced choice nutrition knowledge items described above, and for each item they are told to express their degree of confidence in their answer on a percentage scale, with a range of either 0-100% to 50-100%. This rating of confidence for one particular item is referred to as a single-item judgment (Treadwell and Nelson 1996). An alternate method to elicit confidence assessments involves an overall or summary numerical estimation of confidence. In this method, the respondent answers a question(s) regarding how many items were thought to be answered correctly. This type of confidence rating is referred to as aggregate-item judgment (Snizek et al. 1990). There is debate, however, over whether these measures reveal different degrees of confidence effects (Klayman, Soll, Gonzalez-Vallejo and Barlas 1999). While some researchers argued that the type of judgment rating has only small, if any, differences on the effects produced (e.g., Brenner, Koehler, Liberman, and Tversky 1996), a considerable

amount of research has indicated that aggregate-item assessments often elicit effects that are consistently lower in magnitude than single-item measures (e.g., Treadwell and Nelson 1996). Pronounced effects are elicited when both measures are converted to a common proportion scale (e.g., Griffin and Tversky 1992; Schneider 1995). Thus, the confidence items used in study two were measured with multiple single-item subjective probability judgments (i.e., ranging from 50% to 100%). The full list of cognitive confidence items, along with associated cognitive ability items can be found in Appendix I.

Emotional Confidence. Single-item confidence judgments were used to represent emotional confidence. These are similar to the cognitive measures, although they reflect subjective assessment of emotional abilities. For example, emotional confidence toward the ability to understand emotion (i.e., branch 3) might reflect confidence in emotional knowledge as well as confidence in how well the consumer understands emotions that are elicited in a given situation. The emotional confidence items are the same type of items used for cognitive calibration, although they assess confidence in emotional knowledge. The emotional confidence items were scored based on a proportional scoring method as used for cognitive confidence items. An emotional confidence item can also be found in Appendix J.

Cognitive and Emotional Calibration. A central issue of research on calibration is the degree of correspondence between confidence judgments and objective knowledge measures. A respondent is perfectly calibrated when the percentage of correct responses in a given range, matches the assigned confidence rating percentage exactly. Thus, if the actual percentage correct is less than the confidence percentage, then the respondent is overconfident because confidence exceeds knowledge. On the other hand, if the actual

percentage correct is greater than the confidence percentage, then the respondent is underconfident because knowledge exceeds confidence.

The *over/underconfidence* score (also referred to as bias or calibration-in-the-large) is one measure of the accuracy of a set of confidence judgments relative to objective assessments (Klayman, Soll, Gonzalez-Vallejo and Barlas 1999). It is computed by taking the difference between a person's mean confidence judgment (after converting to a proportion by dividing by 100) and a person's proportion of correct answers (Treadwell and Nelson 1996). A positive score indicates overconfidence bias, whereas a negative over/underconfidence score indicates underconfidence bias. The absolute value of the over/underconfidence score is referred to as *absolute bias*, which is the amount of discrepancy between confidence and objective knowledge assessments without regard to whether the mean confidence judgment is greater than or less than the proportion of correct answers (Treadwell and Nelson, 1996). Thus, the absolute value of the over/underconfidence score (referred to as *absolute bias*, hereafter) was used in the post data collection phase to assess calibration in study two.

Consumer Performance Measures. To assess performance, consumer *decision quality* was measured by the amount of fat intake per serving selected or purchased by the respondent. The fat intake measure was derived by summing the total amount of fat for one meal of consumption by the consumer, and then comparing that number to a USDA established guideline for healthy consumption quantities of fat. The healthy ranges of fat intake, according to the USDA guidelines are between 30g and 50g per day for women and 40g to 60g for men. Rather than create an artificial category dichotomy of fat knowledge into high and low groups, the performance outcomes were left as a continuous variable.

Thus, the lower the amount of fat grams, the higher the fat decision quality. The stimulus material for the performance task in study 2 is provided in Appendix K.

Demographic Information. Performance may be a consequence of other variables besides ability, confidence, and calibration. Past research on the effects of gender on performance suggests that males and females differ relative to their performance outcomes on a variety of tasks (Piercy, Cravens and Lane 2001). Further, females tend to outperform males on tasks that involve emotional reasoning, such as the reasoning involved in emotional intelligence (Mayer et al. 2003). Thus, the moderated affect of gender on the relationship between emotional ability and performance is assessed in study two. Females are predicted to outperform males in their ability to reason with and use emotions to perform the food choice task, such that, for females the relationship between emotional ability and decision quality is likely to be stronger than that of male respondents.

8.3 Results

Predictions developed in chapter 6 (see Figure 6-2) were tested in study two in an individual decision making context using OLS regression. Results are discussed relative to each construct. A correlation matrix, for study 2, of all variables in the conceptual model is provided in Appendix L.

It should be noted that consumer performance is operationalized as the lower the amount of fat selected. Thus, negative relationships in this results section would suggest positive associations between a predictor variable, such as ability, and decision quality.

Cognitive Ability. To test the relationship between cognitive ability and performance, overall decision quality was regressed on objective nutrition knowledge consisting of the

combined fat knowledge items ($R^2 = .166$, $t(1, 193) = -6.197$, $p < .01$). As predicted, cognitive ability significantly influenced consumer performance, in support of Hypothesis 1. This indicates that higher cognitive ability is associated with higher decision quality, via lower amounts of fat selected.

Emotional Ability. Using the newly developed consumer emotional ability scale (i.e., CEAS), the relationship between emotional intelligence and consumer performance was tested. Decision quality was regressed onto the CEAS total score ($R^2 = .132$, $t(1, 193) = -5.414$, $p < .01$). As predicted, the total score of emotional ability significantly influenced consumer performance in support of Hypothesis 2a.

A second regression was conducted to assess the impact of the four branches of emotional ability on individual performance. Decision quality was regressed onto the four abilities of perceiving, facilitating, understanding, and managing emotion ($R^2 = .150$). Findings are reported in Table 8-2.

Table 8-2. Emotional Abilities on Consumer Performance

Parameter Estimates	Beta	t value	Partial r
Emotional Ability			
Perceiving	-1.166	-1.882*	-.135
Facilitating	-.762	-1.092	-.079
Understanding	-2.443	-3.495**	-.246
Managing	-.743	-1.142	-.083

Note: * $p < .10$. ** $p < .05$.

As indicated in Table 8-2, the branch scores for perceiving (branch 1) and understanding (branch 3) were significant predictors (perceiving was marginally significant) of decision quality, whereas, the branch scores of facilitating (branch 2) and managing

(branch 3) emotion were less effective in predicting consumer performance, although these branches approached significance. These findings will be address in the discussion (section 8-4).

Further when cognitive ability was included in the model, emotional ability predicted decision quality beyond the effects of cognitive ability, in support of Hypothesis 2b.

Analyses are provided in Table 8-3.

Table 8-3. Emotional Ability Effects Beyond Cognitive Effects

Parameter Estimates	Beta	t value	Partial r
Emotional Ability	-2.561	-3.699*	-.258
Cognitive Ability	-449.256	-4.701*	-.321

Note: * $p < .01$. $R^2 = .221$

Cognitive Confidence. To test the relationship between cognitive confidence and consumer performance, overall decision quality was regressed on average confidence ratings ($R^2 = .039$, $t(1, 193) = -2.810$, $p < .01$). As predicted, cognitive confidence significantly influenced consumer performance, in support of Hypothesis 3.

Two sets of analyses were conducted to examine the moderated influence of cognitive confidence on consumer performance. In the first set of analyses, decision quality was regressed onto confidence ratings of nutrition knowledge. In the second set of analyses, the two-way interaction of confidence on the relationship between ability and performance was included. All variables in the model were mean centered to reduce multicollinearity. The hierarchical test of the main effects versus the full model was marginally significant ($F = 2.800$, $df = 1, 191$, $p = .096$) indicating that the moderating effect of cognitive confidence

explained a marginal amount of variance in decision quality. A summary of the cognitive confidence analyses is provided in Table 8-4.

Table 8-4. Cognitive Confidence on Consumer Performance

Parameter Estimates	Beta	t value	Partial r
Cognitive Ability	-511.273	-5.161**	-.350
Cognitive Confidence	-78.354	-.921	-.066
Ability x Confidence	1449.765	1.673*	.120

Note: * $p < .10$. ** $p < .05$. $R^2 = .182$

Further, the simple main effects at high and low levels of confidence were assessed. The 10th and 90th percentiles were used as cutoffs to represent low and high levels of the moderator variable. The nature of the two-way interaction (i.e., the slope at each level of confidence) on decision quality is contained in Table 8-5.

Table 8-5. Simple Effects of Cognitive Confidence as a Moderator of Ability and Performance

<i>Confidence</i>	<i>Level</i>	<i>Slope</i>	<i>t value</i>	<i>p value</i>
Cognitive	Low	-356.685	-2.171	.032
	High	-238.782	-.840	.404
Emotional	Low	-718.006	-3.321	.001
	High	-473.743	-.912	.365

In sum, a direct influence of cognitive confidence significantly influenced consumer performance, in support of Hypothesis 3, and a moderated influence of cognitive confidence was marginally significant on consumer performance, although not in the predicted direction. Instead of ability being predictive of consumer performance at high levels of confidence,

lower levels of confidence were significantly related to consumer performance. These findings partially support Hypothesis 4. Finding will be further addressed in the discussion section in chapter 10.

Emotional Confidence. To test the relationship between emotional confidence and performance, decision quality was regressed on average emotional confidence ratings ($R^2 = .037$, $t(1, 193) = -2.740$, $p < .01$). As predicted, emotional confidence significantly influenced consumer performance, in support of Hypothesis 5.

To assess the moderating impact of emotional confidence on the relationship between emotional ability and performance, two sets of analyses were conducted. In the first set of analyses, decision quality was regressed onto emotional confidence ratings and summary emotional ability score. In the second set of analyses, the two-way interaction of emotional confidence on the relationship between ability and performance was included. The hierarchical test of the main effects versus the full model was significant ($F = 14.837$, $df = 1, 191$, $p < .01$) indicating that the moderating effect of emotional confidence explained a significant amount of variance in decision quality. A summary of the emotional confidence analyses is provided in Table 8-6.

Table 8-6. Emotional Confidence on Consumer Performance

Parameter Estimates	Beta	t value	Partial r
Emotional Ability	-3.023	-4.510**	-.310
Emotional Confidence	-206.618	-1.879*	-.135
Ability x Confidence	26.811	3.852**	.268

Note: * $p < .10$. ** $p < .01$. $R^2 = .215$

Further, the simple main effects at high and low levels of confidence were assessed. The 10th and 90th percentiles were used as cutoffs to represent high and low levels of the moderator variable. The nature of the two-way interaction (i.e., the slope at each level of confidence) on decision quality is contained in Table 8-5.

As predicted, a direct influence of emotional confidence significantly influenced consumer performance, in support of Hypothesis 5. Further, the moderated influence of confidence was significantly related to consumer performance. However, in accord with cognitive confidence, the moderated influence of confidence on the relationship between ability and performance indicates that at low levels of confidence, ability is more predictive of consumer performance. These findings partially support Hypothesis 6, and will be addressed further in the discussion.

Cognitive Calibration. To test the effects of cognitive calibration on consumer performance, decision quality was regressed onto the absolute value of the over/underconfidence score; *absolute bias* ($R^2 = .016$, $t(1, 193) = 1.790$, $p = .075$). As predicted, cognitive calibration has a marginally positive influence on decision quality, in support of Hypothesis 7.

Emotional Calibration. To test the effects of emotional calibration on consumer performance, decision quality was regressed onto emotional *absolute bias* ($F(1, 193) = .584$, *ns*). Emotional calibration was non-significant on decision quality, failing to support Hypothesis 8.

Demographics. Gender was used as a moderator of the relationship between emotional ability and performance. Decision quality was regressed onto emotional ability, gender, and the product term of gender by ability ($F(3, 191) = 1.097$, *ns*).

8.4 Discussion

Findings in study 2 indicated that emotional ability predicts consumer performance beyond the effects of cognitive ability, supporting the importance of the emotional ability construct in consumer behavior. Mayer and colleagues (Mayer et al. 1997; 2000; 2003) indicated the importance of emotional intelligence within group interactions, although no research to date has examined the influence of emotional ability in individual decision making. These findings suggest that emotional ability can, in fact, have an important impact on individual consumer decision making effectiveness.

Specifically, the emotional abilities of *perceiving* and *understanding* emotion were significant predictors of consumer's ability to select healthy food choices. The perceiving branch is unique as it involves the skills of reading emotions in others, but also incorporates emotional reasoning about oneself. For example, being able to read the emotions in oneself may provide an advantage when making healthy food choices. If a consumer perceives a feeling of impulsivity when it first arises, he/she may be better equipped to deal with this emotion before it leads to unhealthy consumption. In addition, the ability to understand emotion, not only refers to an awareness of how emotions blend together to form more complex emotions, but also how emotions change over time. These individuals, as indicated in the findings of study 2, maybe more skilled when it comes to selecting healthy food choices, as pleasurable emotions during purchase and consumption may change later to more negative feelings of guilt and frustration. As shown, understanding these emotions may be beneficial to consumers when making consumption related decisions.

Findings in study 2 also revealed the impact that confidence can have on consumer decision making. The main effect of cognitive confidence indicated that the more confidence

consumers have in their knowledge, the better the decisions they tend to make. This supports findings in past research suggesting that consumers use their confidence to locate themselves near stimuli that allows them to make effective decisions (Moorman, et al. *in press*). What has not been studied previously is the effect of emotional confidence on consumer performance. It was shown in study 2, that emotional confidence has a significant impact on decision making. Emotional confidence not only had a significant direct impact on performance, but also a moderated influence on the relationship between emotional ability and decision quality. Although this relationship was not in the predicted direction, the findings indicated the importance of this construct in predicting consumer performance. The nature of the relationship indicated that at low levels of confidence, ability becomes a stronger predictor of performance. This seems to suggest that consumers who are less confident in how well they perceive, facilitate, understand and manage their emotions, are more likely to rely on or use that ability to make healthy food choice decisions.

Findings in study 2 also suggest that calibration between perceived and actual cognitive ability is an important component of decision making. Consumers who not only have acquired cognitive knowledge, but also are confident in their ability, were shown to make higher quality food choice decisions. Despite the significance of cognitive calibration, emotional calibration was not found to predict consumer performance.

CHAPTER 9

STUDY THREE

Overview. The goal of study three is to examine the influence of cognitive and emotional ability, confidence, and calibration on group decision making. One of the strengths of the EI framework is that it is directly applicable to understanding interpersonal

relationships. Research on EI, thus far, has indicated the importance of the influence of emotional abilities on numerous interpersonal interactions, including organizational leadership (Morand 2001), interview outcomes (Fox and Spector 2000), and marital satisfaction (Schutte, et al. 2001). However, to our knowledge, no research has been conducted on how emotional ability affects interactions among consumers when making decisions. Thus, one goal of study 3 is to provide a better understanding of how emotional abilities can influence consumer dyads when they work together to make food choices.

Another goal of study 3 is to assess the affect of confidence in cognitive and emotional abilities on group decision making performance. Confidence, or subjective knowledge, is analyzed both as a direct and moderated influence of the relationship between ability and decision quality. Confidence may provide a unique influence on the ability of the group to make better quality decisions. If consumers are confident in their cognitive ability, they may be better equipped to make food choice decisions (Moorman et al. in press). However, what has not been identified in past research is how confidence in *emotional* abilities affects the quality of, not only a consumer's decision, but of the dyad's decision.

Finally, we will assess the influence of calibration of a consumer's ability and confidence. Past research (e.g., Klayman et al. 1999) has found that individuals who are overconfident may make poorer quality decisions. Thus, a third goal of study 3 is to identify how group calibration influences the dyad's performance of making a high quality food choice decision.

9.1 Method

Sample and Data Collection. A total of 236 undergraduate business students participated in study three. These participants were formed into dyads to assess group

performance. The groups were composed of 27 male-male groups, 39 female-female groups, and 53 male-female groups. The demographic characteristics of the sample are provided in Table 9-1.

Table 9-1. Demographic Characteristics of Study Three

<i>Variable</i>	<i>Frequency</i>	<i>Percentages</i>
Gender		
Male	107	45.0%
Female	131	55.0%
Age		
18-19	8	3.4%
20-21	172	72.3%
22-23	46	19.3%
>24	12	2.8%
Class Level		
Freshman	0	0%
Sophomore	0	0%
Junior	182	76.5%
Senior	55	23.1%
Graduate	1	.04%

Procedures. Data were collected using procedures similar to those employed in study one and two. Participants were asked to sign an informed consent and read general instructions. The participants were then provided with a web address and password, and asked to complete the on-line questionnaire, which included measures of cognitive and emotional ability, confidence, and background items. Respondents completed the survey in approximately 35 to 40 minutes. Once the participants had completed the initial individual level ability, confidence and calibration instruments, they were randomly paired and asked to provide an identification number (as a means to track the individual with the group responses). The dyads were asked to plan a dinner party for a student organization, and that a local restaurant offered to cater the dinner free of charge. The dyad's task then was to create a menu to be served at the dinner party. They were instructed to discuss the menu and

reach a joint decision. We constrained the goals in this task to; 1) selecting foods including appetizers, desserts and drinks that would appeal to a wide variety of individuals, and 2) that the dinner should also be appropriate for those individuals who are trying to reduce their level of fat consumption.

The dyads were then told to select food items from a menu provided (the same menu provided in study 2) for one person only and that this selection would be used for all the people at the party. Once they had made their food choices, they were instructed to click on a submit button, which closed the window and opened up a new window that debriefed participants about the objectives and discussed any potential risks to completing the survey. The stimulus material for the performance task in study 3 is provided in Appendix M.

Measures. The measures used to assess cognitive and emotional ability, confidence and calibration are the same instruments were used in study 2. The performance outcome is based on group success. We used a simple averaging rule to aggregate the individual ability, confidence and calibration scores for each dyad.

Dyad performance was measured by the amount of fat intake selected by the dyad. The performance measures were derived by summing the total amount of fat for all the foods selected. As before, the lower the level of fat for the entire meal, the higher the decision quality.

Demographic Information. The background variable gender was assessed as a potential covariate. It is possible that males and females might differ relative to their emotional ability when selecting healthy foods. Thus, *gender* was tested as a moderator of the relationship between emotional ability and performance.

9.2 Results

Predictions developed in chapter 6 (see Figure 6-2) were tested in study three in a group decision making context using OLS regression. Results are discussed relative to each construct. Again, note that decision quality is operationalized as the lower the amount of fat selected. Thus, negative relationships suggest positive associations between the predictor (e.g., ability) and decision quality. A correlation matrix, for study 3, of all variables in the conceptual model is provided in Appendix N.

Cognitive Ability. Overall decision quality was regressed on averaged dyad objective nutrition knowledge to test the relationship between cognitive ability and dyad performance, ($R^2 = .422$, $t(1, 117) = -9.238$, $p < .01$). As predicted, cognitive ability significantly influenced dyad level performance, in support of Hypothesis 1.

Emotional Ability. The relationship between dyad's averaged emotional intelligence and group performance was tested. Decision quality was regressed onto the CEAS total score ($R^2 = .201$, $t(1, 117) = -5.424$, $p < .01$). As predicted, emotional ability significantly influenced dyad level performance, in support of Hypothesis 2a.

A second regression was conducted to assess the impact of the four branches of emotional ability on dyad performance. Decision quality was regressed onto the four abilities of perceiving, facilitating, understanding, and managing emotion ($R^2 = .217$). Findings are reported in Table 9-2.

Table 9-2. Emotional Abilities on Dyad Performance

Parameter Estimates	Beta	t value	Partial r
Emotional Ability			
Perceiving	-3.399	-1.467	-.136
Facilitating	-3.205	-1.305	-.108
Understanding	-5.930	-2.228*	-.185
Managing	-4.524	-2.007*	-.166

Note: * $p < .05$.

As indicated in Table 9-2, for fat content decision quality, the emotional abilities of *understanding* and *managing* significantly influenced dyad performance, while the abilities of *perceiving* and *facilitating* were not significant.

Further when averaged cognitive ability was included in the model, emotional ability predicted decision quality beyond the effects of cognitive ability, in support of Hypothesis 2b. Analyses can be found in Table 9-3.

Table 9-3. Emotional Ability Beyond the Effects of Cognitive Ability

Parameter Estimates	Beta	t value	Partial r
Emotional Ability	-4.559	-2.166*	-.197
Cognitive Ability	-1991.422	-7.127*	-.493

Note: * $p < .05$. $R^2 = .444$

Cognitive Confidence. Overall decision quality was regressed on averaged confidence ratings to test the relationship between averaged cognitive confidence and dyad performance, ($R^2 = .116$, $t(1, 117) = -3.909$, $p < .01$). As predicted, cognitive confidence significantly influenced consumer performance, in support of Hypothesis 3.

Two sets of analyses were conducted to examine the moderated influence of averaged cognitive confidence on dyad performance. In the first set of analyses, decision quality was regressed onto averaged confidence ratings. In the second set of analyses, the two-way interaction of cognitive confidence on the relationship between cognitive ability and dyad performance was included. All variables in the model were mean centered to reduce multicollinearity. The hierarchical test of the main effects versus the full model was non-significant ($F = .979$, $df = 3, 115$, ns) indicating that the moderating effect of averaged cognitive confidence did not explain a significant amount of variance in dyad decision quality. A summary of the cognitive confidence analyses is provided in Table 9-4. Simple main effects at high and low levels of confidence were not assessed as a result of the non-significant interaction effect.

Table 9-4. Averaged Cognitive Confidence on Dyad Performance

Parameter Estimates	Beta	t value	Partial r
Cognitive Ability	-2120.261	-8.202*	-.608
Cognitive Confidence	-736.520	-2.510*	-.228
Ability x Confidence	-101.725	-.027	-.003

Note: * $p < .05$. $R^2 = .452$

In sum, a direct influence of cognitive confidence significantly influenced dyad performance, in support of Hypothesis 3, however a moderated influence of cognitive confidence was not significant on dyad performance. These findings fail to support Hypothesis 4.

Emotional Confidence. Decision quality was regressed on averaged emotional confidence ratings to test the relationship between emotional confidence and dyad

performance, ($t(1, 117) = -.275, ns$). The influence of emotional confidence on dyad performance did not support of Hypothesis 5.

Two sets of analyses were conducted to assess the moderating impact of emotional confidence on the relationship between group emotional ability and dyad performance,. In the first set of analyses, decision quality was regressed onto emotional confidence ratings and emotional ability total score. In the second set of analyses, the two-way interaction of emotional confidence on the relationship between ability and performance was included. The hierarchical test of the main effects versus the full model was non-significant ($F = .734, df = 3, 114, ns$) indicating that the moderating effect of averaged emotional confidence did not explain a significant amount of variance in dyad decision quality. A summary of the emotional confidence analyses is provided in Table 9-5. Simple main effects at high and low levels of confidence were not assessed as a result of the non-significant interaction effect.

Table 9-5. Emotional Confidence on Consumer Performance

Parameter Estimates	Beta	t value	Partial r
Emotional Ability	-12.191	-5.346*	-.448
Emotional Confidence	215.068	.650	.061
Ability x Confidence	11.511	.341	.032

Note: * $p < .05$. $R^2 = .202$

Surprisingly, a direct influence of emotional confidence did not significantly influence dyad performance, thus, failing to support Hypothesis 5. Further, the moderated influence of emotional confidence was not significantly related to dyad performance. These findings fail to support Hypothesis 6, and will be addressed further in the discussion.

Cognitive Calibration. Decision quality was regressed onto the averaged calibration bias to test the effects of cognitive calibration on dyad performance, ($R^2 = .156, t(1, 117) =$

4.642, $p < .01$). As predicted, cognitive calibration has a positive influence on decision quality, in support of Hypothesis 7.

Emotional Calibration. Decision quality was regressed onto emotional calibration *bias* to test the effects of emotional calibration on dyad performance, ($R^2 = .136$ $t(1, 116) = 4.278$, $p < .01$). As predicted, emotional calibration has a positive influence on decision quality, in support of Hypothesis 8.

Demographics. The background variable of gender was assessed relative to performance. *Gender* was used as a moderator of the relationship between emotional ability and group performance. Decision quality was regressed onto emotional ability, gender, and the product term of gender by ability ($t(3, 115) = -.462$, *ns*). Gender was not a significant moderator of the relationship between emotional ability and group performance.

9.3 Discussion

Findings in study 3 indicated that emotional ability predicts group performance beyond the effects of cognitive ability, providing further support for the value of emotional intelligence in consumer decision making. Group interactions have primarily been the focus of past work in the area of emotional intelligence, although there are no marketing applications of this theory. Study 3 examined the role of emotional abilities, confidence in those abilities, and calibration between what is known and what is perceived to be known, when making decisions within a dyad. The findings in study 3 suggest that emotional ability can, in fact, have an important impact on the quality of dyadic decision making.

Specifically, the emotional abilities of *understanding* and *managing* emotion were significant predictors of the dyad's ability to select healthy food choices. The understanding branch is important as it involves knowing how emotions work together, how the blend to

form complex emotions, and how emotions can change over time. This emotional ability may be critical to successful negotiation within the dyad. If one member of the group is able to understand how emotions of guilt and frustration might arise when unhealthy food choices are made, and how those emotions are blended to form emotions such as anxiety, then they may also be able to understand that feelings of anxiety, rooted in this frustration, may change over time to form anger and hostility. With an understanding of these complex emotions, group members may be better equipped to choose menu options that had lower fat contents, than those who were not able to fully understand emotions.

The significant influence of *managing* emotion on group performance is important since this branch pertains to a person's ability to not only manage their own emotion, but also the ability to manage the emotions of others. This ability is critical in negotiating within a group to persuade the other member. Within this interaction, an individual who possesses the skill of managing the emotions of others, may be effective at influencing the other member of the dyad to go along with a healthy food choice, when a different, albeit, less healthy option is desired. This skill along with the ability to understand emotion has an impact on the quality of the dyad's decision.

Further, findings in study 3 also revealed the limited impact that confidence has on group interactions. Cognitive confidence appeared to have a significant affect on group performance, thus, when an individual within the group is confident in his/her knowledge of nutrition, they are likely to suggest food choices that are known to be low in fat, and not waver in that knowledge. Someone with less confidence in their ability may leave themselves open to be dissuaded into another less healthy option.

Neither cognitive nor emotional confidence moderated the relationship between ability and group performance. This suggests that even though it is better to be confident, and knowledgeable when making group decisions, confidence does not change the strength of the relationship between ability and group performance. Thus, ability at both high and low levels of confidence, predict group performance.

Findings in study 3 also suggest that calibration between perceived and actual ability is an important component of group decision making. Although this construct has been studied in past research, no work to our knowledge has attempted to understand the influence of calibration within a group interaction. Study three indicated that groups whose members were well calibrated on average tended to make better decisions. This finding suggests that groups in which confidence and ability corresponded on average, tended to be better able to make higher quality food choices. In addition, emotional calibration was a significant predictor of performance, only at the group level. This suggests that emotional calibration between confidence and ability may not be an important component of individual decision making, although when interacting with others, being overconfident in your emotional ability may reduce decision quality.

CHAPTER 10

10.1 General Discussion

The newly developed scale of emotional ability (i.e., CEAS) may provide an effective means to assess levels of emotional ability in consumer decision making that may lead to a variety of outcomes, including; 1) better performance of consumers, 2) better ways to appeal to consumers, 3) more effective ways consumers can interact to achieve desired outcomes,

and 4) provide marketers with a means for selecting and targeting specific consumers likely to purchase or consume their product or service.

The proposed research is significant in several respects. With advances in empirical understanding of the underlying dimensions of emotional ability, and developments in conceptual models of emotional intelligence, research can now begin to develop useful instruments to determine a consumer's level of emotional intelligence. With this information, researchers can begin to understand how these emotional abilities influence, not only individual decision making, but also group interactions.

10.2 Summary of Studies.

Study One. Study one involved the development and assessment of a consumer emotional ability scale called the CEAS. The CEAS was created and compared with the leading instrument of emotional intelligence in the psychological literature called the MSCEIT (Mayer et al. 2003). These instruments correlated at $r = .481$, suggesting that they are similar constructs of emotional intelligence, although different enough to support the domain specific nature of the CEAS. After a number of tests of its structure and reliability, the CEAS's validity was assessed using a multitrait-multimethod analysis. The CEAS was found to meet or exceed expected levels of convergence and discrimination when compared to the MSCEIT. The CEAS was also found to display adequate nomological validity in predicting constructs known to be related to emotional intelligence, such as, self-monitoring, compulsive behavior, and life satisfaction. The CEAS outperformed the MSCEIT in predicting compulsive behaviors. This outcome is likely due to the consumer domain specific nature of the CEAS instrument, providing further confidence in the validity of the newly developed instrument.

Study Two. Study two involved the analysis of the impact of emotional ability on individual decision making performance, via a healthy food choice task. Emotional ability was found to influence performance beyond the effects of cognitive ability. The impact of emotional ability in individual decision making is important because research in the psychological literature has identified it as an important contributor to group interaction outcomes, such as, marital satisfaction. However, little if any, research has examined the influence of emotional ability in a marketing context or with individual consumer decision making. In addition, findings from study two indicated that cognitive and emotional confidence were predictors of the quality of an individual's decision. Further, cognitive and emotional confidence significantly moderated the relationship between ability and performance. Contrary to predictions of higher levels of confidence strengthening the relationship, we found that lower levels of confidence strengthened the relationship between ability and performance. This suggests that, although high confidence influences performance, low confidence facilitates the use of ability as a predictor of performance. Thus, if you are confident in your ability, regardless of whether you possess this ability, your performance is enhanced. On the other hand, if you are not confident in your knowledge, you are then likely to access this knowledge to help facilitate performance. Therefore, consumers may perform successfully for different reasons based on whether they are confident in their perceptions of their knowledge. If they are high in confidence, they may perform well because they believe they will perform well, and thus are motivated to orient themselves toward making the correct decision, as suggested in past research (Moorman, et al. in press). Whereas if they are low in confidence, they may perform well because they

realize they are not confident in their knowledge, and thus, are motivated to use this knowledge the best they can.

A related finding in study two indicated that consumers who are miscalibrated (either overconfident or underconfident) performed considerably worse than those consumers who are well calibrated between confidence and ability. This suggests that being highly confident can lead to better performance, but only when the individual actually has at least a moderate level of cognitive ability. If the consumer thinks he/she knows a lot about nutrition, but really knows very little, then this individual is likely to make low quality decisions. The more effective decision maker is one who, not only has a high level of knowledge in a domain such as nutrition or product attributes but also believes that he/she has a high level of knowledge in that domain. This relationship appears to only hold for cognitive calibration, and not emotional calibration in individual decision making. Thus, individuals who believe they are good at perceiving, facilitating, understanding, and managing emotion tend to perform better, regardless of whether they actually possess these abilities.

Additionally, the correlation matrix of relevant constructs in study 2 (see Appendix L) indicates very little multicollinearity between constructs; particularly the correlation between cognitive ability and emotional ability ($r = .350$), and cognitive and emotional confidence ($r = .503$). Further, when examining correlations across constructs of ability and confidence, the findings further indicate very little multicollinearity among constructs; cognitive ability and cognitive confidence ($r = .333$), emotional ability and emotional confidence ($r = .130$).

Study Three. Emotional ability influenced performance beyond the effects of cognitive ability, providing confidence in the importance of emotional intelligence in

consumer decision making, for both individual and group level performance. Confidence, on the other hand, had mixed results in a group setting. Cognitive confidence was a strong predictor of group success. Thus, like individual decision making, when in a dyad, having confidence in one's cognitive ability can be very beneficial to overall performance.

However, having confidence in one's emotional ability is not predictive of success when interacting within a dyad. For emotions, success is more relative to whether one possesses emotional abilities, rather than whether one thinks he/she possesses those abilities. This finding is in contrast to the individual context in study two, in which emotional confidence strongly predicted overall performance. This suggests that when working with others, having emotional ability is essential for success. Merely having confidence in one's emotions is not likely to influence performance.

Further, both cognitive and emotional confidence did not significantly moderate the relationship between ability and performance. In other words, confidence did not strengthen the relationship between ability and performance, suggesting that ability is predictive of performance regardless of the level of confidence. This finding is unique because confidence significantly moderated both cognitive and emotional ability on performance in an individual decision making context in study 2. Therefore, it is likely that confidence is more important when making decisions individually. When alone, confidence not only predicts success, but also changes the nature of the relationship between ability and performance; whereas in a group, possessing actual cognitive and emotional abilities facilitates success, regardless of levels of confidence.

Finally, in study 3, cognitive and emotional calibration was a significant predictor of group success. This contrasts with the individual context of study 2, in which cognitive and

emotional calibration was non-significant. Again, actual ability is essential in success, since the effect of calibration indicates that if you are confident in your ability, you also must actually possess that ability. Likewise, if you do not possess a high level of ability, then it is important that one realizes he/she does not possess that knowledge or ability. Thus, when interacting within a dyad, whether it is two friends discussing where or what to eat for lunch, or a salesperson interacting with a prospective customer, calibration is important.

The correlation between relevant constructs (see Appendix N) suggests that there was little multicollinearity between constructs. Cognitive ability and emotional ability correlated at $r = .489$, cognitive confidence and emotional confidence at $r = .179$, cognitive ability and cognitive confidence correlated at $r = .266$, and emotional ability and emotional confidence at $r = .076$.

10.3 Research Contributions

The present research makes a contribution in terms of understanding the emotional abilities that underlie performance in marketing. The theory of emotional intelligence suggests that it can be an important construct when examining interactions among individuals within groups. In the present research, we extended this theory into the marketing domain, and in both a group and an individual context. We attempted to do this, while at the same time identify the impact of this construct in the domain of consumer decision making. With a better understanding of emotional abilities in the decisions made by consumers, we can have a richer knowledge of how consumers think and feel when deciding between different foods, restaurants, or products, and when interacting with other consumers or sales employees. Based on this research, emotional intelligence is an important variable in

consumer decision making and should be considered when studying the affect, cognition, and behavior of consumers.

Additionally, we contributed to the theory of emotional intelligence by developing a domain specific scale of consumer emotional ability called the CEAS. It should be noted that this scale is not meant to replace or nullify the use of the MSCEIT. The CEAS was not developed as a diagnostic tool, rather it provided an extension of the MSCEIT as a research tool to assess levels of emotional intelligence in the domain of consumer behavior. The general nature of the MSCEIT, along with the need to incorporate additional measures of cognitive ability and cognitive and emotional confidence, made the development of the CEAS essential to the present research.

This research additionally contributed to the understanding of confidence or subjective knowledge perceptions. In this research, relationships among perceptions of confidence and ability were uncovered that can have important effects on performance, particularly individual level performance. Consumers who have at least a moderate level of ability, and who are quite confident in that ability, will often make higher quality food choice decisions than a consumer who is less confident but possesses the same amount of ability.

This relationship held when a consumer is making individual decisions about what to eat, or potentially about what to buy. Thus, when consumers have confidence in their ability, they are more likely to make better decisions. Further, this research uncovered a mechanism by which consumers with lower levels of confidence may access and rely on their ability to make decisions, more so than those with high confidence.

This research also contributed to the understanding of how calibration may work in consumer decision making. Calibration was found to influence decision quality, particularly

in the context of group decisions. This suggests that confidence is useful when making individual decisions, but when interacting with others to achieve a goal, consumers whose confidence corresponds highly with their ability are more likely to accomplish that goal, and have more success in doing so. Thus, consumers who are overly confident may succeed when deciding individually, but when working with others, overconfidence can hinder the success of that dyad. This influence of calibration on group performance provides further insights about how human errors in judgment can affect performance outcomes in marketing contexts.

From a performance perspective, results from this research on emotional ability, confidence and calibration, can potentially enable consumers to effectively use emotional abilities in situations where individual decisions must be made such as what product to buy, what stores to shop at, and what foods to eat to maintain a healthy diet. Emotional ability can be useful in group level decisions such as interacting with a salesperson to buy a product, talking with one's spouse about a purchase, or even planning a dinner party for guests. This theory is widely applicable to numerous marketing and consumer domains.

In sum, this research focuses on understanding how individuals perceive, facilitate, understand and manage their emotions, and how these emotional abilities influence performance in marketing. This research also addressed how confidence, and the influence of calibration can influence the quality of a decision both in an individual and group context. The goals of this research have been to identify differences among consumer's levels of cognitive and emotional ability confidence and calibration with respect to performance outcomes, and to provide marketers with the necessary understanding of how emotions and emotional ability affects marketing decisions and the outcomes of those decisions, potentially

allowing for more effectively targeting of individuals based on their ability, confidence and calibration.

10.4 Directions for Future Research

Substantive Directions. Consumer decisions are important application of emotional ability, with individual and group level decisions made daily. One marketing application that may be affected by emotional intelligence is the buyer-seller interaction. This area is of significance since interpersonal interactions between buyers and sellers are considered to involve both cognitive and emotional components (Goff et al. 1994), yet our understanding of this area remains limited (Rentz 2002). In particular, emotional abilities of sales people in buyer-seller interactions could be examined to assess their impact on salesperson performance. Although not formally tested in this research, the effectiveness in closing a sale is likely to be positively related to other dependent variables such as relationship building and customer satisfaction. Additionally, firm performance may also be a positive outcome of a salesperson's use of emotional ability when interacting with customers. A sales force hired and trained in applying emotional intelligence in a sales encounter can generate increased profits, revenues, and even market share, through effectively closing sales, creating loyalty, and satisfying customers.

Methodological Directions. Although this research identifies the impact of both individual and group level decisions that were significantly related to performance, future research is required to provide a more complete understanding of how emotional intelligence affects interactions between individuals. Holding levels of cognitive ability constant, researchers could begin to understand the optimal combination of cognitive and emotional abilities between members of an interaction. For example, can high emotional ability make

up for deficiencies in cognitive ability, or is it an additive model, where the more cognitive and emotional ability the individual possesses the better their decisions become? And if cognitive ability is sufficiently high, at what point does emotional ability benefit the decision process? Much research is needed to further understand the impact of this construct on consumer behavior. There is little doubt, however, that emotional intelligence can become a focal component for numerous exchange relationships in all aspects of marketing.

APPENDIX A

Pretest: Elicitation of Emotion in Consumer-Related Situations

Please list 5 marketing or consumer-related situations in which yours or other people's emotions were evoked or stirred up, and how it made you feel.

Example: I went to the store yesterday, and my favorite brand of shampoo was out of stock, and it made me feel frustrated and upset.

1) _____

2) _____

3) _____

4) _____

5) _____

APPENDIX B

Pretest: Emotional Facilitation Elicitation

Please indicate what emotions might be useful in the situations provided:

What emotions might be useful when interacting with an aggressive salesperson?

What emotions might be useful when consuming unhealthy food?

What emotions might be useful when receiving poor customer service at your favorite restaurant?

What emotions might be useful when interacting with an incompetent employee?

APPENDIX C

Pretest: Emotional Blending Elicitation

Please list the emotions that can be combined to form the emotion indicated in each question:

Hostility is the combination of which emotions:

Guilt is the combination of which emotions:

Happiness is the combination of which emotions:

Depression is the combination of which emotions:

Anxiety is the combination of which emotions:

APPENDIX D

Pretest: Emotional Management Elicitation

Please read each short story and then indicate in the spaces provided what actions might be effective in changing or maintaining the character's emotions in that situation.

Story 1:

Debbie just came back from a day of clothes shopping. She was feeling peaceful and content. What actions would preserve her emotions?

(Example: She should think about where and when she will go shopping next time.)

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____

Story 2:

John just came back from the grocery store. He was feeling stressed and upset because his favorite brand of deodorant was out of stock. What actions would reduce his frustration?

(Example: He should go to another store to see if they carry his favorite brand.)

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____

Story 3:

Steve is interested in buying a new car. While at a local dealership, he is feeling angry and frustrated because of the aggressive sales tactics being employed. What actions would reduce his anger?

(Example: He should become angry and demand better service from the salesperson.

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

APPENDIX E

Consumer Emotional Ability Scale (CEAS)

Instructions


We are interested in people's emotions and the role that they play in everyday situations. Specifically, we would like to examine the emotions that accompany important consumer decisions. For this study, we will be asking you to fill out a questionnaire regarding your opinions and feelings about various products and buying situations.


Please keep in mind that there are no right or wrong answers. We are only interested in your honest responses. Please make sure you answer every question, moving through the questionnaire without going back to previous answers. If you have any questions or if anything is unclear, please feel free to ask the researcher for clarification at any time. Thank you for your participation.


Please circle the number that corresponds to the emotion expressed in each face.


Please use the following scale to indicate how much each emotion is present:


- 1 = Not at all present
- 2 = Slightly present
- 3 = Moderately present
- 4 = Quite present
- 5 = Extremely present

	Indicate the emotions expressed by this face.					
	Happy	1	2	3	4	5
	Interest	1	2	3	4	5
	Anxiety	1	2	3	4	5
	Surprise	1	2	3	4	5

	Indicate the emotions expressed by this face.					
	Afraid	1	2	3	4	5
	Sad	1	2	3	4	5
	Anger	1	2	3	4	5
	Frustration	1	2	3	4	5

	Indicate the emotions expressed by this face.					
	Disinterest	1	2	3	4	5
	Arrogant	1	2	3	4	5
	Disgust	1	2	3	4	5
	Interest	1	2	3	4	5

	Indicate the emotions expressed by this face.					
	Disinterest	1	2	3	4	5
	Disgust	1	2	3	4	5
	Sad	1	2	3	4	5
	Fear	1	2	3	4	5

	Indicate the emotions expressed by this face.					
	Happy	1	2	3	4	5
	Guilt	1	2	3	4	5
	Surprise	1	2	3	4	5
	Arrogance	1	2	3	4	5

Instructions: For each question below, please indicate how helpful/useful each emotion listed would be relative to each situation described below.

What emotion(s) might be useful to feel when interacting with an aggressive/pushy salesperson at an auto dealership?

	<i>Not Useful</i>			<i>Useful</i>	
Tension	1	2	3	4	5
Hostility	1	2	3	4	5
Frustration	1	2	3	4	5

What emotion(s) might be useful to feel when consuming unhealthy food when you maintaining a diet?

	<i>Not Useful</i>			<i>Useful</i>	
Joy	1	2	3	4	5
Guilt	1	2	3	4	5
Frustration	1	2	3	4	5

What emotion(s) might be useful to feel when you are receiving poor customer service at your favorite restaurant?

	<i>Not Useful</i>			<i>Useful</i>	
Dissatisfaction	1	2	3	4	5
Anger	1	2	3	4	5
Relaxation	1	2	3	4	5

What emotion(s) might be useful to feel when going to buy something expensive and important and have to interact with incompetent/unknowledgeable sales people?

	<i>Not Useful</i>			<i>Useful</i>	
Tension	1	2	3	4	5
Joy	1	2	3	4	5
Hostility	1	2	3	4	5

Instructions: For the next set of questions, please select the emotional response that is the most likely to be felt in the situations described below.

Joe felt anxious and became stressed when he thought about having to negotiate a price with a car dealer when buying a new car. When the dealer became pushy and began aggressively negotiating the price, Joe then felt ____.

- a) Self-conscious
- b) Depressed
- c) Ashamed
- d) Overwhelmed
- e) Happy

Karen thought long and hard about what to get for her best friend's birthday. When she gave the gift to her friend, the friend didn't seem to appreciate all of the effort put into picking out the gift. Karen then felt ____.

- a) Envious
- b) Anxious
- c) Disappointed
- d) Overwhelmed
- e) Dissatisfied

Steve was really happy now that he bought the car that he always wanted. In addition, the salesperson who he interacted with was very friendly and genuinely seemed to care about his needs. Steve then felt ____.

- a) Blissful
- b) Proud
- c) Embarrassed
- d) Disappointed
- e) Pleased

John was in a hurry to eat lunch before an afternoon meeting. When John stopped at a fast food restaurant, he was happy to see that there were healthy food choices on the menu. After reading the nutritional information he was even more pleased about the choice he made, he felt very ____.

- a) Depressed
- b) Content
- c) Unsure
- d) Fatigued
- e) Active

Instructions: For the next set of questions, please select the option that best represents the actions that proceeded and then followed the emotions described in each section below.

A woman and her husband were at a restaurant and felt upset, then they felt satisfied. What happened in between?

- a) they left the restaurant, and then told all of their friends not to eat there
- b) they had a glass of wine, and it didn't taste good
- c) they complained about poor service, and had their meals paid for by the restaurant
- d) they became very angry and refused to pay for their meals
- e) they ate their meal and then they forgot about the situation

A man went into an electronics store feeling rested and then felt anxious. What happened in between?

- a) he couldn't find brand of cell phone he wanted
- b) he saw an old friend that he hadn't seen in several years
- c) he found an alternative product that he liked almost as well
- d) he was approached by an aggressive sales person
- e) he was helped by a cashier whom he thought he recognized

A young woman went into a grocery store happy and left the store feeling sad. What happened in between?

- a) she noticed an elderly lady passing out free samples of food
- b) she went to buy her favorite product and it wasn't there
- c) she was buying products that made her feel uncomfortable talking to the cashier
- d) she realized she had a lot of things to do in the afternoon
- e) she was treated rudely by the cashier

A woman went to an auto dealership nervous and left feeling relieved. What happened in between?

- a) she insulted the salesperson after he was rude to her
- b) she accidentally called the salesperson by the wrong name
- c) she was assured by the salesperson that he would not pressure her into buying a car
- d) she looked at cars for hours and found a couple cars that might work for her
- e) she noticed that the dealership had a lot of cars on their lot to choose from

A young man was returning expensive clothes. He felt embarrassed and then he felt angry. What happened in between?

- a) he realized that he should not have bought the clothes in the first place
- b) he saw an old friend in the store who was in a hurry and couldn't talk
- c) he decided that he couldn't afford the clothes after all
- d) he was encountered by a salesperson who was suspicious of his intentions
- e) he realized that he lost one of the items he wanted to return

A man watched a TV commercial. He felt sad and then he felt guilty. What happened in between?

- a) the commercial was offensive and made him not want to watch anymore.
- b) the commercial was inspiring and made him think about an old relationship
- c) the commercial was thoughtful and made him think about losing touch with an old friend
- d) the commercial was strange and made him think about his years growing up
- e) the commercial was interesting and made him think about a new career path

A woman purchased an important item. She felt angry then later felt happy. What happened in between?

- a) she realized that her purchase was actually cheaper at another store, so she took it back
- b) she thought at first she had been pushed into buying the item, but then realized how good of deal she had received
- c) she argued with the salesperson at the store and then realized the salesperson was just doing her job
- d) she used the product so often that it finally stopped working
- e) she took the item home and was surprised at what a good deal she received

Instructions: For this set of questions, please select the group or combination of emotions from the ones listed below that best represent the underlined word for each section.

Hostility is a combination of which group of three emotions listed below:

- a) Hopelessness, Astonishment, Loneliness
- b) Fear, Envy, Surprise
- c) Aggression, Anger, Arousal
- d) Anxiousness, Aggression, Nervousness

Guilt is a combination of which group of three emotions listed below:

- a) Envy, Fatigue, Hopelessness
- b) Sadness, Fear, Insecurity
- c) Hopelessness, Sadness, Loneliness
- d) Anxiousness, Fear, Nervousness

Anxiety is a combination of which group of three emotions listed below:

- a) Arousal, Fatigue, Anxiousness
- b) Activeness, Surprise, Nervousness
- c) Fatigue, Arousal, Anger
- d) Nervousness, Arousal, Anxiousness

Happiness is a combination of which group of three emotions listed below:

- a) Envy, Joy, Pride
- b) Pleasure, Activeness, Arousal
- c) Joy, Pleasure, Satisfaction
- d) Satisfaction, Joy, Excitement

Depression is a combination of which group of three emotions listed below:

- a) Envy, Sadness, Fatigue
- b) Hopelessness, Loneliness, Sadness
- c) Pity, Envy, Insecurity
- d) Dissatisfaction, Boredom, Loneliness

Instructions: For the next set of questions, please circle the number for each action that you feel best represents how the individual described in the passage would preserve, reduce, or maintain his/her emotions.

Debbie just came back from a day of clothes shopping. She was feeling peaceful and content. How well would each action preserve Debbie's emotions?

Action 1: She started to make a list of things at home that she needed to do.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: She began thinking about where she would go next time she had a day for shopping.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 3: She began making entries in her budget for the things she had purchased.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: She decided it was best to ignore the feeling since it wouldn't last anyway.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Joe is in the process of buying a new car. Although he found the car he wanted, the salesperson is very aggressive and pushy. Joe is trying hard to not be upset during the negotiation, but he is becoming quite angry. How well would each action help Joe reduce his anger?

Action 1: *He should become defensive and sarcastic when talking to the salesperson.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: *He should report his dissatisfaction to someone in charge.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 3: *He should just ignore the aggressive tactics and test drive the car as suggested.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: *He should leave the dealership and go somewhere else to buy a car.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

John went to his favorite clothing store where he saw a shirt that he wanted to buy last week. He felt stressed and frustrated because the shirt that he wanted was no longer there. What actions could John take to reduce his frustration?

Action 1: *He should complain to the manager about keeping more shirts in stock.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: *He should discontinue shopping at that store.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 3: *He should look around the store for another shirt that he might like as much.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: *He should go home and look on the Internet for the shirt.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Cindy is running late. She needs to stop at the grocery store for some items before she it gets any later. But when she gets to the check out lines, there are long lines. What actions could Cindy take to reduce her anxiety and worry?

Action 1: *She could be rude to the cashier because she will be late.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: *She could leave the store and try to find another store that would have shorter lines.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

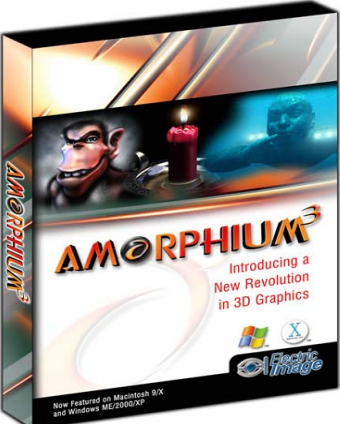
Action 3: *She could complain to the store manager about the poor service.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: *She could call the person whom she is meeting and explain the situation.*

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

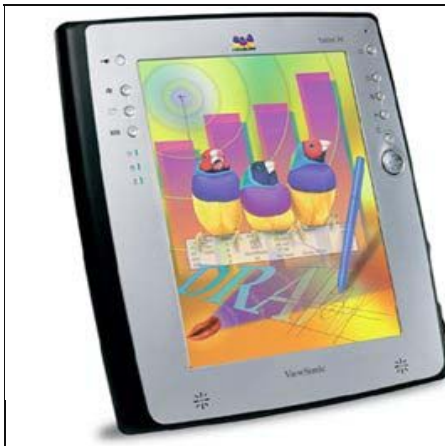
Instructions: For the next set of questions, please circle the number that corresponds to the emotion expressed in the picture of each product or product packaging.

	Indicate the emotion(s) expressed by the product in this picture.					
	Anxiety	1	2	3	4	5
	Sadness	1	2	3	4	5
	Scheming	1	2	3	4	5
	Anger	1	2	3	4	5



Indicate the emotion(s) expressed by the product in this picture.

Happiness	1	2	3	4	5
Excitement	1	2	3	4	5
Sadness	1	2	3	4	5
Surprise	1	2	3	4	5



Indicate the emotion(s) expressed by the product in this picture.


Happiness	1	2	3	4	5
Excitement	1	2	3	4	5
Relaxation	1	2	3	4	5
Annoyance	1	2	3	4	5



Indicate the emotion(s) expressed by the product in this picture.

Sadness	1	2	3	4	5
Relaxation	1	2	3	4	5
Happiness	1	2	3	4	5
Guilt	1	2	3	4	5

		Indicate the emotion(s) expressed by the product in this picture.					
		Pride	1	2	3	4	5
		Excitement	1	2	3	4	5
		Happiness	1	2	3	4	5
		Surprise	1	2	3	4	5

	Indicate the emotion(s) expressed by the product in this picture.					
	Aggression	1	2	3	4	5
	Joy	1	2	3	4	5
	Relaxation	1	2	3	4	5
	Sadness	1	2	3	4	5

Instructions: Imagine yourself in the situations indicated below. Think about how you felt and how those feelings were “not alike” and “very much alike” the physical sensations listed below

Think about the situation in which you have gone to the store to buy your favorite ice cream. When you arrive you realize that it is sold out. You felt disappointed and frustrated.

	<i>Not Alike</i>			<i>Very Much Alike</i>	
Hot	1	2	3	4	5
Yellow	1	2	3	4	5
Sweet	1	2	3	4	5

Think about the situation in which you found just the right car that you wanted to buy. But when you interacted with the salesperson he/she was very rude and aggressive. You felt surprised and angry.

	<i>Not Alike</i>			<i>Very Much Alike</i>	
Hard	1	2	3	4	5
Red	1	2	3	4	5
Cold	1	2	3	4	5

Think about the situation in which you spent a considerable amount of time shopping for just the right gift for your partner, but when he/she received the gift they didn't seem to like it that much. You felt sad and disappointed.

	<i>Not Alike</i>			<i>Very Much Alike</i>	
Blue	1	2	3	4	5
Sour	1	2	3	4	5
Soft	1	2	3	4	5

Think about the situation in which you were late for a meeting where you have to buy something first. When you arrive you realize that there is a very long line and only one cash register open. You felt frustrated and anxious.

	<i>Not Alike</i>			<i>Very Much Alike</i>	
Warm	1	2	3	4	5
Purple	1	2	3	4	5
Salty	1	2	3	4	5

Instructions: Please circle the number for each action that you feel best represents how the individuals described in the passage would preserve or maintain the relationships between them.

Jenny and Mike often frequent a local restaurant. They always receive the best service and the wait staff knows them well since they are good tippers. On their latest visit, surprisingly they received very bad service. They love the restaurant, and their relationship with the employees, but they are very unhappy with the present service. How effective would each of the following actions be for maintaining their relationships?

Action 1: They should find another one of the servers and ask to be moved to their section.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: They should complain about the service to the manager.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 3: They should leave no tip, knowing this will send a clear message.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: They should leave and go find another restaurant.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Becky and Steve want to buy a new car. They both will share the car and both have specific preferences in the type of car purchased. They love each other very much, but are determined to be firm on the car that they each want. How effective would Becky be in maintaining a good relationship with Steve, if she chose to act in each of the following ways?

Action 1: She should be sarcastic, so that Steve backs down and they buy the car she really wants.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: She should give in and accept whatever car Steve wants since he is so determined.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 3: She should explain her side and then tell him why her preference works for both of them.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: She should think back to when they first met and realize that she is being selfish.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Sarah has a job in which she interacts a lot with clients. Her clients are very important to her company since they represent large accounts. She normally has a great relationship with each of her clients, although today, one of her clients is very rude and makes offensive comments to her. How effective would Sarah be in maintaining a good relationship with this client if she chose to act in each of the following ways?

Action 1: She should immediately report the inappropriate behavior to the client's boss.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 2: She should politely tell the client that their business is important and she is there to help.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 3: She should become rude and offensive back to the client.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

Action 4: She should ignore the comments and act as if nothing was wrong.

Very Ineffective 1.....2.....3.....4.....5.....6.....7 Very Effective

APPENDIX F

Nomological Relations Questionnaire

The following survey involves background/demographic questions, along with various personality inventories. Please indicate your answer in the space next to each question below.

What is your gender? ____ Female ____ Male

What is your age: _____

What is your class level? ____ Freshman ____ Sophomore

____ Junior ____ Senior ____ Graduate student

Please answer the following questions honestly and to the best of your ability. Circle the number that best represents your answer for each question.

1. I have bought things even though I couldn't afford them.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

2. In the past, I have felt others would be horrified if they knew of my spending habits.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

3. If I have any money left at the end of the pay period, I just have to spend it.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

4. I have made only the minimum payments of my credit cards.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

5. I have bought something in order to make myself feel better.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

6. I have written a check when I knew I didn't have enough money in the bank to cover it.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

7. Sometimes I have bought things and didn't really care what I bought.

1	2	3	4	5	6	7
Strongly Disagree		Disagree	Neither		Agree	Strongly Agree

8. I often buy things simply because they are on sale.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

9. I have felt anxious or nervous on days I didn't go shopping.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

10. Shopping is fun.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

11. I have felt depressed after shopping.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

12. I have bought something and when I got home I wasn't sure why I had bought it.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

13. I have gone on a buying binge and wasn't able to stop.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

14. I really believe that having more money would solve most of my problems.

1	2	3	4	5	6	7
Strongly Disagree	Disagree		Neither	Agree		Strongly Agree

Please answer the next set of questions honestly and to the best of your ability. Please circle the number that best represents your answer.

1. In social situations, I have the ability to alter my behavior if I feel that something else is called for.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

2. I have the ability to control the way I come across to people, depending on the impression I wish to give them.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

3. When I feel that the image I am portraying isn't working, I can readily change it to something that does.

0	1	2	3	4	5
Certainly, always false	Certainly, false	Generally false, but with exception	Somewhat true, but with exception	Somewhat true	Generally always true

4. I have trouble changing my behavior to suit different people and different situations.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

5. I have found that I can adjust my behavior to meet the requirements of any situation I find myself in.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

6. Even when it might be to my advantage, I have difficulty putting up a good front.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

7. Once I know what the situation calls for, it's easy for me to regulate my actions accordingly.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

8. I am often able to read people's true emotions correctly through their eyes.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

9. In conversations, I am sensitive to even the slightest change in the facial expression of the person I'm conversing with.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

10. My powers of intuition are quite good when it comes to understanding others' emotions.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

11. I can usually tell when others consider a joke to be in bad taste, even though they may laugh convincingly.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

12. I can usually tell when I've said something inappropriate by reading it in the listener's eyes.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

13. If someone is lying to me, I usually know it at once from that person's manner of expression.

0	1	2	3	4	5
Certainly, always false	Generally false	Somewhat false, but with exception	Somewhat true, but with exception	Generally true	Certainly, always true

1. How much satisfaction do you get from each of the following in your life?

- a. Your job (whether you work, keep house, or go to school).

1	2	3	4	5
Not Much	Some	A great deal	An extreme amount	Doesn't apply

- b. Nonwork activities such as hobbies.

1	2	3	4	5
Not Much	Some	A great deal	An extreme amount	Doesn't apply

- c. Your friends.

1	2	3	4	5
Not Much	Some	A great deal	An extreme amount	Doesn't apply

- d. The things you buy.

1	2	3	4	5
Not Much	Some	A great deal	An extreme amount	Doesn't apply

- e. Your life in general.

1	2	3	4	5
Not Much	Some	A great deal	An extreme amount	Doesn't apply

Thank you for your participation!

APPENDIX G

Pretest: Objective Knowledge Difficulty Ratings

**Please RATE the following food questions based on level of difficulty from 1-30:
(1 Being the easiest)**

- 1 cup of wild rice contains more calories than 1 cup brown, long grain rice. _____
- 4 leafs of Iceberg Lettuce contains more calories than a 12oz can of diet coke. _____
- 1 cup of 2% white milk contains more calories than 1 slice of American cheese. _____
- 1 large banana contains more calories than 1 large red apple. _____
- 1 cup (8oz) of fresh orange juice contains more calories than 1 cup brown, long grain rice. _____
- 1 cup of cheerios cereal contains more calories than 1 cup of chicken noodle soup. _____
- 1 large red apple contains more calories than 1 slice of American cheese. _____
- 1 cup 2% white milk contains more calories than 1 cup of non-fat fruit flavored yogurt. _____
- 1/2 cup of spaghetti sauce contains more calories than 2 tablespoons of butter. _____
- 1 cup of brown, long grain rice contains more calories than 1 cup of green beans. _____
- 1 medium fresh tomato contains more calories than 1/2 cup chopped raw green peppers. _____
- 1 large uncooked egg contains more calories than 1 cup white skim milk. _____
- 1 roasted chicken breast (skinless) contains more calories than a small 8oz grilled salmon fillet.

- 1 cup of low-fat plain yogurt contains more calories than 1 cup of white, long grain rice. _____
- 1 cup of white skim milk contains more calories than an 8oz grilled salmon fillet. _____
- 1 small dinner roll contains more calories than 1 oz (17 chips) of Ruffles Wow fat-free potato chips.

- 1 cup of brown, long grain rice contains more calories than 2 tablespoons butter. _____
- 1 large Florida orange contains more calories than 1 cup cooked spaghetti (w/o sauce). _____
- Fruit Smoothies 16oz (Fruit + NonFat frozen yogurt/sherbet) contains more calories than a 12oz can of cola soda (Coke and Pepsi). _____
- 1 baked potato contains more calories than 1 roasted chicken breast (w/ skin). _____

APPENDIX H

Debriefing Sheet For All Studies

You have just participated in an experiment that deals with the emotions that consumers use in everyday consumption-related situations. These situations can include making decisions about what products to purchase, deciding which stores to visit, and even how to understand and use emotions when interaction with a salesperson.

In this experiment, we provided you with various stimuli, such as pictures of products and faces or written situations in which you were asked to indicate the presence of various emotions expressed in those pictures or products. Other stimuli involved fictional consumers interacting with employees or salespeople, where you made decisions relative to which option was most appropriate in that given situation. Specifically, we are interested in how you understand and use these emotions in purchase and consumer related decisions and interactions.

We have tried to adhere to rigorous scientific procedures for conducting survey research and also tried to obtain information that can be used in later phases of the research. Your responses on this survey were important and greatly appreciated.

If you should have any questions concerning your participation, please feel free to contact Blair Kidwell, David Brinberg, or Andrew Parker at (phone 231-6949), Department of Marketing. Thank you again for your participation.

Because this is an ongoing project, it is important that you not discuss it with other students.

APPENDIX I

Cognitive Ability And Confidence Measures (Fat Knowledge)

1 cup of white, long grain rice contains more fat than 1 turkey sandwich on whole wheat bread.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 skinless chicken breast contains more fat than 1 glass of caffeine free coke.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

½ cup of mixed vegetables contains more fat than 4 oz of pork chop

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 cup of romaine lettuce contains more fat than 4 oz of skinless white turkey meat.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 uncooked egg contains more fat than 1 cup of cheerios cereal (without milk).

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 chicken breast contains more fat than 1 slice of American cheese.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

½ cup of broccoli contains more fat than 4 oz of skinless white turkey meat.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 turkey sandwich on whole wheat bread contains more fat than 2 pieces of green peppers.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 banana contains more fat than 4 iceberg lettuce leaves.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 cup of spaghetti meat sauce contains more fat than 1 slice of soft white bread.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 cup of brown, long grain rice contains more fat than 4 oz of pork chop.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 slice of soft white bread contains more fat than 2 pieces of green peppers.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 uncooked egg contains more fat than ¼ cup of carrots.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 turkey sandwich on whole wheat bread contains more fat than 1 slice of American cheese.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

2 cups of pretzels (thin twist) contain more fat than 1 turkey sandwich on whole wheat bread.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

2 pieces of green peppers contain more fat than 1 slice of American cheese.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

2 cups of pretzels (thin twist) contain more fat than 1 skinless chicken breast.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 cup of white, long grain rice contains more fat than 1 cup of cheerios cereal.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

1 turkey sandwich on whole wheat bread contains more fat than ½ cup of broccoli.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

2 tablespoons of cucumbers contain more fat than 1 slice of American cheese.

This statement is [True / False].

50%	60%	70%	80%	90%	100%
just guessing					absolutely sure

APPENDIX J

Example of Emotional Confidence Items

What emotion(s) might be useful to feel when consuming unhealthy food while attempting to maintain a diet?

Guilt:

1 = Not at all useful

2

3

4

5 = Very useful

Select a number from 50% to 100% that reflects the percent chance you are right.

50% 60% 70% 80% 90% 100%

APPENDIX K

Stimulus Material for Study Two: Individual Performance Task

INSTRUCTIONS

In the next section, please put yourself in the situation described below. Then select, from a menu provided, the types of food selections that you might make if you were in that situation. In other words, we are interested in the food choices that you might make on a typical night when trying to maintain your ideal weight, or at least maintain a healthy diet.

Please read the paragraph carefully, and think of yourself in that situation.

SITUATION:

You are trying to maintain your ideal weight, or at least your body fat level. It's about dinnertime and you are getting hungry so you decide to stop by Macado's on the way home to grab something to eat.

You arrive and begin looking over the menu. There are many different options to choose from. Please look over the menu provided below and make your selection of the food item(s) that you would order, including any appetizers, drinks, and/or desserts. Don't over think your responses, as there is no "correct" answer.

Now we would like you to indicate your selection of an evening meal and what you might drink (along with any other desired items).

Take as much time as you need. There are no right or wrong answers.

APPENDIX L

Correlation matrix of Relevant Constructs (Study 2)

Variables	EI Total	Branch 1	Branch 2	Branch 3	Branch 4	EI Conf	Cognitive Ability	Cognitive Conf
EI Total	--	.743	.557	.681	.532	.130	.350	.067
Branch 1	.743	--	.163	.290	.023	.069	.173	-.042
Branch 2	.557	.163	--	.327	.305	.083	.198	.120
Branch 3	.681	.290	.327	--	.247	.178	.364	.119
Branch 4	.532	.023	.305	.247	--	.023	.209	.063
EI Conf	.130	.069	.083	.178	.023	--	.144	.503
Cog. Ability	.350	.173	.198	.364	.209	.144	--	.333
Cog. Conf	.067	-.042	.120	.119	.063	.503	.333	--

APPENDIX M

Stimulus Material for Study Three: Group Performance Task

INSTRUCTIONS

For this task, you will be asked to work together to accomplish an objective. It is very important that you talk, discuss, negotiate and resolve the objective presented. Please read the situation below carefully, and attempt to solve the problem as a team.

Situation (PLEASE READ CAREFULLY):

You have been asked to plan a dinner party by a student organization that you are associated with. Specifically, you have been selected along with another student to come up with food choices that will be consumed by all of the students in attendance. This is a business and social event, and Macado's restaurant has offered to supply the food and drinks free of charge, although they have requested that all members eat the same foods and drinks. Thus, your task involves selecting entrees and drinks (which can include alcohol, appetizers, and desserts, if desired) that will be consumed at this event. Work together to plan the food and drinks for this event.

Your goals in this task are; 1) to select food and drinks that appeal to a wide variety of individuals, and 2) that this dinner should also be appropriate for those individuals who are trying to maintain their ideal weight or at least maintain a healthy diet. There will be 35 students attending this event, including you and the person you are working with. Thus, you will select choices of food and drink and any other appetizers or desserts for 1 person at the party. This selection will then be multiplied by 35, for each person in attendance.

There are many different options to choose from. Please look over the menu provided below and make your selection of the food items that you will order, including any appetizers, drinks, and desserts. Again, there are no cost limitations on your choices, as Macado's services will be free of charge.

Do the best you can. There are no "correct" answers.

Please take as long as you need to look over the menu with your other member of your team and come up with some food and drink choices for the dinner event.

APPENDIX N

Correlation matrix of Relevant Constructs (Study 3)

Variables	EI Total	Branch 1	Branch 2	Branch 3	Branch 4	EI Conf	Cognitive Ability	Cognitive Conf
EI Total	--	.745	.628	.743	.604	.076	.489	.084
Branch 1	.745	--	.274	.336	.097	.036	.248	-.084
Branch 2	.628	.274	--	.368	.415	-.057	.284	.104
Branch 3	.743	.336	.368	--	.371	.078	.460	.209
Branch 4	.604	.097	.415	.371	--	.098	.397	.084
EI Conf	.076	.036	-.057	.078	.098	--	.106	.179
Cog. Ability	.489	.248	.284	.460	.397	.106	--	.266
Cog. Conf	.084	-.084	.104	.209	.084	.179	.266	--

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DISSERTATION

Title: Emotional Intelligence In Consumer Behavior: Ability, Confidence and Calibration as Predictors of Performance

Committee:

- David Brinberg (Chair)
- Kent Nakamoto (Department Head)
- Andrew Parker
- Robert Jewell
- Helen Crawford

Brief Abstract:

The focus of this thesis is to investigate the impact of emotional intelligence on consumer decision making. Several research goals are presented: 1) To examine the influence of emotional intelligence on behavioral performance in a consumer context, 2) to develop and test a practical domain-specific scale of emotional ability, 3) to identify how performance is influenced by confidence, and calibration between perceived (i.e., confidence) and actual cognitive and emotional ability.

Three studies will be conducted to meet these goals. Study 1 will involve the development and validation of the consumer emotional ability scale (CEAS), based on four underlying emotional abilities (i.e., perceiving, facilitating, understanding, managing), that will allow further examination of how emotional intelligence affects performance in consumer behavior. A proposed model will be examined in individual (study 2) and small group (study 3) decision making contexts using the CEAS scale, along with additional items to assess the influence of cognitive ability, cognitive and emotional confidence, and calibration on performance in a consumer domain.

PUBLICATIONS AND PRESENTATIONS

Publications:

- Moorman, Christine, Kristin Diehl, David Brinberg, & Blair Kidwell (forthcoming), "Subjective knowledge, search locations, and consumer choice," *Journal of Consumer Research*.
- Kidwell, Blair, & Robert Turrissi (in press), "An examination of college student money management Tendencies," *Journal of Economic Psychology*.
- Kidwell, Blair, & Robert D. Jewell (2003), "The moderated influence of internal control: An examination across health related behaviors," *Journal of Consumer Psychology*, 13(4), 377-386. *Runner up for the JCP Young Contributor Award for 2003.
- Kidwell, Blair, & Robert D. Jewell (2003), "An examination of perceived behavioral control: Internal and external influences on intention," *Psychology & Marketing*, 20(7), 625-642.
- Kidwell, Blair, David Brinberg, & Robert Turrissi (2003), "Determinants of money management," *Journal of Applied Social Psychology*, 33 (6), 1244-1260.
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- Brinberg, David, Blair Kidwell, & Eloise Coupey (2000), "Determinants of drinking and driving: Developing interventions based on cognitive structure, affect, and past experience," *Marketing and Public Policy Conference Proceedings*, 10, 135-142.

Presentations:

- Kidwell, Blair, & Robert Turrissi (2002), "An examination of money management tendencies," Paper presented at *Advances in Consumer Research* Conference, Atlanta, Georgia.
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- Moorman, Christine, Kristin Diehl, David Brinberg, & Blair Kidwell (2000), "Subjective knowledge and consumer choice," Paper presented at *Advances in Consumer Research* Conference, Salt Lake City, Utah.
- Brinberg, David, Blair Kidwell, & Eloise Coupey (2000), "Determinants of drinking and driving: Developing interventions based on cognitive structure, affect, and past experience," Paper presented at *Marketing and Public Policy* Conference, Washington D. C.
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Papers under Review:

Jewell, Robert D., & Blair Kidwell, "The moderating effect of perceived control on motivation to engage in deliberative processing," *Journal of Consumer Psychology*. Under first review.

Jewell, Robert D., & Blair Kidwell, "Motivational effects of self-efficacy on information processing and choice," *Journal of Marketing Research*. Manuscript under first review.

Kidwell, Blair, & Robert Turrisi, "Credit card acquisition tendencies," *Journal of Consumer Policy*. Manuscript under first review.

RESEARCH INTERESTS

Conceptual interests include: Cognitive and non-cognitive determinants of intention, the influence of knowledge calibration (perceived vs. actual), emotional intelligence, and perceived controllability (i.e., internal vs. external) on consumer decision making and choice.

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