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2016

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The role of personality in the relationship between feeling bored and decision-making competence: A study of managers in the retail industry

by

MAGDA DU PREEZ

THESIS

submitted in fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY (PhD)

at the

WITS BUSINESS SCHOOL

UNIVERSITY OF THE WITWATERSRAND

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June 2016

ABSTRACT

Despite the increased work on emotions in organizations, there is a lack of research on the impact of feeling bored in managerial decision-making contexts. Feeling bored was defined, and an expansion to the Hybrid Process Decision-Making Model was proposed. Using this revised definition of feeling bored and the Expanded Decision-Making Process Model, an empirical study with retail middle managers was conducted to examine the relationships between feeling bored and decision-making competence and the role of personality. Results found that feeling bored has a significant negative association with middle managers' confidence levels, risk perception and decision rules. Results confirmed that personality plays a moderating role in the relationship between feeling bored and decision-making competence. Most notably, the personality trait learning neutralizes the negative effects of feeling bored on decision-making competence, whereas the personality trait sociability has a varied effect depending on which end of the valence/arousal continuum feeling bored is experienced. Limitations to the study, and practical implications for retail organizations, middle managers and for future research, are outlined.

DECLARATION

I, Magda Maria du Preez, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in fulfilment of the requirements for the degree of Doctor in Commerce at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.



MAGDA DU PREEZ

DEDICATION

This thesis is dedicated to my husband, Dan Jones, and my dad, Pieter du Preez.

ACKNOWLEDGEMENTS

I would like to acknowledge the following people to whom I am immensely grateful for their time, wisdom and unwavering support through the five-year journey.

- My study leaders, Professors Drikus Kriek and Karel Esterhuyse, who kept me focused and challenged me intellectually, leading me to new ways of thinking.

- Professor Jeremy Albright for his data analysis and interpretation support.

- My colleagues, clients and friends from whom I learned so much through the years, for inspiring me to do this research, being patient listeners and providing active support throughout. Thank you to Kathy Bluestone, Alison Larkan, Kevin Nash, Josh Onishi, Joan Heynemann, Anna Odendal, Matisha Montgomery, Michael Colucio, Mike Sommer, Samantha Sommer, Rich Syrek, Toni Lewis, Malcolm Elvey, Victor Walters, Patty Buchanan, Chandu Visweswariah, Joe Coyne, Martha Burwell and Kent Trabing. Especially thank you to Kathy and Alison, for keeping all systems going, giving me the time for thesis work. I could not have done this without your active and moral support!

- Hogan Assessment Systems Inc., SusaGroup, Dr. Pieter Desmet and Dr. Wandi Bruine de Bruin for giving me permission to use their surveys in this study. Special thank you to Lars Rengersen and Menno van der Werff who provided technical support above and beyond what any of us imagined.

- Shoprite Holdings Ltd and all participating managers who made gathering data for this study possible, in particular Callie Burger and Janine Truter. Janine, a special thank you for your keen interest in the topic and warm encouraging support.

- My family, Elna, Mom Millie, Bonnie, Jen, Jeff for moral support, and especially my husband, Dan, who patiently lived with an absent wife and remained supportive for all these years, and my dad, role model and inspiration throughout life.

- Mary and Jill Hazelton and Timothy J. DeWerff for their expert editing.

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DEFINITIONS OF TERMINOLOGY

Adjustment – A personality construct used in the Hogan Personality Inventory (HPI) reflecting calm, optimistic, not moody; this correlates with the Five Factor Model personality trait of emotional stability, not neurotic.

Affect – A term used to reference constructs that include individuals' emotions and moods.

Agreeableness – A personality trait that refers to a person's level of compassion (cooperative, warm, agreeable) vs. antagonism (cold, disagreeable).

Ambition – A personality construct used in the Hogan Personality Inventory (HPI) reflecting taking initiative, competitiveness, seeking of leadership roles; this correlates with the Five Factor Model personality trait of surgency (extraversion).

Arousal – Intensity (high or low) of an emotion or mood, noted as degree of activated or deactivated.

Confidence – A decision-making competency referring to an individual's ability to be accurately confident about his or her knowledge about different scenarios or content areas.

Conscientiousness – A personality trait that refers to a person's level of reliability (hard-working, self-directed, organized, dependable, persevering) vs. unreliability (lazy, disorganized, careless).

Decision-Making Competence – The ability to avoid suboptimal decision outcomes in the domains of applying decision rules, remaining appropriately confident, evaluating risk appropriately and resisting framing biases.

Decision Rules – A decision-making competency referring to one's ability to follow probability rules.

Emotion – Dynamic and brief (seconds to hours) yet distinctive reactions to events explainable in two-dimensional valence/activation and discrete terms and influenced by context.

Emotion Bored – An emotion characterized by lack of pleasure, disengagement and lack of aim; the opposite of emotion fascinated.

Emotion Fascinated – An emotion characterized by pleasure, active engagement and passionate interest; the opposite of emotion bored.

Extraversion/Surgency – A personality trait that refers to a person's level of sociability (needing stimulation, assertive, gregarious) vs. introversion (reserved, aloof, quiet).

Feeling – The bodily sensations associated with an emotion or a mood.

Feeling Bored – An emotional reaction or mood noted in discrete terms on the two-dimensional valence/activation continuum as bored-fascinated (emotion) or bored-excited (mood).

Heuristic – Effort reduction (mental shortcuts) to find out or discover.

Inquisitive – A personality construct used in the Hogan Personality Inventory (HPI) reflecting curiosity, imaginativeness and visionary inclination; this correlates with the Big Five personality trait of openness.

Learning – A personality construct used in the Hogan Personality Inventory (HPI) reflecting joy of learning, staying up to date; this correlates with the Five Factor Model personality trait of openness.

Likeability/Interpersonal Sensitivity – A personality construct used in the Hogan Personality Inventory (HPI) reflecting agreeableness, and relating well to others; this correlates with the Five Factor Model personality trait of agreeableness.

Manager – A person who supervises others, has budget responsibility and reports to a boss within an organization.

Mood – Affective backdrop (independent from events) experienced over a period of time (hours to months) explainable in two-dimensional valence/activation and discrete terms.

Mood Bored – A mood characterized by lack of pleasure, deactivation, tiresome; the opposite of mood excited.

Mood Excited – A mood characterized by pleasure, exhilaration, thrilled, an active energy state; the opposite of mood bored.

Neuroticism/Emotional Adjustment – A personality trait that refers to a person's level of emotional instability (insecure, anxious, depressed, hostile, easily stressed) vs. emotional stability (calm, self-confident, cool-headed).

Openness – A personality trait that refers to a person's level of openness (embracing, appreciating and seeking new experiences, curious, cultured) vs. rigidity in beliefs (narrow interests, dogmatic, behaviourally set in one's ways).

Personality – A person's unique combination of traits (extraversion, agreeableness, neuroticism, conscientiousness and openness), which is considered relatively stable over time (multiple years).

Prudence – A personality construct used in the Hogan Personality Inventory (HPI) reflecting paying attention to detail, dependability, following of rules; this correlates with the Five Factor Model personality trait of conscientiousness.

Resisting Framing – A decision-making competency referring to an individual's ability to remain objective when choosing one option over another, resisting the bias of being swayed by the language in which an option is presented.

Risk Perception – A decision-making competency referring to one's ability to accurately perceive risk.

Sociability – A personality construct used in the Hogan Personality Inventory (HPI) reflecting being talkative, social and entertaining; this correlates with the Five Factor Model personality trait of surgency (extraversion).

Surgency/Extraversion – A personality trait that refers to a person's level of sociability (needing stimulation, assertive, gregarious) vs. introversion (reserved, aloof, quiet).

Valence – A person's emotion or mood in terms of degree of pleasure or displeasure.

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1. ORIENTATION TO THE RESEARCH

The focus of this study is to understand the role personality plays in the relationship between managers' feeling bored and their decision-making competence. To orient the research, the relevance of this topic in the retail management context will first be discussed, followed by an explanation of why this is a problem worthy of investigation. In conclusion, the purpose, objectives and research questions will be clarified.

1.1. Relevance of the study

Sound everyday decision-making is important in many occupations and is particularly important in management positions. Decisions that managers make affect their co-workers, their teams, their organizations and ultimately society. For example, retail managers often make decisions about whom to hire, how to motivate teams, how to manage purchasing and how to meet customers' expectations and resolve customer issues, to name a few. However, managers differ in their decision-making competence even when faced with the same work context and same situations. Understanding what accounts for individual differences between managers and their decision-making competence therefore has the potential to improve an organization overall (Dalal & Brooks, 2013).

The effect of feeling bored on decision-making has been little studied but warrants research. The estimated cost of productivity loss due to employees' spending time on private affairs because of boredom has been estimated at $750 billion per year in the U.S. alone (van der Heijden, Schepers, & Nijssen, 2012). Although the importance of boredom has been recognized by scholars for more than a century (Münsterberg, 1913), there have been fewer than 400 scientific studies on the effect of boredom in the work environment published to date (Schaufeli & Salanova, 2014). One of the challenges with conducting research on "feeling bored" is the lack of a clear definition of what "feeling bored" constitutes.

There is general agreement among scholars that boredom falls within the affective domain (Craparo, Faraci, Fasciano, Carrubba, & Gori, 2013; Goldberg, Eastwood, LaGuardia, & Danckert, 2011; Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010). However, there is little

agreement as to exactly how to label it. Some researchers refer to boredom as an emotion (Craparo et al., 2013; Desmet, 2002), while others define it as a mood (Arellano, Perales, & Varona, 2014; Desmet, Vastenburg, Van Bel, & Romero Herrera, 2012; Hubalek, Brink, & Schierz, 2010), and others consider it a trait (Pekrun et al., 2010). This lack of theoretical clarity points to the need for a systemic review in the literature about what the term "feeling bored" within the affective domain means.

Context matters. As often seen in business headline news, some managers who succeed in one organizational and industry context fail in another. This study will be contextualized within the retail middle management arena. This context is appropriate for this study because boredom is of particular interest in the retail environment due to its negative association with the job tenure and job satisfaction of retail managers (King & Holtfreter, 2011). In contexts (such as retail) where managers must pay attention to detail over long hours and deal with fluctuations between busy and quiet periods, feeling bored is prevalent (Fisher, 1987).

The next inquiry of this study is, What is the role of personality in the feeling bored–decision-making competence relationship? It has been well established by various authors that personality plays a key role in decision-making (Bacanli, 2006; Carnevale, Inbar, & Lerner, 2010; Clark, Boccaccini, Caillouet, & Chaplin, 2007; Kool, McGuire, Rosen, & Botvinick, 2010; Legohérel, Callot, Gallopel, & Peters, 2004). However, studies using only personality measures have often failed to predict behaviour at work. Furnham (2008) suggests that it is likely that when there are low correlations between personality and work behaviour, personality is acting as a moderator. As mentioned, "feeling bored" resides in the affective domain. Within the affective domain both moods and emotions have been shown to play a role in decision-making. Meta-analysis of studies done over the past three decades has revealed that emotions have moderate to large influencing effects on decisions (Angie, Connelly, Waples, & Kligyte, 2011). Other studies have demonstrated that moods impact decision-making (Raghunathan & Pham, 1999). Furthermore, in research where emotions, moods and personality were studied together to determine their combined impact on perception, personality traits have been shown to have moderator effects (Vuoskoski & Eerola, 2011). Taken together, the findings of these studies point to a high probability that personality could play a moderating role between moods, emotions and decision-making. It therefore seems plausible that one may find empirical

evidence for personality playing a moderating role in the relationship between “feeling bored” and decision-making competence.

In sum, there is a solid research foundation indicating that feeling bored and personality impacts decision-making and therefore are particularly relevant to managers. The case is also made that these elements (feeling bored, personality and decision-making competence) need to be understood individually, dynamically and situationally. Due to the confusion in the literature about “feeling bored,” this concept is in specific need of definition clarification. This research will also further understanding of the dynamic interplay between managers’ feeling bored, personality and decision-making competence. And since this study takes place within a representative retail environment the findings will be generalizable and applicable to retail middle managers.

1.2. Problem statement

The estimated $750 billion loss due to staff feeling bored at work is not trivial. Both personality and feeling bored impact decision-making, a core function of managers. Since retail middle managers in particular appear to work in an environment that is conducive to conditions of boredom, understanding the impact of personality and feeling bored on their decision-making becomes pertinent and raises the following questions:

- If there *is* an interaction between personality and feeling bored, the question to be addressed is, What is the combined impact of feeling bored and personality on managers’ decision-making?

- If there *is not* an interaction between feeling bored and personality, the question to be answered would be, What is the singular impact of feeling bored on retail middle managers’ decision-making?

1.3. Purpose of the study

The purpose of this study is to investigate the effect of feeling bored on decision-making competence, focusing on the role that personality plays in the relationship between managers feeling bored and their decision-making competence in a retail context.

1.4. Study objectives

To achieve the stated purpose of this study there are several objectives.

From prior research, in the literature review:

1] Clarify the context within which this research takes place

2] Provide a theoretical model within which the dynamic interactions between personality, feeling bored and decision-making can be understood in the context of work

3] Define “personality”

4] Define “feeling bored”

5] Define “decision-making competence”

Empirically:

6] Determine an appropriate research method

7] Test for the association between feeling bored and decision-making competence within the middle management retail environment

8] Test for the moderation role that personality may play between feeling bored and decision-making competence.

The last two objectives segue into the empirical research questions this study plans to address.

1.5. Research questions

As noted previously, there is general agreement in the literature that “feeling bored” falls within the affective domain (Craparo et al., 2013; Goldberg et al., 2011; Pekrun et al., 2010) and that

feeling by definition includes emotions and moods (McLeod, 1991). However, what specific features of emotions and moods comprise “feeling bored” is still elusive, prompting a clarification of definition from the literature. Per definition, feeling bored can be an emotion or a mood, or both, so for empirical purposes feeling bored will be researched both as an emotion and as a mood.

The literature has demonstrated that there is in fact a co-varying relationship between personality, moods and emotions (Plutchik, 1997; Reisenzein & Weber, 2009), a directional relationship between emotions and decision-making competence (Cryder, Lerner, Gross, & Dahl, 2008; Lerner & Tiedens, 2006; Tiedens & Linton, 2001), a directional relationship between personality and decision-making competence (Bacanli, 2006; Legohérel et al., 2004) and a directional relationship between moods and decision-making competence (Forgas, 1989). To investigate the role of personality in the interaction between feeling bored and the decision-making competence of middle managers in retail, this study poses the following research questions for empirical study:

Q1: What is the association between *emotion bored* and the decision-making competence of managers in a middle management retail context?

Q2: What is the association between *mood bored* and the decision-making competence of managers in a middle management retail context?

Q3: Does personality moderate the relationship between feeling bored (emotion and mood) and the decision-making competence of managers in a middle management retail context?

2. LITERATURE REVIEW

This chapter will review the pertinent literature to conceptualize the external context within which this study takes place and the internal context within which individual managers operate. In this vein, the first section will outline what is known about boredom at work with specific focus on why boredom is of particular interest to middle managers within the retail environment. This will be followed by an outline of the company and role environment within which this study takes place. Thereafter the internal context will be described focused on the Affective Events Theory (AET) and the Hybrid Process Decision-Making Model (HPDMM) since these are models within which the constructs (feeling bored, personality and decision-making competence) investigated in this study can be understood. An expansion to the HPDMM will be proposed to explain the interactions and flow between these three constructs. The rest of the chapter will review these constructs more comprehensively including relevant theories pertaining to feeling bored, personality and decision-making competence, concluding with definitions for each.

2.1. Boredom at work

Boredom is experienced frequently (Pekrun et al., 2010), yet remains poorly understood (Schaufeli & Salanova, 2014). Boredom at work appears to be an especially neglected area of research**.** Boredom has been studied from both contextual and individual perspectives: Some studies have focused on work situations that promote the experience of boredom, while others have investigated individual differences, since it appears that some people are more prone to experience boredom than others (Fisher, 1987, 1994; Mercer-Lynn, Bar, & Eastwood, 2014).

2.1.1. *Boredom*

Boredom is associated with counterproductive work behaviour, such as withdrawal (Spector et al., 2006). It is also linked to costly losses in productivity. Surveys have found that about one-third of employees spend up to two hours per workday on private affairs because of boredom, resulting in an estimated loss in productivity of more than $750 billion annually in the U.S. alone (van der Heijden et al., 2012).

Although boredom at work was recognized as a topic worthy of scientific inquiry by the pioneer of applied psychology Hügo Munsterberg (Münsterberg, 1913), and although it has been noted as one of the most frequently occurring emotions in society today (Azzam, 2007; Pekrun et al., 2010), it is still investigated only occasionally. Studies of boredom in organizations did not begin until the 1960s; to date fewer than 400 scientific studies that include the construct of boredom have appeared (Schaufeli & Salanova, 2014).

There are several possible reasons for the dearth of research on boredom. One reason is the lack of a clear definition of what boredom is. Loukidou (2008) points out that there are incongruencies in definitions between theoretical disciplines, as well as within disciplines. Organizational researchers have studied and defined boredom from a number of different perspectives. From a *cognitive* perspective, boredom has been defined as the inability to sustain attention (Eastwood, Frischen, Fenske, & Smilek, 2012). Boredom has been viewed from a *task* perspective as a result of doing repetitive tasks or being exposed to repetitive stimulation – i.e., having too much "sameness" in stimulation (Shastri, Fujiki, Buffington, Tsiamyrtzis, & Pavlidis, 2010). From an *intrinsic descriptive* perspective, boredom has been associated with a lack of motivation (Pekrun et al., 2010). Researchers studying differences between individuals from an *affective experience* perspective have defined boredom as an emotional experience that lacks pleasure or aim (Craparo et al., 2013) or as a trait, meaning habitual boredom (Pekrun et al., 2010) or being prone to boredom (Bruursema, 2007). Finally, from an *emotional behavioural* perspective, boredom has been defined as both an emotion and a behaviour; Bench and Lench (2013) call boredom "the aversive experience of wanting, but being unable, to engage in satisfying activity." This definition acknowledges boredom's functional component by arguing that always being happy, angry, sad or afraid about the same goal would have little adaptive value. As the intensity of these (and other) emotions begins to subside, boredom arises to indicate that a new goal should be pursued and motivate responses to switch goals.

These varying perspectives on boredom can be categorized as:

- the *causes* of boredom (e.g., boring tasks)
- the *consequences* of boredom (e.g., the inability to pay attention cognitively)

- the *behavioural function* of boredom (e.g., boredom indicates that it is time to change goals in order to alleviate it), and
- the *affective experience* (e.g., feeling a lack of pleasure and aim).

Despite the differences in definitions, there appears to be agreement that the emotional experience of feeling bored falls within the broader affective domain, even though it is has been defined as a trait (Pekrun et al., 2010), an emotion (Craparo et al., 2013; Desmet, 2002) and a mood (Desmet et al., 2012) by different scholars.

A second possible reason for the lack of research on boredom, especially from an emotional research perspective, is that it is a "passive" emotion relative to the more "active" emotions such as anger, fear or sadness (Pekrun et al., 2010), which are more widely researched. Although there has been an upsurge in studies of emotions over the past two decades, boredom has been studied only scantly. Pekrun et al. (2010) have pointed out that in recent textbooks on emotions, such as the *Handbook of Emotions* (Lewis, Haviland-Jones, & Barrett, 2010), boredom receives only fleeting mention, with the suggestion that it can be alleviated with excitement and curiosity.

A third reason for the lack of research could be the limited number of measurement tools available for researching boredom, especially in workplace settings. The most widely used tool for measuring boredom is the Boredom Proneness Scale created by Farmer and Sundberg (1986). This scale was developed for studying proneness to boredom (trait boredom) in clinical settings, since the boredom proneness trait positively correlates with pathologies such as depression, hopelessness and low motivation. Within the affective domain, the boredom proneness scale is limited to measuring the "trait" (habitual) aspect of the construct boredom. Recent new developments in technology and measurement tools are enabling researchers to measure the affective construct of boredom within organizational settings more completely as both an emotion and mood (Desmet, 2005; Desmet et al., 2012).

In sum, understanding boredom is hindered by a lack of definition and lack of appeal to researchers. The latter could possibly partly be due to the limited tools that were available to research boredom within the work environment. However, those who have researched boredom

at work, have done so from different perspectives (e.g., its causes, consequences, function and how to alleviate its effect, which will be discussed next).

2.1.2. *Boredom–work interaction: causes, consequences and alleviation*

The boredom–work interaction has been studied from situational (task and context) and individual (emotion, cognition and skill) perspectives. Since both situations and individuals can cause boredom, an overview of the causes, consequences and possible alleviations for boredom in the workplace are reviewed from both individual and situational perspectives below.

Causes of boredom

Situationally, boredom can be caused by the task itself or by other people. Individually, some people also show more propensity towards boredom than others. Each of these categories (task, other people and individual self) will be described in more detail below.

Task

According to Fisher (1987) who studied incidents of boredom among 540 employed students, there were causes of boredom both in and outside the workplace. Fisher noted that these incidents of boredom fell into several discrete categories.

Outside the workplace, Fisher (1987) asked 340 students to describe a situation in which they felt bored. These participants mentioned that “boring people” made them feel bored. The concept of *qualitative overload* happens when students have difficulty grasping a topic which they are required to understand, either by attending a lecture or by researching on their own. Students lose concentration when this happens and boredom takes its place.

Within the workplace, Fisher (1987) received information from 200 participants who described incidents of boredom while they were employed. There are several reasons for this.

Firstly, boredom was caused by *quantitative underload*, as opposed to the *qualitative overload* described above. Over 50% of the respondents reported that they were bored at work because they were under-employed, often having very little to do. The students were motivated when

they were busy but boredom set in when a heavy workload ended and they were left with menial work or no work at all.

Secondly, *qualitative underload* also occurred when participants were given jobs that were below their abilities. According to Fisher (1987), these jobs were often easy to do but were repetitive and did not mentally challenge the students who were employed to do them. These jobs were mostly unskilled and included long periods of waiting, for instance, for an inspector to arrive. This was also proven by a large-scale survey carried out by Caplan, Cobb, French Jr, Harrison and Pinneau Jr (1975) on selected workers from 23 different occupations. The survey found a correlation of 0.59 between boredom and self-rated *qualitative underload* of skills.

Thirdly, the psychological literature ascribes boredom to low cognitive ability (Pekrun, 2006). Jobs that included tasks that challenged the person doing them became more interesting and motivated the worker to pay attention while the converse was also true; jobs that were either beyond the person's capabilities or were too undemanding for the person's intellect, produced boredom. Employees in positions like this may be able to identify the actual situations that predispose them to boredom.

Fisher's research on boredom contrasts with what Csikszentmihalyi (2000, 2014) describes as the antonym of feeling bored, namely, operating within what he calls the "flow." "Flow" refers to experiencing enjoyment, energetic focus and creative concentration when performing a task. In earlier research (Csikszentmihalyi, 1991, 1997), the author identified elements of tasks that were critical in enabling people to experience working within the flow, including clear goals for task outcome for each step on the way to achievement, immediate feedback on actions, a balance between difficulty and skill level and no fear of failure associated with the task.

Other people

Interactions between employees, work colleagues and other people involved with the job, such as customers, affect the way that the employees relate to their working environments by overcoming boredom and motivating them to improve their performance. Research has shown that the presence of other people can make even simple tasks more interesting (Bond & Titus, 1983). This also applies to off-the-job situations. Many people become bored when they are alone, as reported by Fisher's (1987) study.

On the other hand, Fisher also found that some participants did not always overcome boredom by interacting with colleagues who they felt were dull, unsociable or difficult to approach. It appeared that respondents often relied on co-workers to provide diversions when they were doing boring tasks, thereby making the working day more interesting. To their disappointment, this was not always the case.

Attitudes

The same job can seem interesting by some people and boring by others, depending on the attitude of the employees. Although social factors such as interactions with other people can provide stimulation to perform well, the attitude of one employee can affect how other employees view a particular task. If an employee expresses positive feelings about a job, for instance, that it is interesting, stimulating or creative, he or she influences how others in the company view the job. Perceptions, according to Thomas and Griffin (1983), affect “objective” job characteristics. This has both positive and negative connotations for employers designing job descriptions because of the way that employees perceive a particular job.

In short, boredom may be contagious, with peer-to-peer and boss-to-peer interactions similar to those found by scholars who have researched other emotions (Sy, Côté, & Saavedra, 2005; Tee, Ashkanasy, & Paulsen, 2011).

Individual self

Fisher (1993) noted that nearly everyone experiences episodes of boredom at work from time to time. However, after interviewing inactive Marines on a military base during peacetime, she noted that there are substantial individual differences in experiencing boredom among those exposed to the same task and work environment, pointing to the need to better understand both the person and the situation when studying boredom. Recent research has confirmed that both the situation and the individual can be causal in boredom (Mercer-Lynn et al., 2014).

One body of research has focused on examining skill differences to explain individual differences in propensity to boredom among employees. For example, employees most skilled in time management were found to be less prone to boredom (van der Heijden et al., 2012). The framework employed by van der Heijden et al. (2012) indicated that employees’ natural

temporary relief strategies to boredom include engaging in activities that result in distraction; however, employees trained in time management skills experienced less boredom and engaged in less distractive behaviour.

A second strand of research has examined the impact of individual cognition on boredom. Individuals with a low need for cognition are more prone to experience habitual boredom; the opposite is true for individuals with a higher need for cognition, who appear to create, engage in and enjoy cognitive activities, which limits the effect of boredom (Watt & Blanchard, 1994). The criteria associated with a high need for cognition described by Watt and Blanchard (1994) align with some of the criteria that Csikszentmihalyi and colleagues (Csikszentmihalyi, 1991, 2000; Ullén et al., 2012) identified as proneness for optimal experience from individual performance (the opposite of boredom) – i.e., the exclusion of distractions from consciousness.

A third research perspective has focused on proneness to boredom. Individuals show differing levels of propensity to feel bored. Positive associations have been established between trait boredom (habitual proneness to boredom over time) and counterproductive work behaviour (Bruursema, 2007).

In sum, causes of boredom at work can result from task situations characteristic of quantitative underload, including situations where very busy periods are followed by very quiet periods, qualitative underload or qualitative overload. Others who are perceived as uninteresting or working with others who perceive the job as boring also leads to boredom. Lastly, some individuals are more prone to boredom than others, especially those with poorer time management skills and/or those with a lower need for cognition. These causes of boredom are important to note since it sets the stage for conceptualizing triggers of boredom (both at situational and individual levels) at work that will be discussed in later sections.

Consequences of boredom

The consequences of boredom will be discussed from three perspectives: functional, cognitive and behavioural. The consequences of boredom are in contrast to the consequences of being in the “flow” of optimal experience for performance identified by Csikszentmihalyi and colleagues (Csikszentmihalyi, 1991, 2000; Ullén et al., 2012), which is a state of being where action and awareness are merged and where performing tasks become autotelic.

In control-value theory, Pekrun (2006) states that the effects of emotions on performance are mediated by distinct types of functional mechanisms. For example, boredom functions to withdraw attention from activities lacking value and to direct attention towards more rewarding stimuli and activities. By implication, it is expected that boredom experienced during an achievement task would reduce cognitive resources available for the task by causing attention problems. Boredom is posited to reduce task-related attention, increase distractibility and induce task-irrelevant thinking focused on alternative content.

Pekrun (2006) also found that boredom caused by an activity is aversive and induces motivation to avoid the activity; boredom therefore reduces the motivation to perform achievement activities. Boredom leads to shallow information processing and reduces the use of any task-related cognitive and metacognitive strategies. Boredom also exerts uniformly negative performance effects on both simple and more complex tasks.

Probably the most typical consequence of boredom is the display of counterproductive work behaviours such as withdrawal from work, sabotage, abusive behaviour, lower levels of production, theft, horseplay and a general feeling of being bored with the job (Bruursema, 2007). In later research, Bruursema, Kessler and Spector (2011) narrowed these findings and showed that employees who were bored were most likely to avoid work through being absent or late (withdrawal). The authors also hypothesized that boredom at work leads to other negative emotions, particularly anger, hostility and aggression, which in turn provoke more and varied damaging and destructive behaviour.

Thus, the consequences of boredom can serve a function for the individual to indicate the need to shift attention to more rewarding work. However, it also lessons motivation and available cognitive resources, and leads to counterproductive work behaviour.

Given this understanding of the consequences of boredom it does not seem imprudent to assume that decision-making competence would also be negatively impacted by feeling bored. How feeling bored would affect an individual manager and what the specific impact would be on decision-making competence is, however, still unanswered.

Interventions to alleviate boredom

Studies on management interventions to alleviate boredom have focused on varying task content, providing learning opportunities and fostering active communication between supervisors and employees. Findings of these studies will be outlined next.

Azizi (2009) looked at varying task content to provide more interesting and varied tasks, especially when the nature of the job has unavoidable routine imbedded, such as in the manufacturing context, by providing job rotation and effective scheduling. Learning opportunities and enough work to stimulate employees' minds were the focus of Mikulas and Vodanovich (1993). Rothlin and Werder (2007) drew attention to the need for active communication between supervisors and employees, ensuring that employees are not under-challenged, and countering the stress that builds up in employees who need to keep up a pretence of working productively.

Skowronski (2012) studied employees' coping mechanisms for alleviating boredom-inducing situations, noting that some employees engage constructively, both behaviourally (e.g., taking on additional tasks, helping colleagues, seeking training, changing the way or the speed with which they do tasks) and cognitively (e.g., thinking of how to improve, setting performance goals) in an attempt to alleviate boredom. Other employees disengage, both behaviourally (e.g., socializing in a non-task related way, surfing the web for personal use, gossiping) and cognitively (e.g., daydreaming, sleeping, abusing substances, losing concentration).

Van der Heijden et al. (2012) point out that these studies are only conceptual in nature, backed up with little empirical evidence. Furthermore, these studies do not connect these suggested interventions with interpersonal differences (such as personality traits or decision-making competence), which leaves a gap in research, especially in the organizational context.

In sum, studies have conceptualized different ways that boredom can be countered, both situationally and individually. Situationally recommended for managers are: varying of employees' tasks to avoid too much routine, engagement (communication) with employees and creating learning opportunities. On an individual level, behavioural and cognitive differences in how employees react to boredom have been noted. It is also noted that this research has all been done at a conceptual and not an empirical level. This conceptual research prompts questions such as: What else constitutes the differences in individuals experiencing boredom

(e.g., personality and decision-making consequences)? And can these types of conceptualization stand up to empirical rigour? It is hoped that the empirical investigation of the relationship between *feeling bored* and decision-making in this study will shed some light on these questions.

2.2. External context

Individuals and external contexts both shape and influence one another. In a seminal work on the impact of external context, Johns (2006, p. 386) defined "context" as "situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables. Context can serve as a main effect or interact with personal variables such as disposition to affect organizational behavior." This definition captures both the macro and micro impact of context, referencing the bi-directional influence that individuals and contexts have on each other.

Subsequently, various authors and editors have called for putting the external context back into research on organizations (Bamberger, 2008; Härtel & O'Connor, 2014; Rousseau & Fried, 2001). The nature of work (e.g., technology, hours required and the economic context within which organizations operate) has changed significantly since the "factory days" that informed many of the management theories currently still in use. Research that is grounded in context can enable the development of management theory that can be applied to twenty-first-century organizational needs (O'Leary & Almond, 2009).

There are several reasons researchers steer away from contextualizing research. Rousseau and Fried (2001) noted that the pressure researchers feel to deliver outcomes that can be generalized to multiple settings, as well as researchers' own blind spots to contexts which are mostly invisible, work against the inclusion of context. Bamberger (2008) questioned institutional and epistemological beliefs that theoretical contributions are substantial only when they have broad cross-context applicability, noting that such beliefs create barriers to contextualizing research. This perspective reinforces an earlier editorial by Rousseau and Fried (2001) that encouraged management scholars to contextualize organizational research to ensure that models and constructs are appropriately specified and generalizable to related contexts and current organizational realities.

Thus, this study echoes the notions put forth by the aforementioned scholars who argue for contextualizing research. The following discussion will outline the approach this research will follow to account for the company environment and role-setting in this research, and highlight why the retail context is particularly relevant to a study on boredom.

2.2.1. *Company environment and role-setting*

Research by Dierhoff, Rubin and Morgeson (2012) on 8,633 managers in 52 different managerial roles supports the notion that management studies need to be grounded in the macro external context, finding that the task, social and physical context of the organization has significant and predictable impact on managers' roles and tasks. This section will describe the two frameworks available to scholars for contextualizing their research and conclude with an outline of how these frameworks will be incorporated in this study.

One of the challenges management researchers face is the limited frameworks, language and theory available for guiding the incorporation of context into their studies (Arellano et al., 2014). There are two frameworks generally referenced by researchers for contextualizing research:

The three-tier framework outlined by Rousseau and Fried (2008) offers three options for contextualizing organizational research: 1) rich description of the research setting, 2) direct observation and analysis of contextual effect, and 3) comparative studies across institutions and cultures.

An alternative framework is the two-level approach developed by Johns (2006), in which level one (omnibus context) reports on occupation, location, time and rationale for the study, while level two (discrete contexts) reports on task, social and physical variables associated with the context.

Of these approaches, option 1 of the three-tier framework *(rich description of the research setting)* and Johns's two-level approach are relevant for contextualizing organizational research conducted with managers within one overarching organizational setting, such as this study. A rich description of the research setting calls for describing various organizational factors (e.g., company life cycle, structure, competitive environment), job factors (e.g., role, performance

criteria, career path), external environment (e.g., economy, location, national culture), comparing research across comparable studies and acknowledging how meaning can shift across contexts and time (Rhym, 2012). The two-level approach (Johns, 2006) overlaps with criteria specified for the rich description option, but adds more detailed requirements for describing the context at task, social and physical levels. The rich description and two-level approach frameworks will be utilized to describe the organization and task context within which this study was conducted, as described in the methods chapter.

It is worth noting that from an economic perspective, O'Leary and Almond (2009) found that the education and manufacturing industries are overrepresented in contextualized management research compared with retail, wholesale, construction and real estate, which are underrepresented. By focusing on the retail industry, this study will add knowledge to an area that has received little attention in previous research. More specific reasons why boredom is of particular interest in the retail environment will be outlined next.

2.2.2. *Relevance of boredom to the retail environment*

The importance of the role of middle managers in retail has been established in previous research, which has shown that middle managers play a critical role in team and company performance. For example, in a study of the retail gaming industry, middle managers were shown to account for 22.3% of the variation in revenue after controlling for other contextual factors (Sims, 2003).

King and Holtfreter (2011) demonstrated that boredom is of interest to retail employees and especially to retail managers who, at the operating level, are responsible for many details such as restocking of merchandise, scheduling and attending to a multitude of staff matters. Their study found that managers who "seem impervious to boredom, can maintain high accuracy in long spells of detailed work" experience increased job satisfaction and tenure compared with managers who were described as "capable of detailed routine for only short bursts, quick to delegate routine tasks" (p. 1).

The ability of managers to sustain performance that involves attending to many operational details over long hours seems of particular importance in the current retail environment, where

increased competition results in higher expectations of maximizing profits, reducing costs and working longer hours to accommodate current customer shopping patterns and attitudes (Smith & Elliott, 2012). In the words of one retail store manager, the purpose of the job can be summed up as: “I have a budget set by head office and I staff this floor according to the monetary budget that they set me, but how I spend the money is up to myself to cover the business. It’s also my role as manager to run the day to day operation of the unit and to recruit store managers for the future” (Smith & Elliott, 2012, p. 678). These operational responsibilities require managers to make many daily decisions that affect themselves, those who report to them, their bosses and their organizations (Dalal & Brooks, 2013).

Judgement and decision-making research from the past twenty years provides overwhelming evidence that people’s everyday judgements and decisions are critically influenced by emotions they experience at the time of decision-making. How people respond to a situation – for instance, whether they are more or less inclined to take risks or prefer punitive to lenient measures – has been shown to vary depending on their concurrent mood as well as the emotions they associate with potential outcomes. In addition, affect has been found to determine people’s cognitive strategies – that is, whether they are systematic in their decision-making or rely on heuristic cues (Mosier & Fischer, 2010). It is therefore plausible to infer that the feeling of boredom will be consequential in managers’ everyday operational decision-making. Managers’ moods and emotions also set the tone for the emotional atmosphere at work; for example, research has shown that when leaders were in a positive mood, their followers had more positive moods (Sy et al., 2005).

In sum, middle managers in retail play a significant role in revenue generation, while the environment of retail (e.g., doing long hours of routine and work that involves a lot of detail) is liable to create situational boredom conditions for managers and those who report to them. On an individual level, emotions and moods have been shown to impact on cognitive strategies and decision-making, making it plausible that emotion and mood boredom will impact individual managers’ decision-making competence. The question then arises, How can the differences between individual managers’ decision-making competence be understood within this overarching external retail context?

2.3. Internal context

Individuals' decisions are influenced mainly by three factors: decision features, situation features and individual differences (Einhorn, 1970; Hunt, Krzystofiak, Meindl, & Yousry, 1989). Of these, the individual differences factor – that is, the internal context – is the least understood (Appelt, Milch, Handgraaf, & Weber, 2011b).

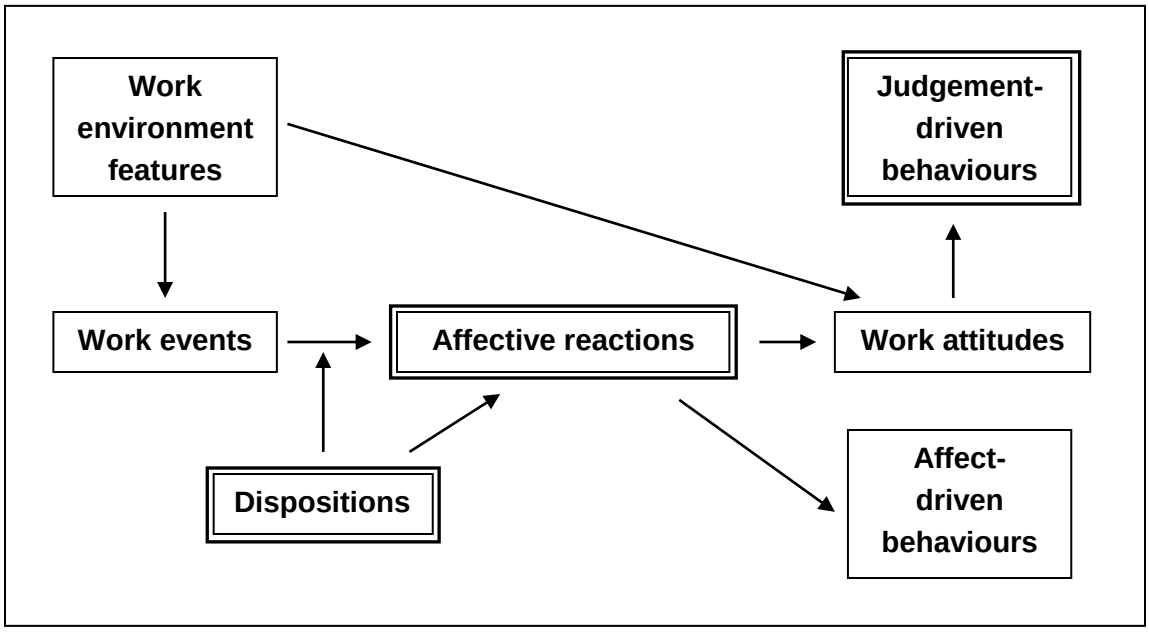
Affective Events Theory (AET) is considered the seminal model, providing an overarching framework for understanding the internal context of affect and decision-making within the work environment (Ashton-James & Ashkanasy, 2005). The following discussion provides a synopsis of the AET framework, highlighting how AET is applied in research pertaining to affect and decision-making. The AET framework (as visualized in Figure 2.1 below) is furthermore of specific importance to this study since it contextualizes both the person and the situation indicating the dynamic interactions between the parts (feeling bored, personality and decision-making competence) studied. As previously mentioned, feeling bored resides within the affective domain and subsequent discussions will outline that personality resides within the "dispositions" of the AET, whereas decision-making competence relates to judgement-driven behaviour.

2.3.1. *Affective Events Theory*

The Affective Events Theory (AET) proposed by Weiss and Cropanzano (1996) became a guiding force in the study of affect in the work environment and has been cited more than 2,400 times by scholars. They built the AET predominantly on a previous seminal study that was done by Hersey (1932). This researcher found that emotions and moods impacted daily behaviour and productivity, that some workers experienced different moods and mood cycles, and that the duration of mood cycles varied from worker to worker. Intrigued by these findings, Weiss and Cropanzano (1996) developed the AET, which considers individuals' affective structure and the work environment as interactive processes and equally important influencers of work performance.

The AET identifies various elements that impact people's judgement and behaviour at work, postulating that the work environment generates events that trigger people's affective reactions,

thus affecting work attitudes and beliefs, judgement and ultimately behaviour. The model can be visualized as follows:



Source: Weiss and Cropanzo, 1996, p. 12

Figure 2.1: Affective Events Theory: basic framework (1996)

The various elements noted in this framework will be described below with specific focus on the areas that are highlighted by double lines (dispositions, affective reactions and judgement) since they represent in broad terms the factors focused on in this study. Before delving into more detailed descriptions of each element highlighted in the AET, a few key points embedded in the foundation of this model and pointed out by its authors (Weiss & Cropanzano, 1996) are worth mentioning. First, this model offers an alternative to decision-making science frameworks that focus exclusively on judgement processes. Second, rather than merely relying on general features of the macro environment (e.g., industry or company), it proposes that *work events* happen daily at work and result in personal emotional reactions of those who experience such events. Third, the AET points out the importance of time, since emotions and moods fluctuate over time; and fourth, it acknowledges the dynamic nature of the structure of affective reactions and their ultimate impact on job performance. Furthermore, the authors of the AET acknowledge

that they concur with the cognitive judgement approach, which states that work events are evaluated first for their relevance to achieving goals; however, they view the cognitive appraisal as merely a departure point. These tenets outlined in the AET are important to the approach taken by this study since it enables positioning the elements under investigation in a framework that indicates the dynamic interplay between internal elements, internal context and external context.

Judgement-driven behaviour is noted as related to cognitive processing yet worthy of its own mention since it encapsulates biases in decision-making processes.

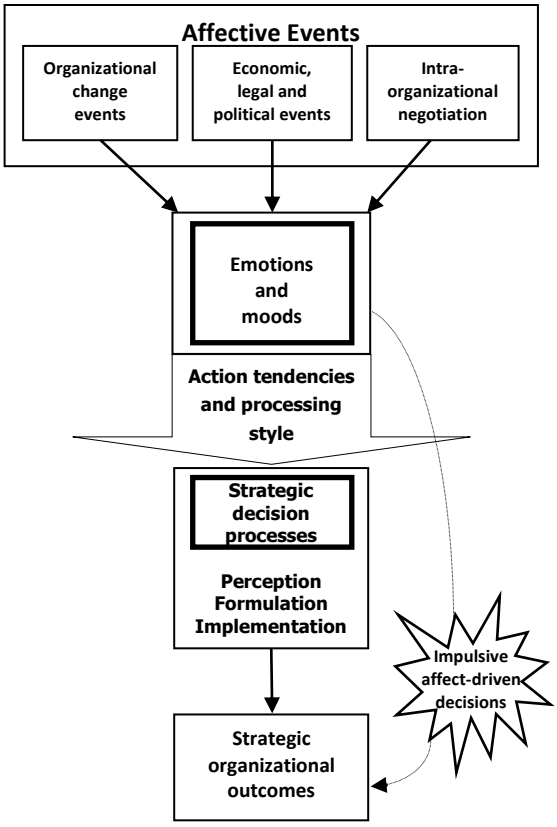
Affective reactions to events are described in terms of emotions and moods. The AET authors, Weiss and Cropanzano (1996), define emotions as reactions to events and acknowledge the positive affect/negative affect (PANA in short) categorization and also its discrete propensities. They note the contributions of various scholars who shaped their thinking and concur with cognitive appraisal theories, concluding that emotional reactions get filtered through two appraisal systems. The primary appraisal is intricately tied to an individual's personal goals and values yet bounded within behaviour or the larger environment or context, whereas the secondary appraisal is primarily concerned with certainty vs. uncertainty. Certainty is referenced in terms of one's ability to attain goal success, whereas uncertainty is experienced when no plan for achieving a goal is sensed or readily anticipated. Weiss and Cropanzano (1996) define *moods* in line with the definition offered by Frijda (1993), noting that they are less intense than emotions, last longer and are not in direct response to a specific event or object. Also influencing the founders of the AET was the research done on moods by Morris (1989). This author focused on the antecedents of moods and identified four sources of moods: mildly positive or negative events, the offset or residue of emotional reactions, recollection of emotional events and repression of emotions.

Weiss and Cropanzano (1996, pp. 37, 38) use the term *disposition* broadly, noting that studies done by Werner and Pervin (1986) indicate that personality trait dispositions may define how affective influences play out in certain situational settings. The authors acknowledge different views on the broad dispositional approach yet indicate their preference for the understanding of disposition provided by scholars of personality Staw and Ross (1985). However, the concept of disposition is left at a rather broad descriptive level in this seminal conceptual work on the AET,

which likely contributed to varied interpretations in later academic works such as indicated in Greenberg (2011, p. 152), who views dispositions as both personality and moods.

One of the founders of the AET and another colleague reflected on the application of the AET to studies of affect in work contexts (Weiss & Beal, 2005); the authors emphasized that the intent of AET is to serve as a macrostructure, and that further definition and description of the various processes outlined above are needed for AET to evolve into a testable theory. Understanding key definitions and concepts within the foundation AET framework is of particular importance to this study since scholars in the field have used the AET foundation framework to expand on the understanding of affect in organizational decision-making contexts. And later in this research, an expansion to a model with its roots in the AET will be proposed for understanding the concepts of feeling bored, personality and decision-making competence and their related dynamics within the macro work environment.

In 2008, Ashton-James and Ashkanasy extended the original AET model, claiming that the macro organizational environment also creates an affective context that subsequently impacts individuals' emotions, moods and strategic decision-making processes. The authors visualized this strategic decision-making perspective of AET as shown in Figure 2.2.



Source: Ashton-James and Ashkanasy, 2008, p. 7

Figure 2.2: Affective Events Theory: strategic decision-making framework (2008)

In this application of AET the authors describe individuals' internal reactions to external events as emotions and moods (note the first bolded box in the figure) while decision processes are focused on strategic decision-making (note the second bolded box in the figure). They further note the action tendencies associated with five discrete emotions – namely, anger, sadness, disgust, fear/anxiety and joy/happiness. Moods are described in terms of positive affect and negative affect. As shown in the figure above, this application of the AET broadens the conceptualization of the situational influence to include the economic, political, inter-organizational and change environment within which individuals in the organization operate, providing more specificity for defining the external context within which individuals (especially executives who are required to work more strategically) operate. However, this application of

the AET limits the conceptualization of the individual influences under which those at work operate by omitting the role of dispositions from its visualizations, inferences and definitions.

Thus, the AET framework provides a broad framework that captures the interplay within which the individual–situation dynamics operate at work, noting the parts, namely, affective reactions, dispositions and attitudes, that need to be considered in decision-making contexts. Applications of the AET have emphasized that affective events take place within a larger external context that needs to be included in situational descriptions. However, on an individual level, clarity of definition of the elements (e.g., affect and disposition) are still lacking, as is how the flow between parts operates, since flow is indicated only in broad terms. These challenges within the broad AET framework are partially addressed in a more recent theoretical framework, the Hybrid Process Decision-Making Model, which stays true (for the most part) to the broad tenets of the AET yet adds more specificity by describing how the parts fit together and flow within decision-making settings. The strengths, limitations and relevance of this model will be discussed next.

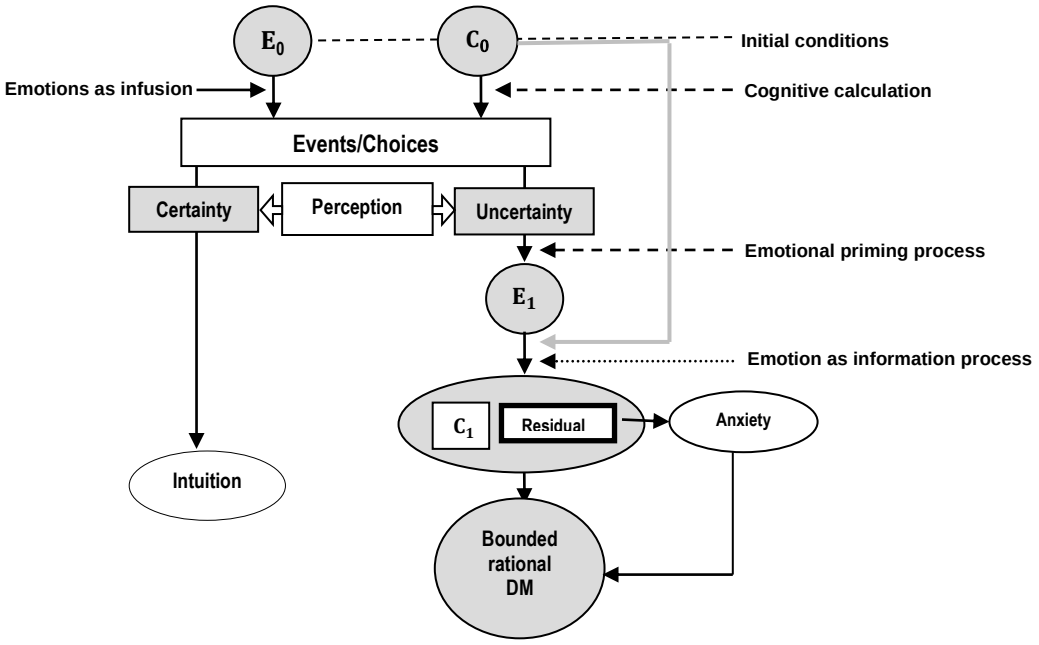
2.3.2. *Hybrid Process Decision-Making Model*

Noting the upsurge in research connecting decision-making to emotion, Li, Ashkanasy and Ahlstrom (2013) provided further clarification on the role of emotion and decision-making in the work environment by showing more clearly how the flow between these parts operates. Decision literature has debated whether emotion is rational or irrational and whether it should even be considered along with cognitive aspects; these authors point out the important role played by uncertainty in the interaction between emotions and decision-making in the work context.

To integrate the effects of cognition and emotions in the work context according to the level of uncertainty in any given situation, Li et al. (2013) proposed the Hybrid Process Decision-Making Model. The model incorporates both cognition and emotion, differentiating the effects of certainty and uncertainty, and makes emotional effects salient (in bounded rational decision-making) as a means of coping with uncertainty.

Within the proposed Hybrid Process Decision-Making Model, cognitive influences are seen as operating in three ways. First, cognition helps with the perception of uncertainty. Second, intuition (as part of cognition) is activated to make an intuitive decision quickly when decision events or tasks are perceived as certain. Third, when uncertainty is perceived, an affective construal is activated so the decision-maker can make sense of the situation, which in turn will provide emotional information and form a new cognition based on the value and probability of the choices, leading to a bounded rational decision.

A visual depiction of the proposed the Hybrid Process Decision-Making Model is shown in Figure 2.3.



Source: Li et al., 2013, p. 7

Figure 2.3: Hybrid Process Decision-Making Model of affect and cognition under uncertainty (2013)

The Hybrid Process Decision-Making Model (Li et al., 2013) differentiates the rational and irrational mechanisms of emotion in the decision-making process, postulating that emotions are integral to rational decision-making but that moods are not; the reasoning is that emotions are event-driven by nature and therefore relevant to specific decisions, whereas moods (given their diffuse nature of forming affective backdrop) are not. The authors also omit personality from this model without indicating why.

In this research the Hybrid Process Decision-Making Model of affect and cognition under uncertainty will be expanded on. This will be discussed next.

2.3.3. *Proposed expansion to the Hybrid Process Decision-Making Model*

This section first proposes an expansion to the Hybrid Process Decision-Making Model (HPDMM), to incorporate affect (emotions and moods), personality and decision-making competence into the model's overarching framework. In addition, the relevance of uncertainty to this study and various linkages between elements will be discussed.

The HPDMM is useful for understanding decision-making and has added to the AET framework by differentiating between conditions of certainty and uncertainty in work contexts. In this model Li et al. (2013) show the role of emotion and cognition under uncertainty and how the decision-making process flows differently depending on whether a work event has uncertainty embedded. However, the model's view on affect (which includes only the emotions component of affect) and cognition (not inclusive of decision-making competence) and its exclusion of personality limits its ability to explain decision choices in a complete and nuanced manner. More important, this limitation could lead decision researchers to exclude moods, personality and decision-making competence in future studies. The proposed expansion to the HPDMM will first be shown visually and thereafter linkages and definitions of individual parts will be explained more comprehensively. This model will be used in this study to investigate the impact of feeling bored (within the affective domain) and the role of personality on decision-making competence of middle managers in the retail context.

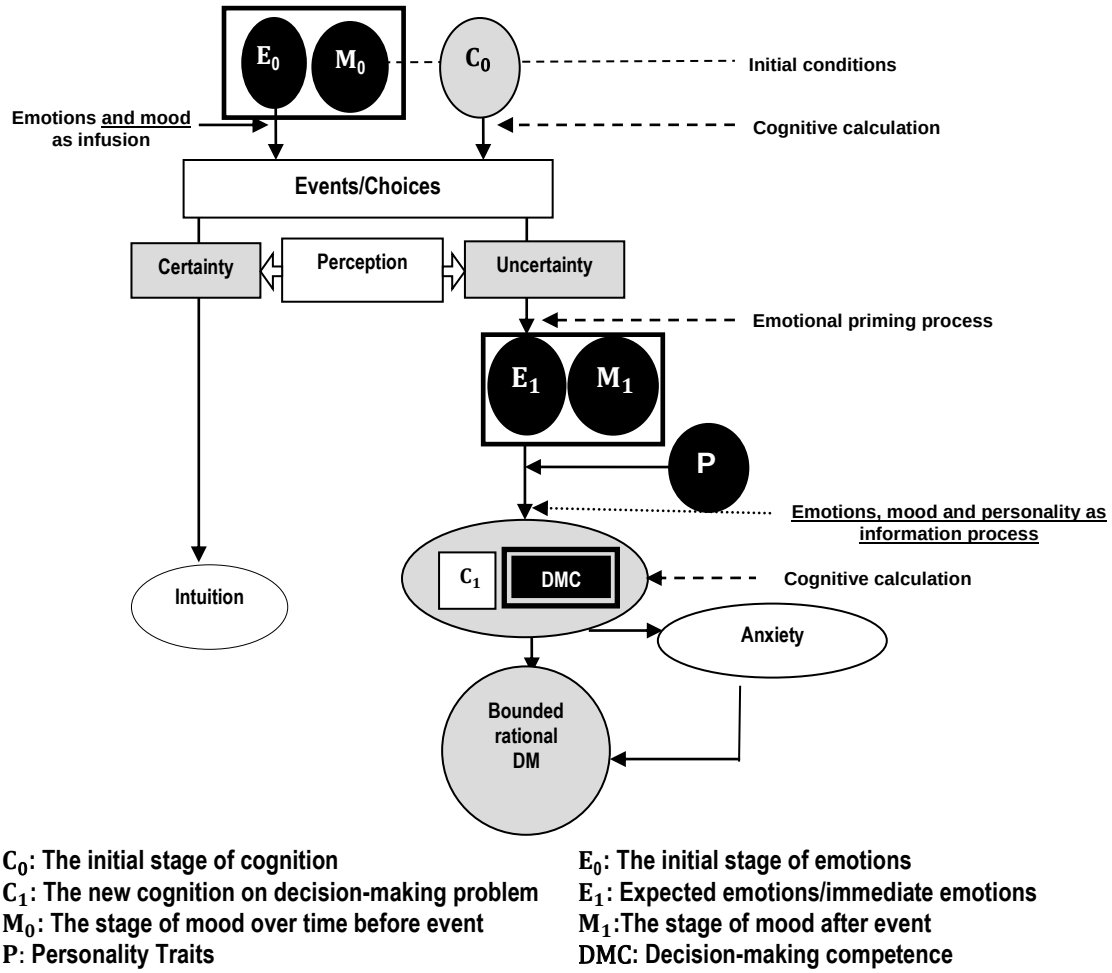


Figure 2.4: Expanded Decision-Making Process Model: affect, personality, cognition and decision-making competence under uncertainty

Figure 2.4 shows four proposed changes to the Hybrid Process Decision-Making Model, proposing that i) conditions of uncertainty activate emotions, moods and personality, not only emotions; ii) affective reactions, defined as *feeling*, constitute moods and emotions; iii) decision-making competence can replace the *residual effect* noted in the HPDMM, providing more specificity to the model by showing that cognitive ability and decision-making competence work together when cognitive calculations are made; and iv) personality needs to be considered as a

moderating factor. The changed elements are indicated in the figure by their **black background and bolded borders**. The revised model incorporating these four suggested changes will be described henceforth as the Expanded Decision-Making Process Model (EDMPM).

Key areas (within the scope of the constructs covered in this study, namely, emotions, moods, personality and decision-making competence) where this model departs from the HPDMM in the areas that flow between uncertainty and bounded rational DM will be discussed next, albeit briefly. More comprehensive conceptualizations of the pertinent constructs will be covered in subsequent sections.

Uncertainty impacts affective reactions (emotions and moods) and personality

The **first point of departure** between the HPDMM and the EDMPM is about the impact of uncertainty. Within the HPDMM the impact of uncertainty is presumed to affect only emotion. However, researchers Judge and Zapata (2015) found empirical evidence showing that work situations that present uncertainty (such as unstructured work) and where discretion is required to make decisions also trigger personality traits. These authors provide empirical proof that uncertainty as conceptualized by Li et al. (2013) matters, yet their conclusions differ as to which constructs are impacted by uncertainty. Li et al. (2013) presumed that only emotions (not moods or personality) get triggered by uncertainty, whereas Judge and Zapata (2015) considered only personality traits in their study, without considering emotions or moods. Earlier research also found that moods influence both emotions and decision-making (Dwyer & Ganster, 1991). Collectively, this points to the need for considering emotions, moods and personality under conditions of uncertainty.

Using time duration as conceptualized by Oatley et al. (2006) (Figure 2.5) as the key differentiator between emotions, moods and personality could indicate that emotions, moods and personality will play different roles under conditions of uncertainty, yet this does not diminish the need for understanding what the specific impact of each component is in decision-making contexts. And as per definition, using this timeframe perspective of Oatley et al. (2006) to differentiate among emotions, moods and personality has been verified by other researchers who have noted that emotional reactions form in milliseconds and are reported in minutes and hours (Boyatzis et al., 2012), whereas moods can last from days to weeks, and personality traits are persistent over years – and in some cases last a lifetime (Roberts, Walton, & Viechtbauer,

2006). Personality is considered to form a coherent pattern (Revelle & Scherer, 2009), whereas emotions are reactions to specific events, and moods can be experienced without any specific causes (Desmet et al., 2012).

This understanding of emotions, moods and personality can be illustrated as follows:

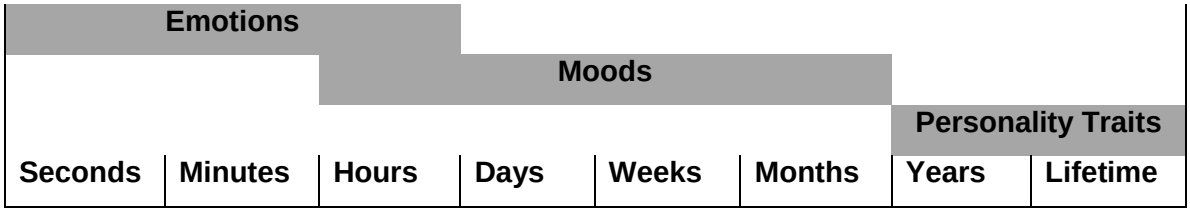


Figure 2.5: Time-based spectrum of affect

The definitions for emotions, moods, personality traits and decision-making competence will be more comprehensively contextualized in the theory in later sections. However, a preview of what is to follow is deemed appropriate to explain the concepts of emotions and moods depicted by the Expanded Hybrid Process Decision-Making Model at this point.

The definition of emotion in Figure 2.4 is aligned with the definition posed by Li et al. (2013) as seen under E_1 (Expected emotions/immediate emotions).

Mood has been shown to have an impact on decisions (Raghunathan & Pham, 1999). However, moods are also considered to be diffuse in nature and last from hours to months (Kelly & Barsade, 2001; Oatley et al., 2006), indicating that one would need to consider moods over a period of time before and after experiencing events imbedded with uncertainty. As such, mood is defined in Figure 2.4 under M_0 (Mood over a period of time before event) and M_1 (Mood after event).

Personality will be conceptualized as personality traits. A comprehensive motivation for conceptualizing personality as *personality traits* in the context of work will be outlined in Section 2.5.

In sum, given that research indicates that emotions and personality are triggered by uncertainty and that moods also play a role in decision contexts, this research proposes that the Hybrid Process Decision-Making Model be modified to incorporate both aspects of affect (emotions and moods) and personality rather than emotions alone, as shown in Figure 2.4. The second point of departure from the HPDMM will be discussed next.

Affective reactions as emotions and moods

The **second point of departure** between the HPDMM and the EDMPM is related to the first point, yet is worth mentioning. This study proposes that research on affective reactions at work should more often include both emotions and mood components as per definition. A review of the literature reveals a trend over the past twenty years for researchers to view the affective structure in progressively narrower terms. As shown in Figure 2.1, the original AET framework by Weiss and Cropanzano (1996) included both emotions and moods in their conceptualizations of affective reaction.

However, over the past two decades, this more comprehensive perspective gave way to a more reductionist approach, as illustrated by the examples shown in Table 2.1.

Table 2.1: Narrowing Definition of Affect over the Past Twenty Years

AET (1996)	AET (2008)	AET Derivative (Hybrid Process Decision-Making Model) (2013)
Work events trigger affective reactions (**emotions and moods)**, which are moderated by dispositions such as personality (Weiss & Cropanzano, 1996).	Affect is indicated as **emotions and moods** (Ashton-James & Ashkanasy, 2008).	Affect is indicated as **emotions** (Li et al., 2013).

Narrowing the definition of affective reactions to either emotions or moods in organizational settings will likely limit the understanding of how affective reactions impact decision-making and, consequently, job performance. This discussion will be continued in more depth under the section that defines feeling bored within the affective domain. Note that in the proposed EDMPM shown in Figure 2.4 above, emotions and moods are both considered.

The **third point of departure** between the HPDMM and the EDMPM is about identifying "residual" in more specific terms, noting that decision-making competence is a key additional factor that needs to be considered in addition to cognition for understanding cognitive calculation processing. This point of differentiation will be elaborated on next.

Cognition and decision-making competence included in cognitive calculation

Cognition impacts decision-making (Benjamin, Brown, & Shapiro, 2013) and work performance. A strong positive relationship between cognitive ability and job performance has been well researched and documented in meta-studies with a history that span more than a century (Schmidt & Hunter, 2004). Clear measures for assessing cognitive ability exists (Prinsloo & Barrett, 2013) and have been shown to predict job and supervisory performance of managers (Hunter, 1986) for decades. In contrast, decision-making competence (DMC) is a relative new construct in the larger cognitive domain, with a history of less than a decade (Bruine de Bruin, Parker, & Fischhoff, 2007), and has not as yet gained widespread acknowledgement, although it has been heralded as the most extant work by researchers of judgement and decision-making (Dalal & Brooks, 2013). However, DMC is showing to explain decision-making above and beyond cognitive ability and therefore warrants further investigation (Bruine de Bruin et al., 2007).

2.4. Decision-making competence

In this section the important role decision-making plays in the life of middle managers will be discussed in terms of the context within which their everyday decisions take place. Given the pertinence of DMC in understanding decision-making above and beyond cognitive ability, a more in-depth description of how DMC evolved within the decision-making theory domain will follow, concluding with a definition of the domains within DMC used in this study.

2.4.1. *Relevance of decision-making to managers*

Research examining the role of middle managers has stated that competent problem-solving and decision-making (van der Merwe, 2008) and judgement (Ekaterini, 2011) are critical to their job performance. Ekaterini (2011, p. 567) noted that the leadership effectiveness of middle managers is contingent on the ability to "make decisions with the spirit of calmness, coolness, objectivity and respect to others." Middle-manager decision-making typically takes place under stress and time pressure. Situations in which middle managers need to make decisions often involve staff, such as employee non-performance or non-professional behaviour.

2.4.2. *Pertinent theory*

Decision science is a multidisciplinary area of study concerned with how decision-makers make (or should make) decisions, and how optimal decisions can be reached in real life. From a theoretical perspective, Ward Edwards is viewed as the founder of behavioural decision-making research; his "A theory of decision-making" (1954) is credited for bringing utility theory from abstraction to practice and providing a framework within which behaviour can be understood.

Frameworks used by judgement and decision-making theorists

After 61 years of research, decision-making scholars have yet to reach consensus on one unifying theory within which to conduct research on decision-making (Appelt, Milch, Handgraaf, & Weber, 2011a; Nutt, 2011). However, three approaches emerged as categories within which decision-making scholars frame their studies: 1) *normative analysis* (identifying the best options and consequences of actions), 2) *descriptive accounts* (commenting on individuals' ability to avoid biases or errors compared to others) and 3) *prescriptive aims* (providing recommended interventions to enable improved decision-making) (Fischhoff, 2012; Nutt, 2011).

In 1955 the concept of bounded rationality (as referenced in the HPDMM) was introduced (Simon, 1955). Bounded rationality assumes that individuals' ability to make decisions has boundaries and that these boundaries are formed by their cognitive ability, the information they have and the time they have for making such decisions. Within this *normative approach* rationality is touted as optimal.

About 20 years later Tversky, who in 2002 won the Nobel Prize in Economics (Guomei & Qicheng, 2003), and Kahneman furthered the thoughts introduced by the bounded rational theory and formulated the concept of decision-making under conditions of uncertainty, noting in their research that decisions are in reality often based on heuristics (also referred to as mental shortcuts or decision biases) that are formed as beliefs about what the odds or probabilities are that some uncertain consequence will occur (Tversky & Kahneman, 1974). In this body of research, heuristics (or biases) have been deemed to aptly describe (as per the *descriptive* approach to the utility theory) how people (including managers) make decisions in applied work settings under the pressure of time. It was noted that people typically extend less effort and quicken decision-making (i.e., use heuristics to guide their choices). Heuristics had been labelled as biases (i.e., less rational and something to be avoided) in this landmark study.

Diverting from these perspectives, some researchers are now seeing some heuristics (e.g., the *less-is-more* heuristic) as having both accuracy and adaptive utility, especially in real world work situations (such as retail management) where decisions of a less complex nature are frequently made (e.g., "which customer is likely to purchase again") (Gigerenzer & Gaissmaier, 2011), thus positioning heuristics as having both *descriptive* and *prescriptive* qualities. These authors found that heuristics can be learned with experience, not only from cognition, and that the accuracy of individuals' heuristics depends on their applicability, or as Gigerenzer and Gaissmaier (2011, p. 474) put it, "ecological rationality" to the environment within which they operate.

The normative, descriptive and prescriptive frameworks within which decision-making theorists conduct research provide taxonomies for encapsulating decision-making. However, theories as to what specifically constitutes decision-making competence were still lacking until fairly recently.

Evolvement of DMC from Decision-Making Theory

Bruine de Bruine, Parker and Fischhoff (2007) filled this void by developing the Adult Decision-Making Competence battery (A-DMC), thus changing the playing field by enabling DMC to be measured alongside cognitive and other behavioural measures. They framed their measure of DMC within the normative approach of decision theory, acknowledging the four processes embedded in sound decisions noted by Edwards (1954) and Raiffa (1968), namely, i) belief assessment (checking assumptions), ii) value assessment (goal congruence), iii) integration

(coherence between beliefs, values and goals) and iv) metacognition (accurate perception of own abilities). Combined, these processes refer to how accurately one's own internal beliefs and assumptions concur with external evidence and criteria (Bruine de Bruin & Keren, 2003) in making choices, assuming better decision processes will improve decision outcomes (Strough, Parker, & Bruine de Bruin, 2015). From this foundation Bruine de Bruin et al. (2007) distilled six domains of general decision-making competence. In their study these six domains of general decision-making competence showed significant predictive validity for indicating individuals' ability to avoid making suboptimal decisions after controlling for cognitive ability and decision-making styles. These domains (also noted as heuristics or decision competence in their research) are individuals' ability to 1) resist sunk costs (such as continuing to spend money on a failed project because it was originally thought of as a worthwhile pursuit), 2) apply decision rules, 3) remain appropriately confident, 4) resist framing, 5) behave in a socially apt manner in varied contexts (social norming) and 6) be consistent in perceiving risk.

DMC describing cognitive calculation beyond cognitive ability

Four of the six decision-making competence (DMC) domains – namely, risk perception, confidence, resistance to framing and decision-making rules – have been shown to correlate significantly with cognitive ability (Del Missier, Mäntylä, & Bruine de Bruin, 2012) and to predict decision outcomes independent of cognitive ability (Bruine de Bruin et al., 2007). These findings show that DMC is an important factor to consider when researching decision-making processes.

As mentioned, cognitive ability (also labelled as general intelligence or general mental ability or executive functioning) has been established as a significant differentiator of the performance of individuals in work contexts; however, on its own, it is not enough to explain the considerable variability in individual decision choices (Furnham, 2008; Gonzalez, 2004). Two of the decision-making competence domains identified by Bruine de Bruin et al. (2007) – social norming and resistance to sunk costs – do not show a relation to cognitive ability (Del Missier et al., 2012). Given the significant correlation of general intelligence with work performance, this study will focus on the latter four decision-making competencies (decision rules, confidence, resistance to framing and risk perception), and will attempt to determine the effect that feeling bored and personality has on them.

Taking this stance has the aim of replacing “residual” in Figure 2.3 of the HPDMM with these decision-making competence (DMC) domains. Together, cognitive ability and the four decision-making competence domains provide a more comprehensive presentation of what constitutes “cognitive calculation” in the EDMPM shown in Figure 2.4. The specific definitions of these four dimensions (decision rules, confidence, resistance to framing and risk perception) will be outlined in the decision-making competence section below.

2.4.3. *Definition of decision-making competence*

For the purposes of this study, decision-making competence at work is defined as the ability to avoid suboptimal decision outcomes in the domains of 1) applying decision rules, 2) remaining appropriately confident, 3) evaluating risk appropriately and 4) resisting framing biases (Bruine de Bruin et al., 2007).

Applying decision rules refers to the ability to follow probability rules (Bruine de Bruin et al., 2007). This definition evolved from what Payne, Bettman and Johnson (1993) called “the adaptive decision-maker.” Adaptive decision-makers consistently employ a varied repertoire of decision-making strategies appropriate to context, using quantitative and qualitative reasoning to do so. The authors cite several decision heuristics and rules that adaptive decision-makers employ when considering alternatives, namely:

- the weighted additive rule (considering relative importance, value and utility)
- the equal weight heuristic (examining attributes of all alternatives)
- the satisficing heuristic (comparing alternatives against a cut-off level perceived as adequate),
- the lexicographic heuristic (picking the critical attribute and comparing alternatives against this attribute)
- the elimination heuristic (determining the most important attribute first and then comparing alternatives against this attribute)
- the majority of confirming dimensions heuristic (reviewing alternatives in pairs, and choosing the alternative with the comparatively best attributes), and

- the frequency of good and bad features heuristic (identifying “good” or “bad” cut-offs and choosing alternatives depending on whether an alternative has more good or bad features).

Appropriate confidence refers to an individual’s ability to be accurately confident about his or her knowledge about different scenarios or content areas – in other words, how well you *actually* know versus how well you *think* you know (Slovic, Fischhoff, & Lichtenstein, 1977).

Overconfidence, a frequently encountered decision bias, refers to overestimating one’s own performance, assessing one’s own performance more favourably than that of others, and a strong belief in being right (Moore & Healy, 2008). Low performers tend to overestimate their performance, while high performers typically match their confidence level with more accuracy, but tend to underestimate their own performance (Hartwig & Dunlosky, 2014). Confidence levels are least accurate when evaluating others, which is a function typically expected of managers (Hartwig & Dunlosky, 2014).

Consistency in risk perception refers to a person’s ability to accurately perceive risk. However, risk perceptions are often inaccurate (Johnson & Tversky, 1983).

Resisting framing refers to an individual’s ability to remain objective when choosing one option over another, resisting the bias of being swayed by the language in which an option is presented (Tversky & Kahneman, 1985). For example, financial data that show only costs without including potential future revenue elicits different choices from managers than data that present both costs and revenue. And managers involved in initially approving a project tend to escalate their commitment as time goes on, becoming more biased towards hearing positive feedback about its progress (Rutledge, 2011).

In sum, aligned with the visual presentation of the EDMPM (Figure 2.4), the research covered in this section indicates the need for including both cognitive ability and DMC (applying decision rules, appropriate confidence, consistency in risk perception and resisting framing) when researching cognitive calculation in action work settings where time pressure for making decisions is evident.

However, research has also shown a link between personality and domains of decision-making competence, especially under conditions of uncertainty. Lauriola and Levin (2001) found that personality traits affect decision-making differently (especially when risk is involved) when demographics are considered. Brand and Altstötter-Gleich (2008) noted that decision-making in ambiguous and risky situations correlated differently with specific facets of personality – for example, perfectionism influences decision-making under risky conditions where there are specific rules for rewards and punishment, but not in contexts where information about possible outcomes is ambiguous. The latter research brings up the **fourth point of departure** between the HPDMM and the EDMPM, arguing for the inclusion of personality. The role of personality as visualized in the EDMPM will be discussed in Section 2.7.4 below; however, to do justice to that discussion a better understanding of the construct and definition of personality is called for first.

2.5. Personality

In this section the theoretical traditions of personality will be noted, followed by a discussion about the theoretical tradition and taxonomies most relevant to the study of personality in the work context. An overview of the literature about taxonomies describing personality at work will indicate how scholars converged to a point where five personality traits (or *parts*) are acknowledged as a representative structure (or *organization*) for describing personality at work (Christiansen & Tett, 2013; Digman, 1990). The section will conclude by defining these five personality traits in the Five Factor Model within the broad defines of personality outlined by Larsen and Buss (2010), indicating its specific relevance to this study.

2.5.1. *Theoretical background*

What is personality? In English the word “personality” originates from the word *persona* used in Greek in about 500 B.C. to describe the large masks that actors of drama wore (Hogan & Smither, 2008, p. 16). In scholarly settings, there are two main traditions from which researchers approach this question: explanatory (referencing the real inner self, answering the question *why* we are who we are) and descriptive (referencing reputation, answering the question *how* others describe us) (Hogan & Smither, 2008). Both these traditions have a rich history in scholarly work, and can be found in textbooks such as *Personality Theories and Applications* (Hogan & Smither, 2008). In applied settings, such as work environments, the descriptive tradition is most widely used likely because that which can be described can be measured. Measurement is a

specific challenge in personality theories following the explanatory tradition. Given that this study is situated in the work context, the following discussion will focus on the evolution of personality taxonomies within the descriptive tradition that bear relevance to shaping current taxonomies of personality at work.

Scholars from the descriptive tradition typically understand personality from four perspectives: (i) its *parts* (e.g., traits), (ii) its *organization* including its structure or dynamics (e.g., grouping of traits), (iii) its *definition* including the system it represents, its boundaries, its expressions and interactions with other systems in close proximity, and (iv) its *development* over time (Mayer, 2015). Larsen and Buss (2010) provide a definition that aptly integrates these four perspectives of personality by defining personality as "the set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptation to, the intrapsychic, physical and social environments."

This description of personality evolved from conceptualizations about personality that were strongly divided, which will be discussed next.

2.5.2. *Taxonomies for describing personality at work*

The study of personality in the management context is of particular relevance. Without having personality as a construct it would be difficult to explain why some managers in the context of managerial work are known for being more conscientious than others, or less agreeable to input from others. According to Personality research at work dates back to A.D. 206, when the Chinese used personality assessments to select civil servants (Hogan & Smither, 2008). Since then there have been several thought leaders in the study of personality, in general life and in work contexts. The next section will explore forces that shaped the current understanding of the personality construct in the work context over the past century.

Historic overview

During the previous 100 years the study of personality in social sciences has particularly excelled since the 1930s when the journal *Character and Personality* was launched (McDougall, 1932). However, until the 1990s, the research on personality was an arduous journey. About a century ago the study of personality was particularly divided between those who favoured

conceptualization of personality as *behavioural acts* vs. those who favoured *dynamic concepts*, with either/or thinking prevalent in definitions and study (Eysenck, 2013).

Scholars following the *behavioural specificity perspective*, looking only at *observable parts* of personality, were rooted in the experimental tradition. Watson, a pertinent advocate of the behavioural perspective, at the time reacted to the subjective nature of psychology in general and to the conceptualization of personality. He took an extreme view, claiming that all behaviour is a result of learning and that observing behaviour is the *only* way acceptable for scientific study. In the behavioural paradigm the assumption is made that personality can only be described as the sum of actual behavioural observations over a period of time (Watson, 1930; Wilson, 1989). This extremist conceptualization of personality did not survive the test of time (Eysenck, 2013).

Scholars understanding personality in *dynamic* terms conceptualized it as composed of several autonomous yet interdependent systems, inclusive both of innate biological dispositions and instincts, and of acquired dispositions and instincts, according to Prince (1908), or inclusive of a personal ego and consciousness and a personal and collective unconscious, according to Jung (1939). Jung is arguably one of the most pertinent theorists of the *dynamic concept* of personality from the 1920s to 1960s (Eysenck, 2013). Within the work context the work of Jung is often referred to as *personality type* given the widespread use of the Myers-Briggs Type Indicator (MBTI) personality measure (Myers, 1962), which is based on Jung's theory of personality. However, the concept of *type* was criticized, especially by western scholars of personality, primarily for its lack of continuous distributions; they argued for example that a person is not a pure "introvert" or "extravert," which made the classification system too imprecise for scientific purposes.

Eysenck (2013) noted that the foundation of this criticism is flawed, since Jung and fellow theorists viewing personality as a dynamic construct acknowledged the fluidity between extreme end points, for example between those who are typed as extraverts vs. introverts. However, part of what contributed to this criticism by Western scholars about the *dynamic* concept of personality is the way in which its measurement by earlier versions of the MBTI was operationalized and applied. For example, the MBI instrument in its original form allowed for only pure classification as either extravert or introvert, with no acknowledgement of a continuum

on an introvert–extravert scale; individuals were labelled as, for example, ENTJ (meaning an extravert, intuitive, thinking, judgement type), ISFP (meaning an introvert, sensing, feeling, perceiving type) or different combinations of the two options for each of the four categories such as INTJ, ESTJ, INFP (Myers, 1962).

This theoretical criticism of the dynamic conceptualization of personality stifled its growth in academic circles even though it still enjoys widespread appeal in work contexts, likely because it is easier for the layperson to understand an organized grouping of personality parts, rather than mere parts (or traits). The measurement of personality within the dynamic framework, as per the MBTI, appeared to have as a strength the ability to act as an *organizing* framework for defining personality. However, it was weak in differentiating with any degree of nuance between the relative extremes of the varied *parts* of personality, for example only labelling someone as an “introvert” or “extravert.”

Noting this conundrum, Allport (1937) laid the groundwork for propelling the trait theory as the preferred line of inquiry by personality scholars, arguing that personality traits (as *parts* of personality) need to be understood within an *organizing* structure, noting also that personality denotes how different individuals adapt differently when confronted with the same situation. In the work environment personality is of particular interest because it presumes that knowing someone’s personality can predict how a person will behave at work. Consequently, between the 1930s and 1960s, interest in studying personality traits blossomed. There were many debates around competing trait models, of which those involving Guilford, Cattell and Eysenck are the most notable (McCrae & Costa Jr, 2013).

Emergence of the Five-Factor Model

Cattell systematically analysed factors that describe the personality construct using college students as participants and came up with 16 primary factors that represent personality (Cattell, 1943, 1946; Cattell, 1947, 1948). Several researchers, independent of each other, attempted to replicate the findings of Cattell yet they all independently concluded that the domain of personality can be adequately described by 5 factors (Borgatta, 1964; Fiske, 1949; Norman, 1963; Tupes & Christal, 1961). However, rather than eliciting excitement and inspiring scientific inquiry this intriguing finding was followed by a dry spell in research of personality.

Between the 1960s and 1990s researchers neglected the study of personality, mainly due to damaging critiques published by Guion and Gottier (1965) on the validity of personality measurement and by Walter Mischel (1968) on personality theory; this discouraged further research on personality and fuelled scepticism by journal reviewers who were reluctant to publish research on personality. When the study of personality resurged in the 1990s, Digman (1990) encapsulated and published the similarities found by different scholars of personality, noting it as the *emergence of the five-factor model,* as seen in Table 2.2 below.

Table 2.2: The five robust dimensions of personality from Fiske (1949) till Peabody and Goldberg (1989)

Author	I	II	III	IV	V
Fiske (1949)	social adaptability	conformity	will to achieve*	emotional control	inquiring intellect
Eysenck (1970)	extraversion	Psychotism	neuroticism		
Tupes & Christal (1961)	Surgency	agreeableness	dependability	emotionality	culture
Norman (1963)	Surgency	agreeableness	conscientiousness	emotionality	culture
Borgatta (1964)	assertiveness	likeability	task interest	emotionality	intelligence
Cattell (1957)	Exvia	cortertia	superego strength	anxiety	intelligence
Guilford (1975)	social activity	paranoid disposition	thinking introversion	emotional stability	
Digman (1988)	extraversion	friendly compliance	will to achieve	neuroticism	intellect
Hogan (1986)	sociability and ambition	likeability	prudence	adjustment	intellectance
Costa & McCrae (1985)	extraversion	agreeableness	conscientiousness	neuroticism	openness
Peabody & Goldberg (1989)	Power	love	work	affect	intellect
Tellegen (1985)	positive emotionality		constraint	negative emotionality	
Lorr (1986)	interpersonal involvement	level of socialization	self-control	emotional stability	independent

*Not in the original analysis but noted in a re-analysis by Digman & Takemoto-Chock (1981).

Source: Digman, 1990, p. 423

Though progress had been made, the Big Five was not yet universally accepted as a descriptive structure for personality by scholars of personality, due to the many existing variations. The real resurge in the interest in personality happened in 1992 and can largely be attributed to the work of Costa and McCrae, who provided meta-analytical evidence for the Five Factor Model as a valid and reliable way to describe personality traits (Furnham, 2008). Currently, standing on the evidence of multiple meta-analytical studies (Barrick & Mount, 1991; Huang, Ryan, Zabel, & Palmer, 2014; Judge, Heller, & Mount, 2002), researchers have converged in accepting the Five Factor personality trait model as a valid and reliable framework for describing personality, including personality in work settings. Clearer definition of these global terms capturing the Five Factors of personality will be explained next.

2.5.3. *Defining personality within the Five Factor personality trait model*

Thousands of trait descriptions are used in language and there is still some disagreement when it comes to the conclusive terminology of the Big Five; however, in most research the Five Factors are labelled as: *extraversion, agreeableness, conscientiousness, neuroticism/emotional adjustment* and *openness*.

Using factor analysis, scientists were able to distil five factors sufficient to describe and encapsulate all personality traits (Digman, 1990). The resulting model describes personality from a trait perspective, breaking down behavioural patterns into five factors that each reference a continuum (Costa & McCrae, 1992; Salgado, 1997). The Five Factor Model of personality has continued to withstand the test of scientific rigour over time (McCrae & Costa Jr, 2013).

In the Five Factor Model, *extraversion* refers to a person's level of sociability (needing stimulation, assertive, gregarious) vs. introversion (reserved, aloof, quiet). *Agreeableness* refers to a person's level of compassion (cooperative, warm, agreeable) vs. antagonism (cold, disagreeable). *Neuroticism/emotional adjustment* refers to a person's level of emotional instability (insecure, anxious, depressed, hostile, easily stressed) vs. emotional stability (calm, self-confident, cool-headed). *Conscientiousness* refers to a person's level of reliability (hard-working, self-directed, organized, dependable and persevering) vs. unreliability (lazy, disorganized, careless). Finally, *openness* refers to the level of openness (embracing,

appreciating and seeking new experiences, curious, cultured) vs. rigidity in beliefs (narrow interests, dogmatic, behaviourally set in one's ways).

Of the five traits, *openness* is the least well understood and least researched (Griffin & Hesketh, 2004). Hogan and Hogan recognized the ambiguity embedded in the broad *openness* factor, noting that it includes themes of cultural interest and educational achievement, arguing that the broad domain would be better represented as two dimensions within the overarching openness factor. The two dimensions proposed are "ability" and "curiosity." He subsequently developed a measurement tool (HPI) that encapsulates both dimensions in the broad openness scale, labelling it "intellectance" referring to people who are "bright, creative and well-educated" (resembling the *cultured* dimension observed by other researchers of the Five Factors) and "school success" (resembling the *intelligence* dimension observed by other researchers of the Five Factors) referring to people who "enjoy academic pursuits and [are] good students" (2002, p. 16).

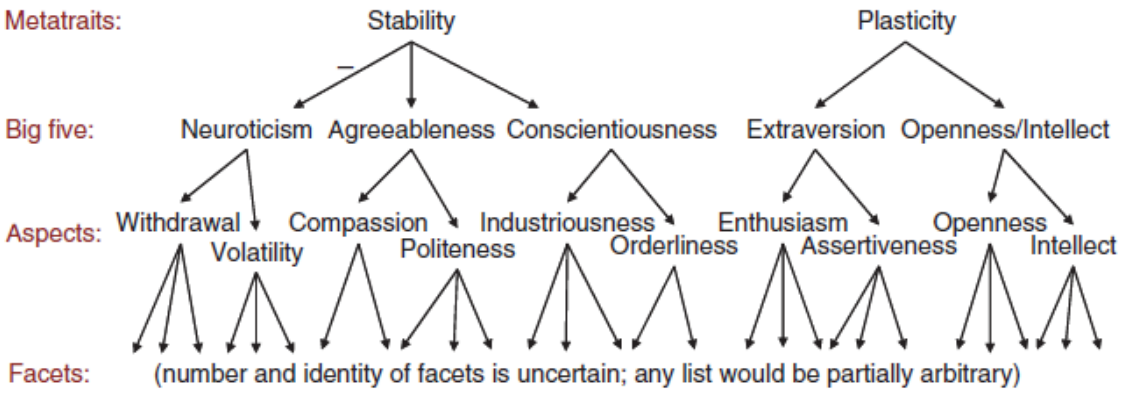
As we are reminded by Oswald, Hough and Ock (2013), the Five Factor Model does not function as a *theory* of personality; rather, it provides an overarching structure (*organizing system*) within which to describe (not explain) the traits (*parts*) representing personality. This then prompts the question, What is a trait, and are there other models or taxonomies for understanding personality within or outside the broad Five Factor structure that could potentially be more useful in the work context? This question will be explored next.

Hierarchy of personality

In more recent history, personality researchers have disagreed about whether the Five Factor Model provides sufficient structure for describing personality. For example, McAdams and Pals (2006, p. 204) propose that personality be conceptualized "as (a) an individual's unique variation on the general evolutionary design for human nature, expressed as a developing pattern of (b) dispositional traits, (c) characteristic adaptations, and (d) self-defining life narratives, complexly and differentially situated in culture and social context."

DeYoung (2010) embraced this broader definition of personality and proposed an expanded hierarchy for describing personality that included four levels, each level representing different

sets of biological markers that cause traits (as defined by the Five Factor Model) to co-vary. Visually DeYoung's hierarchical model can be depicted as follows:



Source: DeYoung, 2010, p. 1169

Figure 2.6: Levels of personality

This depiction of the hierarchy of personality introduces the question whether there is a general factor of personality. McCrae and Costa Jr (2013), on the other hand, disagree with the need to describe personality beyond the traits established by the Five Factor Model, noting that their analysis found these meta-traits as a result of study method artifacts. However, a meta-analysis by other researchers (van der Linden, te Nijenhuis, & Bakker, 2010) (K = 212 and n = 144,177) using multi-method testing found evidence for the existence of the stability and plasticity meta-traits of personality proposed by DeYoung (2010). The current and ongoing research of DeYoung (2010) and colleagues provides intriguing evidence for the existence of meta-traits within the Big Five; however, there is not yet consensus in the literature for the existence of meta-traits.

Contrary to those arguing for taking a meta perspective, other researchers hold that the Five Factor Model is not a fully comprehensive structure for explaining personality since it does not sufficiently explain the dark (abnormal) side of personality (Boyle, 2008; Furnham, Hyde, & Trickey, 2013; Kaiser, LeBreton, & Hogan, 2014), whereas others argue for adding a sixth factor, namely *honesty/humility* (as per the HEXACO Model) to the Five Factor model (Ashton &

Lee, 2007), and yet others could argue for including other aspects and facets in personality research.

The need in some research for either fewer (meta traits) or more (e.g., aspects) of personality may provide new insights into understanding work behaviour. However, a key benefit for remaining with the Five Factor taxonomy of personality in this study (given that the retail managers span varied cultures, races and genders) is the vast body of research that speaks to its cross-cultural, -racial and -gender reliability and validity (McCrae & Costa Jr, 2008), both as a descriptive framework and in associated measurement tools (which will be discussed in the methods chapter), whereas the newer taxonomies of personality are still comparatively unproven. This brings us to the properties of the Five Factors of personality traits.

Properties of personality traits

Three key properties of note about the underlying theory of the Five Factor Model hold that personality traits are *biologically* based, relatively *stable over a life span* and *matter differently depending on the situation*. To the first point, McCrae & Costa showed about a decade ago in their research that the traits described in the Five Factor taxonomy are biologically based (McCrae & Costa, 2003). Support for their postulation has been found in a recent fMRI study by DeYoung et al. (2010). Second, given its biological roots it is probably not surprising that other studies postulated that personality trait levels change (or mature) in a predictable manner and do not change much over a life span (i.e., they are relatively stable). Research has indeed shown this theoretical assumption to be accurate, but with varying explanations as to how maturing is focused within and across the five factors (Hampson & Goldberg, 2006; Roberts, Wood, & Smith, 2005; Yang, McCrae, & Costa, 1998). And last, situations influence the way that personality is expressed, shaping how specific traits evolve through experiences and trigger some traits and not others, providing a context for interpretation and on the flip side leading to individuals' sometimes creating situations to suit their personality (Christiansen & Tett, 2013).

In conclusion, there is general agreement among scholars that the Five Factor Model provides a valuable framework for understanding and describing personality, and provides a taxonomy for understanding its parts, its organization and its definition, even though it does not comment on how personality develops within an individual. Consensus on a construct among multiple scholars over decades of research is rare in scientific inquiry. This study will therefore align with

the scientific evidence and majority scholarly consensus, acknowledging the Big Five model as a description that defines personality traits. This study will therefore adopt the definition of personality provided by Larsen and Buss (2010, p. 4) as “the set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptation to, the intrapsychic, physical, and social environments” and focus its inquiry about personality on the five traits indicated in the Five Factor Model of personality within the context of work.

The next section will explore what constitutes feeling bored within the affective domain, with the aim to clarify the definition of the *feeling bored* construct.

2.6. Feeling bored

As noted in the introduction to this research, scholars agree that boredom falls within the affective domain (Craparo et al., 2013; Goldberg et al., 2011; Pekrun et al., 2010). However, there is little agreement as to exactly how to label it. Some researchers refer to boredom as an emotion (Craparo et al., 2013; Desmet, 2002), while others define it as a mood (Arellano et al., 2014; Desmet et al., 2012; Hubalek et al., 2010) and still others consider it a trait (Pekrun et al., 2010). The question then arises, Within which affective domain should boredom be studied?

2.6.1. *Feeling bored as affect*

McLeod (1991) lamented that affect was ill-defined in the scientific community. Although it is understood that affect broadly differs from cognition, there is a lack of clear differentiation between specific affective constructs used in research, such as emotion, mood and feeling. McLeod (1991) attempted to provide more clarity by researching the history and scientific inquiry of these constructs. She defined emotion as “intense affective states, either positive or negative, where the organism is aroused for a fairly short period of time,” mood as “less intense and more subtle affective states” and feelings as things that “describe the bodily sensations associated with an emotion or a mood” (p. 98).

About a decade later, Schimmack, Oishi, Diener and Suh (2000) noted the exponential upsurge in studies within the affective domain, showing that before 1960 only 175 publications included

"affect" in their title, whereas the years between 1980 and 2000 have seen this number increase to 4,170 in PsychINFO alone. However, even though more research was done, an overarching taxonomy within which to study affect (such as the Five Factor taxonomy for the study of personality) was still lacking. These authors proceeded with an empirical study that produced a framework within which affective experiences can be studied. More specifically, they found that *trait affect* is too broad a definition, indicating that affective experiences are best studied as "a combination of a type (e.g., emotions and moods), and aspect (e.g., frequency, intensity, duration), and a quality (e.g., pleasure, displeasure)" (Schimmack et al., 2000, p. 655). This study was a first of its kind and proves useful in that, first, it indicates that studies of affective experiences are best served by including both mood and emotion in their conceptualizations and, second, it points to aspects and qualities that need to be considered when defining an affective experience. Given the linguistic clarity McLeod (1991) provided by indicating that "feeling" comprises both mood and emotion, this study will therefore further investigate *feeling bored* within the framework provided by Schimmack et al. (2000). Pertinent perspectives related to aspects and qualities of emotions and moods will be discussed next, followed by a definition of *feeling bored.*

2.6.2. *Emotions and moods*

Scholars come from different perspectives in their description of the nature of emotions and moods. The perspectives that are pertinent to this research are outlined below, followed by descriptions differentiating the properties of emotions and moods.

Pertinent perspectives

Key conversations between scholars of emotion and mood centre on whether emotions are either two-dimensional, discrete or both (Hamann, 2012).

Two-dimensional frameworks are based on the premise that emotions have psychological elements that can be described with two dimensions (Seo, Barrett, & Jin, 2008). Various dimensional frameworks of affect have been suggested (Russell, 1980; Tellegen, 1985). The most commonly referenced framework is the two-dimensional circumplex model developed by Russell (1980), which represents affect along the dimensions of valence/arousal and pleasant/unpleasant activation. *Valence* refers to a person's emotion or mood in terms of

degree of pleasure or displeasure; *arousal* refers to the level of emotion or mood (high or low) that is felt. *Pleasant activation/unpleasant activation* (originally referred to as positive affect/negative affect, or PANA) refers to the degree to which moods or emotions make one alert and engaged (Watson, Clark, & Tellegen, 1988). This is illustrated in Figure 2.7.

The usefulness and validity of the circumplex model have been confirmed by recent large-scale studies (Kapoor, Czerwinski, Maclean, & Zolotovitski, 2013). Seo, Barrett and Jin (2008) did meta-research and noted that the circumplex model created by Russell (1980) and refined by others (Yik, Russell, & Steiger, 2011) is the most prominent framework used in current research on emotions and moods in organizations, especially since it provides a way for conceptualizing job-related affect (Madrid & Patterson, 2014).

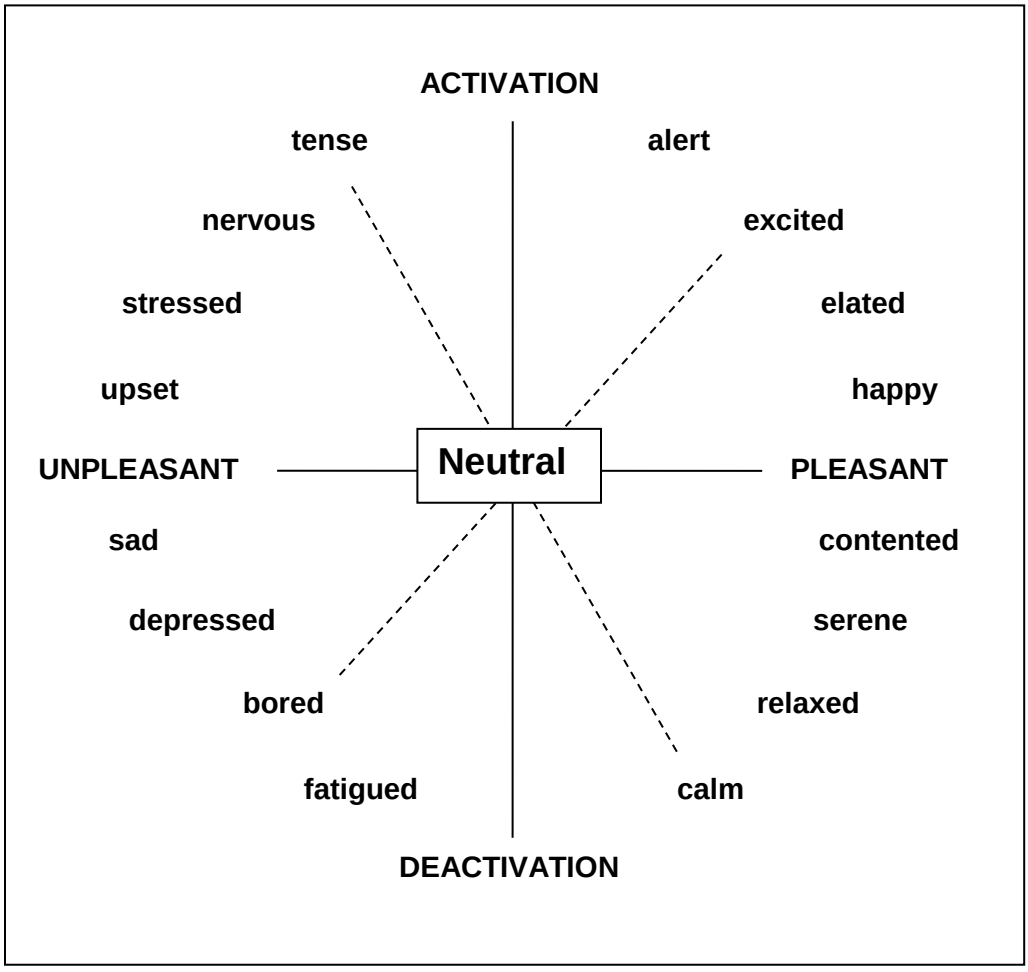
Discrete categories perspective

Emotions such as anger, fear, sadness and boredom have been called *discrete* emotions, meaning that each can be distinguished from the other and produces a certain change in cognition, judgement, behaviour, experience and physiology (Ekman & Cordaro, 2011). There is agreement that a two-dimensional model is useful but not sufficient to describe emotions, and that naming discrete emotions adds a helpful descriptive (Lench, Flores, & Bench, 2011; Lindquist, Siegel, Quigley, & Barrett, 2013).

However, the specificity of output produced by each discrete emotion is not yet clear. For example, different people may mean different things when they say they “feel angry or sad” (Lindquist et al., 2013). Some researchers following the discrete perspective argue for the use of unipolar valence scales to describe emotions (Kron, Goldstein, Lee, Gardhouse, & Anderson, 2013). In addition, various authors have found that the meaning of “the same” discrete emotion varies between different contexts and situations (Wilson-Mendenhall, Barrett, Simmons, & Barsalou, 2011). For example, a discrete emotion such as anger may be considered positive in one context and negative in another (van Kleef, Homan, Beersma, & van Knippenberg, 2010), which calls for a more integrative understanding of affect in specific situations.

Research has also shown that people can experience mixed emotional reactions to events involving multiple discrete emotions, especially in ambiguous situations such as watching a bittersweet movie (Larsen & McGraw, 2014). A recent neuroimaging study found neural

correlates associated with basic emotions but did not find one-to-one mappings between discrete emotions and brain regions, highlighting the fact that the nature of emotion is more complex (Hamann, 2012).



Adapted from Colibazzi et al., 2010, p. 378

Figure 2.7: The circumplex framework for affect: a conceptual summary of the discrete emotions arousal (activation/deactivation) and valence (pleasant/unpleasant)

Figure 2.7 displays the dimensional and discrete perspectives discussed above. Emotions within each quadrant are related (e.g., bored, fatigued, depressed and sad fall within the "deactivation/unpleasant" quadrant). Although boredom is related to the emotions and/or moods

within the unpleasant/deactivation quadrant, it has been shown to be an empirically distinct construct (Goldberg et al., 2011).

Continuum perspective

Some scholars using the circumplex model see emotions as both bipolar and independent, with valence independent of activation and positive activation the bipolar opposite of negative activation (e.g., bored–excited, happy–sad), and argue for the measurement of both in research (Barrett & Russell, 1998). Recent analysis of global mood structures in a study done on social media showed evidence that moods lie on a continuum with different levels of intensity, filling in the nuanced experiences indicated at the bipolar extremes of the mood spectrum displayed on the circumplex (Nguyen, Phung, Adams, & Venkatesh, 2014). As represented by the dotted lines in Figure 2.3, the circumplex displays an integrated view of emotions as both discrete and lying on a continuum (spectrum) of opposite ends.

The *dimensional* (describing the whole) and *discrete* (describing the parts) approaches bring different benefits to understanding emotions and moods. Researchers have argued that using these two frameworks in combination provides a more integrative and functional framework for understanding the two constructs (Mendl, Burman, & Paul, 2010; Seo et al., 2008). Relevant to the context of this study, this research implies that an examination of feeling bored will benefit from using both discrete and two-dimensional perspectives. Building on the literature, the current study will examine feeling bored along its deactivated-unpleasant "bored" and activated-pleasant "excited" dimensions, and will use an instrument (described in Chapter 4) that includes the discrete descriptions of bored on both dimensions while also allowing for varying intensity, thus incorporating the continuum perspective.

In sum, emotions and moods can be described within three pertinent perspectives, namely the two-dimensional perspective, discrete categorical perspective and continuum perspective. The two-dimensional perspective addresses the pleasant/unpleasant and activation/deactivation properties of emotions and moods, whereas the discrete perspective provides definition to emotions and moods bringing linguistic clarity. The continuum perspective acknowledges the intensity with which emotions and moods can be experienced. Combined, these perspectives provide a comprehensive description of the quality of emotions and moods as per the framework for studying effective reactions outlined by Schimmack et al. (2000). However,

further clarification as to the difference in nature and aspect (frequency, duration and intensity) between emotions and moods is needed for construct clarification. This will be discussed next.

Properties of emotions

Emotions represent a complex system linked to cognition (Izard, 2011), physiology (Vytal & Hamann, 2010) and action and behaviour (Baumeister, Vohs, DeWall, & Zhang, 2007; Izard, 2009). Specific properties of emotions that have been identified in the literature are reviewed below.

Reactions to events

Emotions have been defined as dynamic reactions to events (Desmet, 2002; Ekman & Cordaro, 2011; Tran, 2004); for example, one may feel happy about receiving a large bonus, or bored when sitting in meandering unproductive meetings. By definition, then, emotions are triggered by events involving an object or other people.

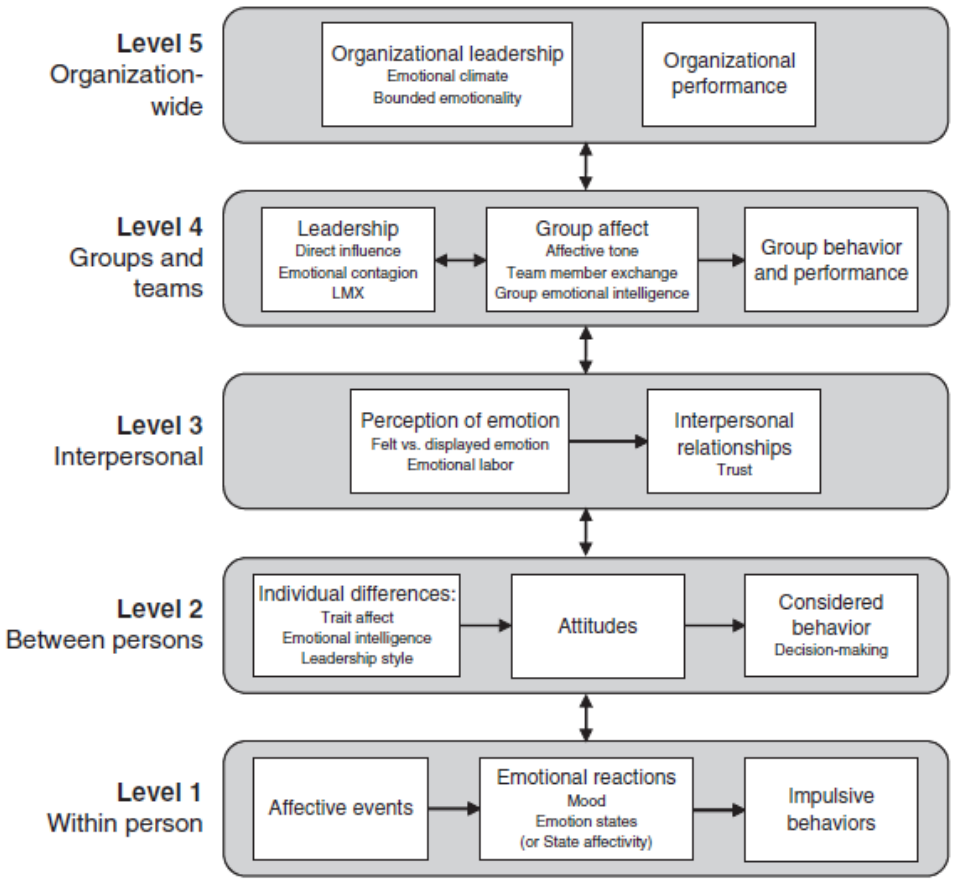
Unique criteria

Ekman and Cordaro (2011) identified thirteen criteria that uniquely qualify emotions to be emotions. These criteria include distinctive universal signals; distinctive physiology; automatic appraisal; distinctive universals in antecedent events; presence in other primates; capable of quick onset; brief duration; unbidden occurrence; distinctive thoughts, memories and images; distinctive subjective experience; refractory period filters information available to what supports emotion; target of emotion unconstrained; and ability to be enacted in either a constructive or destructive fashion (p. 365).

Influenced by context

Ashkanasy (2003) developed a multi-level framework to describe how individuals' moods and emotions are influenced by organizational culture, groups and interpersonal interactions between people within the organizational context. The framework emphasizes the importance of understanding moods and emotions in the context in which events take place. The author also noted that the accumulation of events that happen on a recurring basis, rather than isolated

intense incidents, has the most impact on behaviour and performance. This perspective is depicted in Figure 2.8.



Source: Ashkanasy & Humphrey, 2011, p. 215

Figure 2.8: Multilevel model of emotions contextualized in organizations

Eisenkraft and Elfenbein (2010) studied 48 work groups and found that a key trigger for an individual's emotions is the emotions of those with whom they interact. This interaction effect is called emotional contagion and can be compared with "catching the flu." Evidence for emotional contagion has been found between leaders and followers (Johnson, 2009) and among peers (Parkinson & Simons, 2009). From this research, it appears critical to control or account for

contextual and interpersonal influences when researching differences between individuals' emotional reactions to everyday work experiences.

In summary, emotions can be defined as 1) dynamic, brief (lasting seconds to hours) and distinctive reactions to events, which are 2) explainable in two-dimensional valence/arousal and discrete terms, and 3) influenced by context.

Nature of moods

Moods have been defined as the "affective backdrop (independent from events) to experiences" (Desmet et al., 2012). They are described by organizational psychologists as general feelings that are experienced over a period of time (Kelly & Barsade, 2001).

Although moods and emotions are similar in that each can be described in both two-dimensional valence/arousal and discrete terms, there are also key differentiators. A content analysis of 65 studies by Beedie, Terry and Lane (2005) summarized several differences in the nature of moods and emotions: moods are more nebulous, emotions more readily identifiable (clarity); moods are lingering, emotions are brief and reactive (duration and stability); moods are experienced less intensely as a backdrop or undercurrent, emotions are experienced more intensely (intensity); moods have no visible cause, emotions are reactions to events or someone or something that can be identified with relative ease (cause); and moods are less visible to others than emotions (display).

More recently, Beedie and colleagues (Beedie, Terry, Lane, & Devonport, 2011) empirically tested whether moods and emotions are indeed different constructs, in line with the conceptual criteria outlined above, and found substantiating evidence for that theory. Their research makes a plea for scholars to include both emotions and moods in studies of affect, and to treat moods and emotions as different constructs.

In summary, moods can be defined as 1) affective backdrops (independent from events) that are 2) experienced over a period of time (hours to months) and 3) explainable in two-dimensional valence/arousal and discrete terms. Although moods and emotions differ in nature,

it is important to consider both, given their role in individuals' affective experience, and they will therefore be treated as different domains within the broader "feeling" definition in this study.

2.6.3. *Defining "feeling bored"*

As previously noted, there is consensus in the literature that boredom falls within the affective domain, although there is not general agreement on how to label it. Boredom has been categorized as an "emotion" (Craparo et al., 2013; van Hooff & van Hooft, 2014) and as a "mood" **(**Goldberg et al., 2011**)** or "state"; it has been referred to as "boredom proneness" (Bruursema, 2007) and as a "trait," and it has been referred to as "habitual boredom" (Mercer-Lynn et al., 2014; Pekrun et al., 2010).

Time span has been shown to be an important criterion for differentiating among emotions, moods and personality traits (Beedie et al., 2005; Beedie et al., 2011; Oatley et al., 2006). To place the construct of boredom within the affective domain, it therefore seems important to investigate whether any instance or description of boredom is of a fleeting nature (emotion), lingering hours to months (mood) or lasting years to a lifetime (personality).

Martin, Sadlo and Stew (2012) found that the propensity to feel boredom may change throughout a lifetime, raising questions about taxonomies that label boredom as a trait. Although boredom proneness has been associated with certain personality traits, such as neuroticism and extraversion (Vodanovich, 2003), as a construct on its own, boredom does not meet the endurance over time aspect (often measured in years) associated with traits such as those depicted by the Five Factor Model of traits describing personality.

There is evidence for boredom meeting the criteria for moods (lingering) and emotions (fleeting) (Craparo et al., 2013; Goldberg et al., 2011), making it a plausible to think that studies of boredom can benefit from investigating boredom as both an emotion and a mood. Boredom in this study will therefore be defined as a *feeling*, aligned with the definition provided for feeling within the affective domain postulated by McLeod (1991), considering that *feeling bored* describes boredom as both an emotion and a mood.

Many studies on emotion and mood have noted that emotions and moods are best understood within both discrete and two-dimensional perspectives (Hamann, 2012; Lindquist et al., 2013) and that they present on a continuum (Nguyen et al., 2014). However, studies on boredom within the circumplex framework for affect have mainly looked at boredom from the unpleasant/deactivated side of the affective spectrum and neglected the pleasant/activated side, which has precluded a more complete understanding of feeling bored within the definitions of emotion and moods. The lack of research on the full spectrum of boredom (especially in naturalistic work settings) can probably be attributed to the limitations of measurement tools available for studying boredom. Outside laboratory settings, the Boredom Proneness Scale (BPS) has been the main instrument used by researchers to investigate boredom in naturalistic settings.

In summary, *feeling bored* is an emotional reaction (dynamic, brief and with varying intensity) to events, and/or a mood (an affective backdrop independent from events lasting from hours to months) that is explainable in two-dimensional valence/arousal and discrete terms and is influenced by context. For the purposes of this study, feeling bored will be defined as an emotional reaction or mood noted in discrete terms on the two-dimensional valence/arousal continuum as bored-fascinated (emotion) or bored-excited (mood). This study will therefore research feeling bored in the retail middle-manager work environment as:

- **Emotion Bored:** An emotion characterized by lack of pleasure, disengagement and lack of aim; the opposite of emotion fascinated.
- **Emotion Fascinated:** An emotion characterized by pleasure, active engagement and passionate interest; the opposite of emotion bored. *Fascinated* has been established as the opposite emotion of bored (Desmet, 2002).
- **Mood Bored:** A mood characterized by lack of pleasure, deactivation, tiresomeness; the opposite of mood excited.
- **Mood Excited:** A mood characterized by pleasure, exhilaration, being thrilled; an active energy state, the opposite of mood bored. *Excited* has been established as the opposite mood of bored (Desmet et al., 2012).

Next, feeling bored, as defined above, will be discussed within the EDMPM, indicating the various interactions between feeling bored, personality and decision-making competence.

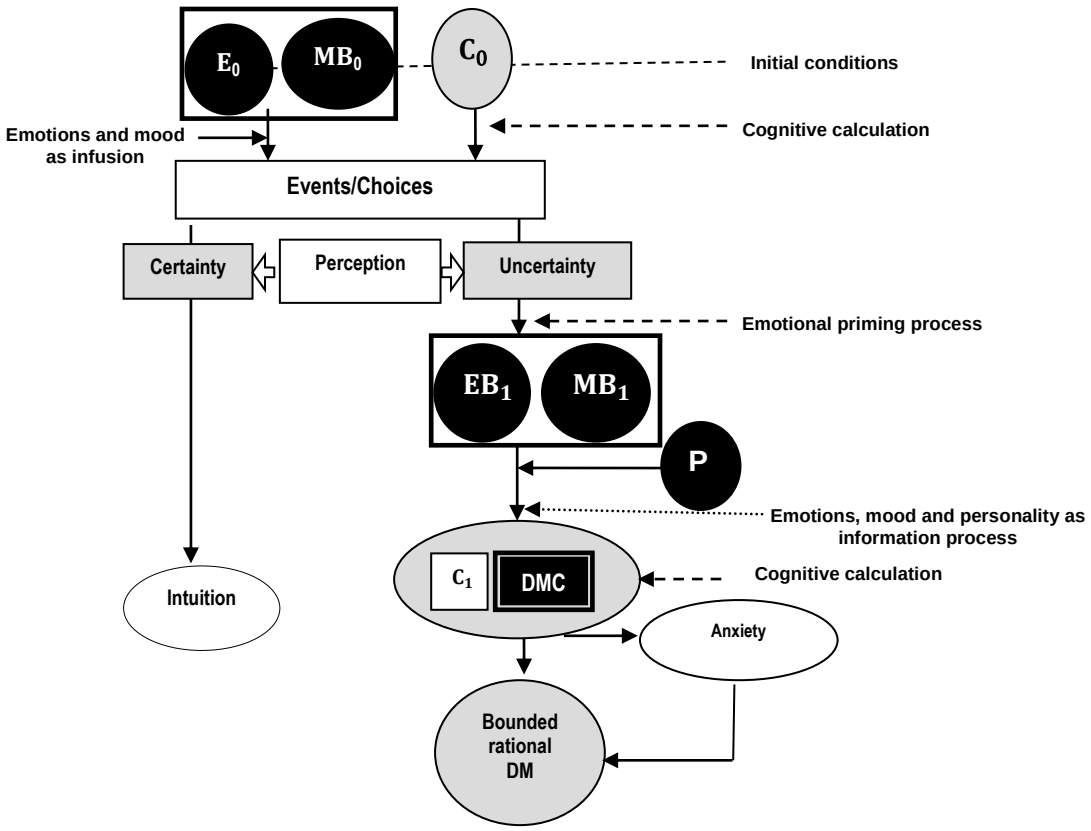
2.7. Interactions between feeling bored, personality and decision-making competence

After the proposed expansion to the HPDMM (namely the EDMPM) was introduced in Figure 2.4, four points of differentiation between the two models were discussed, proposing that i) conditions of uncertainty activate emotions, moods and personality, not only emotions; ii) affective reactions, defined as *feeling*, constitute moods and emotions; iii) decision-making competence can replace the *residual effect* noted in the HPDMM, providing more specificity to the model by showing that cognitive ability and decision-making competence work together when cognitive calculations are made; and iv) personality needs to be considered as a moderating factor. Together, these four points of departure differentiating the HPDMM from the EDMPM prompt the question, How do affective reactions (moods and emotions), personality and decision-making competence interact?

Since the focus of this study is on feeling bored, a visual depiction of feeling bored within the EDMPM will be provided first. Thereafter, following the flow outlined in the EDMPM, uncertainty as a trigger for feeling bored will be discussed. Once these points are covered, the literature associating feeling bored with decision-making competence will be outlined, indicating the value of replacing *residual effect* with DMC. Last, the moderating role of personality between affective reactions (such as feeling bored) and DMC under conditions of uncertainty will be discussed.

2.7.1. *Positioning feeling bored in the Expanded Decision-Making Process Model*

Figure 2.9 shows the proposed changes to the Hybrid Decision-Making Process Model. Changed objects have **bold borders**.



C_0: The initial stage of cognition
C_1: The new cognition on decision-making problem
MB_0: Stage of Mood bored/Mood excited over time before event
P: Personality traits

E_0: The initial stage of emotions
EB_1: Expected/immediate emotion bored/emotion fascinated
EM_1: The stage of Mood bored/Mood Excited after event
DMC: Decision-making competence

Figure 2.9: Process-Inclusive Decision-Making Model: affect, personality and cognition under uncertainty focused specifically on feeling bored

A couple of points for clarification: As seen in Figure 2.9 the emotional elements of feeling bored, namely, *emotion bored* and *emotion fascinated*, are only considered after an uncertain event has taken place, given the reactive nature of emotions. On the contrary, since moods are lingering in nature, the prevailing mood will be of most interest in this study, that is, whether mood excited or mood bored prevailed before the event of uncertainty took place as per $\mathbf{MB_0}$ and thereafter as per $\mathbf{MB_1}$. In this study *feeling bored* will therefore be included as per its complete definition given in Section 2.6.3. Following the flow of the EDMPM shown in Figure 2.4 above, uncertainty as a trigger for feeling bored will be discussed next.

2.7.2. *Uncertainty in work events as trigger for feeling bored*

In this section the link between uncertainty and feeling bored will be explored within the broad defines of the AET conceptualization of uncertainty, indicating its relevance to the middle-manager retail context. Thereafter the pertinence of uncertainty to the emotion and mood aspects of feeling bored will be outlined.

Weiss and Cropanzano (1996) indicated in their original conceptualization of the AET that uncertainty is experienced when no plan for achieving a goal is sensed or readily anticipated, pointing to the ambiguity inherent in work events that generate conditions of uncertainty. As various authors have noted, individuals are more likely to feel bored under external conditions of qualitative underload (e.g., repetitive tasks), when a very light workload follows a busy period, or when they are overwhelmed by tasks (Caplan et al., 1975; Fisher, 1987; Pekrun, 2006). In the retail context all three of these conditions noted are likely to be experienced periodically since attention to the details of routine tasks over an extended period forms part of the job (King & Holtfreter, 2011), busy and quiet periods are experienced both seasonally (e.g., busy holiday seasons followed by quiet periods) and daily (customers are more apt to shop when they are on lunch breaks or after work), and dealing with ambiguity is also experienced (e.g., expected to meet sales targets without being able to obtain more desirable products).

From a specific work event perspective, both being underwhelmed (with repetitive tasks) or overwhelmed (when faced with ambiguity) has shown to trigger the emotional aspects of feeling bored (Fisher, 1987); however, it is unclear if these situations will differentiate equally between managers' proneness to react with emotion bored or emotion fascinated. Although the specific events or situations that trigger the emotional aspects of feeling bored in middle managers in retail have not been identified yet, the importance of boredom to middle management tenure and job satisfaction in the retail environment has been established (King & Holtfreter, 2011). Further identification of situations that differentiate between managers' reacting with emotion fascination or emotion bored will be empirically evaluated and described in the research methodology chapter.

As indicated in the discussion of Figure 2.9 in the previous section, the prevailing mood aspects of feeling bored will be considered although they are not seen as being triggered by uncertain work events, especially since previous research has established a link between moods and

decision-making, notably where choices about risk-taking are involved (Raghunathan & Pham, 1999).

Thus, uncertainty in work events is experienced when there is no clear plan for goal achievement and ambiguity is experienced. Work events where one is underwhelmed, overwhelmed or exposed to a shift between busy and quiet periods all fuel boredom, arguably interfering with decision-making and ultimately goal achievement. Which of these types of event (e.g., being underwhelmed or overwhelmed) and which specific events (e.g., dealing with underwhelming boring meetings vs. having to meet sales targets without the desired stock, which can be overwhelming) will most aptly capture ambiguity in the retail manager context, therefore triggering the emotional aspects of feeling bored, will be established empirically. The impact of prevailing moods on decision-making has been established and will be considered as part of the link between feeling bored and decision-making competence. This link will be discussed next.

2.7.3. *Feeling bored and decision-making competence*

This section will first explain the emotional and mood mechanisms that shape decision-making, and thereafter highlight how feeling bored matters differently depending on context. In conclusion, the relevance of these mechanism and contextual insights to this study will be noted.

A meta-analysis of 240 studies on emotions and decision-making showed that emotions have a moderate to large effect on decision-making and that different emotions impact decision-making differently (Angie et al., 2011). Moods have also been shown to influence decision-making (Dwyer & Ganster, 1991) and work performance (Bindl, Parker, Totterdell, & Hagger-Johnson, 2012; Rothbard & Wilk, 2011). This gives rise to the question, What is it about emotions and moods that shape decision-making? This question will be explored next.

Emotion and mood mechanisms shape decision-making

Some research (Loewenstein & Lerner, 2003; Slovic, Finucane, Peters, & MacGregor, 2004) views emotion and decision-making as two separate interactive systems, where reactive and anticipative emotions influence (rational, cognitive) decisions. Pfister and Bohm (2008)

challenge this view, noting that emotions do not merely influence an otherwise non-emotional decision process (as the “influence-on” metaphor states), but are part of virtually every decision-making process. The authors argue that because emotion itself is not a homogeneous category, the emotional functions within decision-making are multifaceted. They point out that ambiguity creates emotional conflict and triggers multiple mechanisms.

Following this functional consideration of emotions, Pfister and Bohm (2008) propose a four-fold classification of the emotional mechanisms that shape decision-making:

1] The *information function* provides evaluative information, which feeds into preference construction. Emotional states or moods (such as joy or distress) inform the degree of (un)pleasantness of actions and consequences. They allow for mapping diverse experiences on a one-dimensional scale of pleasure and pain. Following this line of inquiry, other research noted that moods affect the way in which information is perceived (Forgas, 2013), processing strategies (Forgas, 2013) and motivation to pursue goals (Fishbach, Eyal, & Finkelstein, 2010). More specific to decision-making competence, an investigation of the impact of moods on a person’s ability to stay objective (decision-competence defined as *resisting framing*) found that a neutral mood does not impact resisting framing, but that a valenced mood (e.g., feeling bored) does (Hirt, McDonald, Levine, Melton, & Martin, 1999). These authors further suggest that mood functions differently depending on whether or not respondents pay attention to their moods in decision contexts.

2] The *speed function* enables rapid choice and action under time pressure. Affect programmes for fear and disgust, which trigger immediate avoidance responses. These mechanisms are highly stimulus-specific and presumably have evolved under evolutionary selection pressure.

3] The *relevance function* focuses attention on particular aspects that are of potential relevance for the decision-maker. A discrete emotion such as regret or envy constitutes a particular appraisal, which implies particular evaluations as well as particular action tendencies.

4] The *commitment function* enables social coordination by committing people to stick to decisions, even against their short-term self-interest. Guilt, for example, prevents deflection in social dilemmas, and thus guides decision-making in strategic choice situations. The commitment function sustains long-term decisions.

Contextual requirements within which events take place primarily determine which of the four functions dominates – lack of information, time pressure, relevance or the need for social coordination. The issue of rationality in decision-making therefore points to the appropriateness of emotions, not to the consistency of preferences. Whenever several emotional functions generate conflicting preferences, a state of uncertainty and subsequent ambivalence occurs. Ambivalence can make decisions difficult and trigger emotion (Greenspan, 1980; Peters, 2006; Peters, Västfjäll, Gärling, & Slovic, 2006). This point is illustrated by looking at how feeling bored matters differently to different contexts next.

Feeling bored matters differently to decision-making competence depending on the context

Studies have found a strong association between boredom conditions (e.g., of doing nothing or waiting and individuals' active pursuit of risk-taking actions) (Bengtsson, 2012). Aligned with this line of inquiry, when boredom was researched in terms of the decision-making competence in organizations (risk propensity, confidence levels, following rules and resistance to framing) the focus was mainly on the risk-taking component within the broader decision-making competence framework. In some of these studies, feeling bored (defined as an emotion that lacks pleasure as indicated in the low activation and unpleasant dimension of the circumplex) is described as a positive attribute, fuelling risk-taking in leaders that spurs creativity, curiosity and change (Carroll, Parker, & Inkson, 2010), whereas in other studies feeling bored is considered negative – for example, fuelling risk-taking in truck drivers resulted in higher accident rates (Drory, 1982). These studies have been done in two very different role contexts within the world of work, indicating that depending on the role context, feeling bored can be associated with positive or negative consequences.

Feeling excited (the polar opposite of bored on the bored–excited continuum as noted in the activated/pleasant dimension of the circumplex) has been associated with the pleasure and thrill of risk-taking, integral to the role of a manager, where taking risks is a necessity of the job

(March & Shapira, 1987). Part of the excitement of risk-taking for managers is noted as the anticipation that they will succeed in spite of the associated risks.

Mosier and Fisher (2010) noted that emotions and moods as they occur in the naturalistic decision-making world may be rather different from the emotions and moods induced in laboratory research. People's decisions, especially those of experts (such as managers), frequently seem to be guided by affective evaluations of information and elements within the situation itself that are critical to the decision. This is likely a result of the ambiguity inherent in real-life contexts. Studying affect in naturalistic settings may therefore provide essential clues as well as a structure for understanding the decision-making process.

Thus, although the studies described above indicate that there is an association between elements of feeling bored and some decision-making competence, feeling bored (inclusive of mood and emotion) has not been comprehensively investigated in terms of its impact on cognitive-related decision-making competencies (appropriate level of risk-taking, resistance to framing, level of confidence and using decision rules) in a middle-management retail context. With regard to the proposed EDMPM flow, it appears that most current research is jumping from emotion to behaviour without taking the intermediary associated decision processing into consideration. Given the pertinence of decision-making to managerial roles, more comprehensively and precisely clarifying the links between feeling bored and decision-making competence at a "root parts level" can provide pivotal understanding on how feeling bored fuels everyday decision-making and subsequent behavioural and organizational outcomes.

2.7.4. *The role of personality*

In the proposed EDMPM depicted in Figure 2.4, information processing is influenced by personality traits, moods and emotions. Revelle and Scherer (2009) suggested that reasons why some managers become angry while others remain calm when faced with the same situation will be better understood if personality (longer-term and predictable), moods and emotions (short-term and fluctuating) are researched jointly, rather than separately. Furthering this notion, Vuoskoski and Eerola (2011) demonstrated that personality traits predispose mood states, indicating that personality traits moderate the impact of moods on discrete emotions. For example, the extraversion (personality trait)–depression (mood) interaction explained a large

portion of inter-individual differences in experiencing sadness and happiness (discrete emotions). The results of their study have implications for research on emotion and moods in general, as they demonstrate that personality needs to be considered as a moderator when studying these elements.

In addition to the macro external context (e.g., industry, demographics), working in a specific job also contextualizes an individual's perspective and decision-making. For example, a study of 178 U.S. government executives who visited the Harvard Kennedy School of Government found that the personality facet "need for cognition" (as measured by an individual's level of enjoyment of cognitive activities) moderates emotional bias in decision-making (Carnevale et al., 2010). This group of executives performed better in decision-making competence than a control group representative of the general public. It would therefore be expected that different correlations between personality and decision-making competence would be observed in studies conducted within more specific job contexts.

The relationship between personality and mood has been studied extensively, but there are conflicting outcomes. A meta-analysis found that correlation coefficients between personality and mood range from 0.1 to 0.62. The variability in the relationship is attributed to situational influences (e.g., neutral versus performance situations). Variability was particularly evident in studies done in naturalistic environments (Zajenkowski, Goryńska, & Winiewski, 2012).

Research that looks at emotions from a personality perspective has gained momentum since the 1980s, finding that the core functions of emotions suggest to a person the relevance of events (monitoring mechanism) and propose action (communicating mechanism) (Frijda, 1994; Reisenzein & Weber, 2009). Ng and Diener (2009) found differences in personality traits between people who experience more positive emotions and others who do not. For example, people who are high in the neuroticism personality trait experience more negative emotions than those who are low in the neuroticism trait, and individuals high in extraversion feel more positive than individuals low in extraversion. Allena, Greenlees and Jones (2014) expanded on these findings, claiming that the personality traits of neuroticism, extraversion, openness and agreeableness also impact the intensity and duration of negative emotions.

In a study of 350 individuals from the general public, Dewberry, Juanchich and Narendran (2013) found that the Five Factor personality traits collectively explain a significant degree of variance in decision-making competence; neuroticism and extraversion in particular showed significant negative correlations with decision-making competence. These findings align with previous research showing extraversion to be associated with impulsiveness (Campbell & Heller, 1987) and high risk-taking behaviour (Martin & Potts, 2009), which is counterproductive for decision-making competence. Other studies have also shown that individuals high in neuroticism are inclined to use the "recognition heuristic," ignoring pertinent situational data (Hilbig, 2008) and to be risk-averse (Anderson, Burks, DeYoung, & Rustichinid, 2011). Dewberry et al. (2013) also confirms the general personality–decision-making competence link. However, none of these studies was conducted in the retail middle management context.

Thus, research has shown that personality traits impact decision-making competence, and that personality traits matter differently depending on the external situational context and the emotions and moods that individuals experience.

2.8. Conclusions

The literature review first covered the external decision-making context, noting the causes, consequences and alleviation of boredom at work, and the relevance of boredom to the retail environment. Second, it covered the internal decision-making context by providing a model within which the dynamic internal process of making decisions can be understood. Thereafter it defined the pertinent parts (namely, feeling bored, personality, decision-making competence) embedded in the dynamic decision-making process.

To the first point, it is clear from this literature review that feeling bored is relevant to the external retail industry context and specifically to retail managers' decision-making competence. As shown from the research done by King and Holtfreter (2011), retail managers who "seem impervious to boredom, can maintain high accuracy in long spells of detailed work" enjoy longer tenure and are more satisfied with their jobs (p. 1). Furthermore, Sims (2003) showed that middle managers account for 22.3% of variation in revenue after controlling for other factors. Thus, there appears to be compelling evidence that understanding how boredom impacts retail

middle managers' decision-making competence can benefit both retail organizations and managers working in retail alike.

The literature review further showed that situations (task and context) and individuals (emotion, cognition and skills) mutually influence each other and that both can cause boredom at work. Situationally, tasks experienced as underwhelming or overwhelming, or work contexts where very busy and very quiet periods fluctuate, induce boredom. Individually, boredom has been shown to reduce cognitive resources, lead to shallow information processing, lessen motivation, lead to counter-productive behaviour yet also indicate the need for change and fuel creativity. Whether boredom has negative vs. positive outcomes depends on the company and role context. This reiterates the value of contextualizing research. For that purpose the external context within which this research takes place will be indicated in the research methodology chapter utilizing the three tiers (Rhym, 2012) and two-level approach (Johns, 2006) frameworks.

To the second point, the internal context was discussed utilizing a dynamic decision-making processing model and the parts (namely, personality, decision-making competence, feeling bored) critical to the process were defined. This line of thought aligns with the notion put forward by Appelt, Milch, Handgraaf and Weber (2011b) arguing for a more systematic approach to research in the decision-making field, especially noting the need for a better understanding of how features of decision-making interact with other individual differences.

2.8.1. *Decision-Making Process Model: indicating the flow between parts*

The search for a model within which to understand the parts (feeling bored, personality, decision-making competence) started with an exploration of the seminal work in this area of inquiry, the Affective Events Theory (AET), conceptualized by Weiss and Cropanzano (1996). This was followed by a critical review of a more recent model developed for understanding decision-making processes under conditions of uncertainty, namely the Hybrid Process Decision-Making Model (Li et al., 2013). Noting the strengths and limitations of this model, an Expanded Decision-Making Process Model (EDMPM) is proposed. The EDMPM describes the dynamic interaction between various inner context parts – feelings (i.e., moods and emotions), personality, cognition and decision-making competence – which influence how information about work events are processed, bounding rational choices. The links between the various

parts were further explored. It is noted that the emotional aspects of feeling bored are triggered by uncertainty while the prevailing mood also influences the decision-making process. More specifically, as primarily noted by Pfister and Böhm (2008) in more general terms, feelings (emotions and moods) shape decision-making, supporting the evaluation of information, affecting the speed of acting, denoting relevance and enabling commitment. Personality (with its relative stability over time) appears to act as a moderator between feelings and cognitive/DMC interactions. These conceptualizations about the relationships between the critical parts that form part of the scope of this study (feelings, personality, decision-making competence) will be empirically verified and discussed in Chapters 3 and 4.

2.8.2. *Defining the parts (feelings, personality, decision-making competence) pertinent to this study*

The parts pertinent to this study are defined within taxonomies appropriate for the work context, notably:

- *Personality* is defined within the Five Factor Model *descriptive tradition*, which describes the representative parts of personality as degrees of extraversion, agreeableness, conscientiousness, neuroticism and openness.

- *Feeling bored* was particularly in need of definition clarification, given the varied labels given to the construct within the broad affective domain across scholarly studies. After examining the literature and studying the features that identify emotions, moods and traits, *feeling bored* has been identified as both an emotion and mood. *Emotions* are described as *dynamic and brief reactions to events* whereas *moods* are described as *lingering affective backdrop with no clear cause.* The features of moods and emotions are elaborated on within the two-dimensional, discrete categorical and continuum perspectives, with the final definition of *feeling bored* given as *an emotional reaction or mood noted in discrete terms on the two-dimensional valence/activation continuum as bored–fascinated (emotion) or bored–excited (mood).*

- *Decision-Making Competence (DMC)* provides a normative analysis, of which domains represent sound decision-making over time. Six domains were identified by (Bruine de Bruin et al., 2007), of which the four (risk perception, appropriate confidence, resistance to framing and decision rules) most aligned to, yet independent of, cognitive ability (Del Missier et al., 2012) were utilized in this study.

Nutt (2011) urged researchers of decision-making to design studies that can bridge the gap between normative (best options), descriptive (detailed account) and prescriptive (provide interventions) approaches, comparable to the Action Theory (if/then approach) found in engineering and medicine, to propel research on decision-making to a higher level. Most current research in decision-making is grounded in one of these three approaches. In this study, two of the constructs under investigation (*personality* and *feeling bored*) fall within descriptive traditions, and the third construct *decision-making competence* falls within the normative approach. Furthermore, the EDMPM provides a framework that describes the dynamics and interconnectivity between the parts under study, laying a foundation for bridging the descriptive–normative gap noted by Nutt.

In sum, the literature review conceptualized the external and internal contexts within which this study takes place and provided a decision-making process model (EDMPM) with clearly defined parts. The next chapter will outline the research methodology to be utilized for empirical verification of these conceptualizations.

3. RESEARCH METHODOLOGY

In a comprehensive review of what we know from research about individual differences in cognition, personality and motivation, and decision-making, Mohammed and Schwall (2009) note that research on the impact of individual differences on decision-making is still comparatively scarce.

Given the relative lack of previous studies that could specifically inform methods for the current research, it is worth noting the guidelines of Appelt et al. (2011a), who proposed the following systematic approach for researching individual differences:

- Use of measures with clear theoretical ties and domain relevance (e.g., the adult decision-making competence scales from Bruine de Bruin et al. (2007)).
- Consideration of the context (e.g., retail) within which decisions take place.
- Consideration of the task features (e.g., elements of the job, complexity of the middle-manager role).
- Examination of how one individual difference interacts with other individual differences.

These guidelines will be applied in the current study of individual differences in middle managers' emotions, moods, personality traits and decision-making competence within the retail context.

3.1. Approach

The research framework, model and hypotheses will be discussed next.

3.1.1. *Quantitative research framework*

According to Onwuegbuzie and Leech (2006), the research method should be chosen primarily based on its fit with the intended purpose of the study. From the studies on emotions, moods,

decision-making and personality reviewed above, there is clearly a rich history of both qualitative and quantitative research in this field.

The purpose of this study is to investigate the role of personality in the relationship between feeling bored and decision-making competence, and to establish the theoretical importance of taking account of both mood and personality alongside emotions in the process of understanding the affective and internal context for managerial decision-making. Research questions probing the relationships between feeling bored, decision-making competence and personality within the work setting can be answered within the quantitative research paradigm, given that these variables can be empirically measured with valid and reliable questionnaires using an adequate sample size. Statistical findings obtained from these measures could then be generalized to the context within which they were assessed.

Taking a positivistic approach to this study answers the "what" question about the role of personality in the relationship between feeling bored and the decision-making competence of retail managers. This research does not answer questions about "why" these relations exist. It seems important to answer the "what" questions about the role of personality before addressing the deeper "why" and "how" questions, especially if the knowledge to be gained from this study has the potential to be used for understanding personality in broader terms in employee selection and employee development.

3.1.2. *Research model and hypotheses*

Following the theoretical premise of the Expanded Decision-Making Process Model shown in Figure 2.4, Figure 3.1 presents the research model applied in this study. The research model proposes that decision-making competence is influenced by personality, moods and emotions, as well as by the relationship between them. The study focuses on feeling bored (emotion and mood bored), given its specific importance in the retail middle-management context. This model is used so that the conditional or joint effects of emotions, moods and personality on decision-making competence can be examined statistically (Edwards, 2009; MacKinnon, 2008). The hypotheses will be first tested with correlations to determine if bivariate relationships exist between the predictors and the outcome variables. These will be followed up with multiple regression models that will introduce the expected moderation (interactions). Significant

moderation will be interpreted by looking at the size of the effect of the main predictor at three different values (+1 SD from the mean, the mean, and −1 SD from the mean) of the moderator. All variables were mean-centered (i.e., converted to deviation scores) prior to testing for moderation in order to reduce multicollinearity and facilitate interpretation. Two-tailed tests with α set at .05 will be used to determine significance. All statistical analysis was done using SPSS version 20 (IBM Corp., 2011).

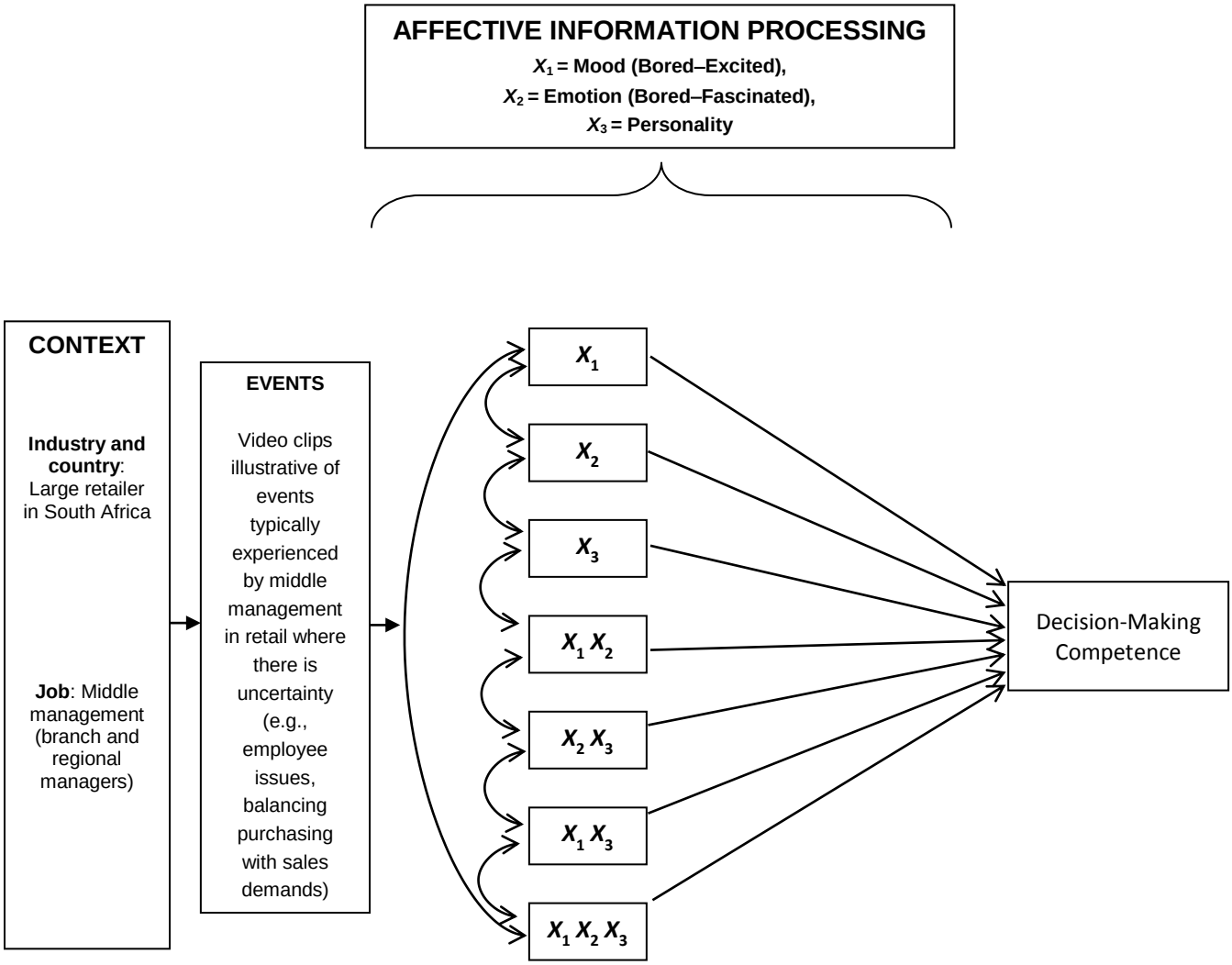


Figure 3.1: Moderated path analysis model contextualized

Hypothesis 1: There is a strong negative association between emotion bored and managers' decision-making competence.

$$\mathrm{DMC} = \alpha + \beta(\mathrm{Emotion\ Bored}) + e$$

Hypothesis 2: There is a strong negative association between mood bored and managers' decision-making competence.

$$\text{DMC} = \alpha + \beta(\text{Mood Bored}) + e$$

Hypothesis 3: Personality traits moderate the relationship between feeling bored (emotion and mood) and managers' decision-making competence.

$$\text{DMC} = \alpha + \beta_1(\text{Bored}) + \beta_2(\text{Personality}) + \beta_3(\text{Bored})(\text{Personality}) + e$$

3.2. External context

This study was conducted with a large retailer in South Africa. The pilot and main studies for this research were conducted in 2013.

3.2.1. *Work environment*

South Africa has the most established retail market in Africa, with stable macroeconomic conditions, low inflation and low interest rates (Moriarty et al., 2014). The participating retailer is a large publicly traded retail conglomerate and has been in the food and household items business for more than 30 years. The company comprises over 3,000 stores, spans more than 15 companies and serves 70% of South African shoppers, who are representative of the demography of South African society from all walks of life.

3.2.2. *Job description*

Specific tasks performed by middle managers in the retailer participating in this study include:

1. Sales and profit generation, including budget and target achievement
2. Labour and other legislation and company policy compliance
3. Meeting customer expectations and resolving customer queries or complaints
4. Staff recruitment
5. Staff management to ensure productivity

6. Stock management according to company policy
7. Ongoing training and development of all staff members
8. Floor-walk management
9. Promotions and advertisement management
10. Report analysis
11. Trading premises maintenance

Decision-making competence and effective leadership and supervision are essential competencies for these managers.

The roles, tasks and competency requirements for these managers align in broad terms with what is expected of middle managers in a large retail context, not only in South Africa but also elsewhere such as the United Kingdom (Siebert & Zubanov, 2010), where the key behavioural indicators for middle managers are given as sales focus, commercial awareness, leadership, developing people, drive and personal development, and planning and organizing.

3.2.3. *Participants*

Of the 230 retail middle managers who participated in this study, 67% were male and 33% female. Participants were geographically dispersed, with 63% operating in larger cities and 27% in smaller towns or rural areas. The managers participated in this study by completing online surveys.

3.3. Internal context measures

The focus of this study is on understanding the individual differences between individual middle managers (internal context) within the larger macro environment of retail middle management in South Africa.

In the social sciences, the latent variables researched are often more abstract than the variables examined in the “hard” sciences. Using measurement tools that are valid and reliable is therefore of utmost importance to ensure the quality of such research (Kimberlin & Winterstein, 2008). The validity and reliability of the instruments for measuring affect (emotions, moods and personality) used in this study are discussed below.

3.3.1. *Feeling bored*

Measurement tools for emotion and mood boredom will be discussed next.

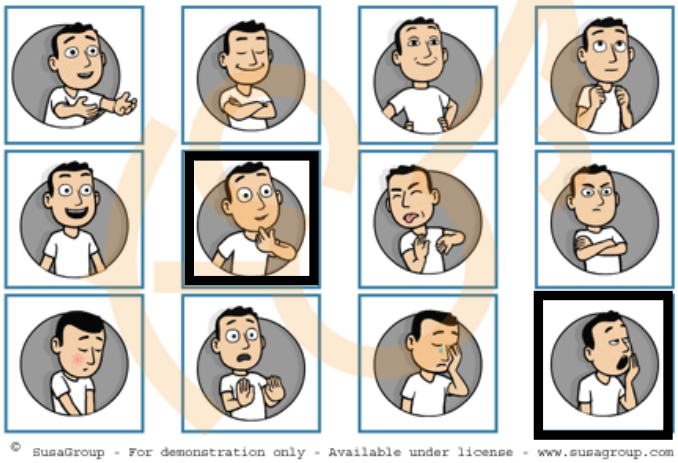
Emotion boredom

Measurement tools of emotions must be able to tap into emotions in a manner that limits the time available for participants to engage in over-thinking, which can prompt emotional regulation strategies. Outside a laboratory environment, the main debate about measuring emotions is whether to use non-verbal or verbal instruments. Non-verbal instruments fall mainly into two categories: those that measure reactions to facial expressions, and those that measure reactions to vocal expressions. The major advantages of non-verbal instruments over verbal instruments is that they are language-independent, can be used in different cultures, and are claimed to be less subjective than verbal self-report instruments (Desmet, 2002). A disadvantage of non-verbal instruments is that they are still influenced by cognitive processing, although to a lesser degree than verbal reports are (Sørensen, 2008).

Scientific research at the Technical University of Delft by Desmet (2002) led to the development of an online instrument, PrEmo, which can be used to measure emotions. PrEmo measures 12 discrete emotions, each falling on a spectrum from one polar opposite to the other: fear–hope, sadness–joy, shame–pride, boredom–fascination, dissatisfaction–satisfaction and disgust–desire, with associated arousal/valence indicators. When developing PrEmo, Desmet (2003) applied a strict significance level ($p < .001$) as the minimum criterion for all emotions to avoid inaccurate measures. The reliability of PrEmo was examined using test-retest methodology, and the correlations between emotions measured with PrEmo and other emotional measures varied from $r = .72$ to $r = .99$ (Desmet, 2002). Participants in the study also reported that they prefer PrEmo to other, verbal measures of emotions because they found it more intuitive and enjoyable. Later researchers that used PrEmo confirmed its validity and reliability in organizational settings (Poels & Dewitte, 2006).

PrEmo uses cartoon characters to exhibit emotions. This non-verbal tool is more valid for representing pure emotions and less prone to rationalizations than words used in verbal instruments or self-report questionnaires about emotions. It is also usable across cultures, as opposed to other non-verbal instruments that use actors to portray emotions (Desmet, 2003).

The cartoons pertinent to the emotions bored and fascinated are framed in bold in Figure 3.2 below.



Adapted by Desmet from his 2005 originals

Figure 3.2: Stills from PrEmo animations, with "fascinated" and "bored" highlighted

PreEmo was originally developed to measure reactions to products. However, as there has been increased interest in how emotions impact decisions and behaviour in organizations, its use has been extended to research in the domains of organizational behaviour and decision-making. Within PrEmo the researcher can select which emotions to research, as long as the emotion is studied on both ends of the continuum.

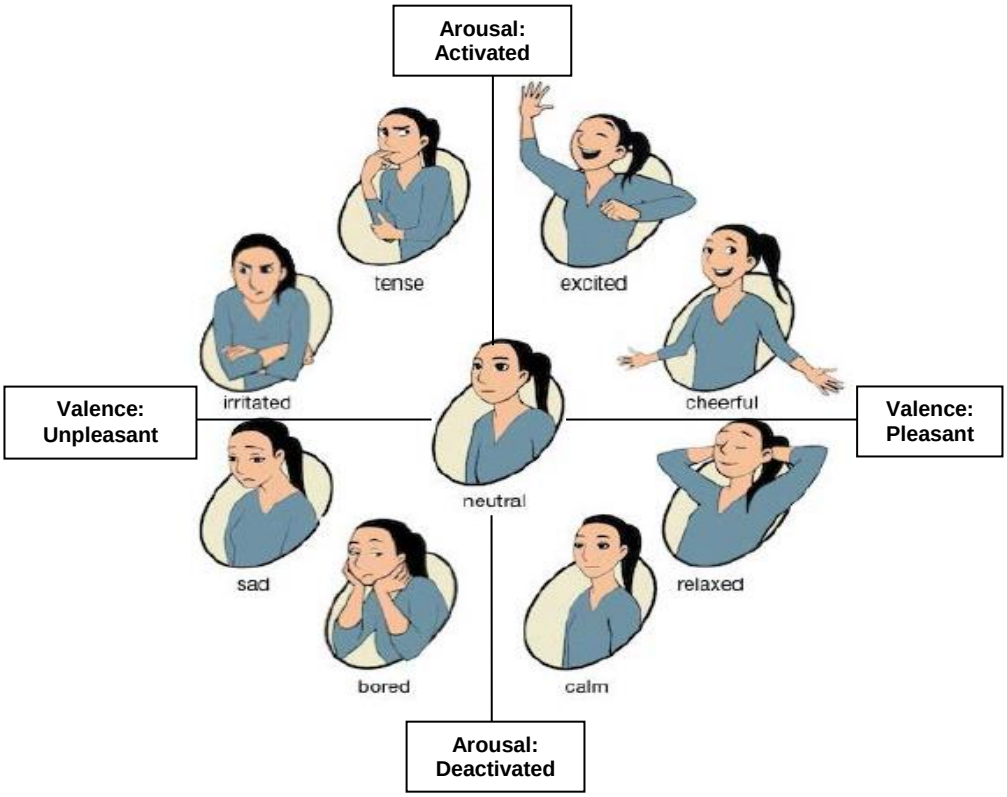
Film clips have been shown to be one of the most effective methods of emotion elicitation across cultures (John, Robins, & Pervin, 2008; Sebe et al., 2007). A pilot study was done to determine which of 15 short video clips (used with permission from Informed Talent Decisions LLC) best elicited emotion and represented uncertain events for middle managers; seven clips were selected for the final study. The film clips displayed typical situations that middle managers in retail need to manage where uncertainty is pertinent, e.g., employee performance issues, workplace safety issues and attending meetings where decisions are called for. After watching each video, participants clicked the PrEmo emoticons to indicate how much of the emotion they experienced. Completing PrEmo for all seven video clips took 25 minutes on average.

Only significant results pertaining to emotion bored and emotion fascinated have been reported in the results section.

Mood boredom

The Pick-A-Mood (PAM) mood measurement tool was used in this study. PAM was developed by Desmet et al. (2012) and takes less than a minute to complete, making it practical for longitudinal field experiments. PAM is structured within the circumplex and PANA models discussed above (Barrett & Russell, 1999; Russell, 1980). Desmet et al. (2012) established significance ($p < .001$) and validated that PAM measures both discrete mood states and represents the four basic valence/arousal mood quadrants.

The PAM tool should be used as shown below, meaning that the researcher cannot exclude some moods for research purposes. Although the focus of the current study is on the mood bored (noted as bored and excited in PAM), all moods were measured; participants were shown the illustrations below and asked to click on the mood they were experiencing. PAM was used three times in this study, with a gap of two weeks between the first and second use, and a similar gap of two weeks between the second and third use.



Adapted from Desmet et al., 2012, p. 3.

Figure 3.3: Pick-A-Mood (PAM) measure within the valence/PANAS framework

3.3.2. *Personality traits*

Multiple questionnaires are available for assessing personality traits, many of which are appropriate within the work context. As discussed in the review of the literature on personality, the Five Factor Model is the most widely used and extensively researched framework of personality in the workplace. The questionnaires most frequently used to measure the Five Factor Model of personality traits for selection and development purposes in the workplace include the Hogan Personality Inventory (HPI), the Neuroticism-Extraversion-Openness Personality Inventory Revised (NEO PI-R) and the Occupational Personality Questionnaire (OPQ). A meta-analytical study found some differences between these questionnaires for measuring the Five Factor personality traits model, but none was extreme enough to dictate the choice of measurement instrument (Pace, 2008).

This study uses the HPI to measure personality traits. The HPI is specifically designed for business settings and has been used across industries in over 400 validity studies to predict job performance. It comprises 206 statements that require true–false responses and it takes on average 20 minutes to complete. The test manual for the HPI (Hogan & Hogan, 2002) reports that in a sample size of 960 employed adults, internal consistency for the seven primary scales of the HPI ranged from .29 to .89, with test-retest reliability ranging from .69 to .87.

The personality trait definitions used in the HPI, which correlate with the Five Factor Model of personality traits found by Hogan (2002), are as follows:

- Adjustment (calm, optimistic, not moody); this correlates with the Five Factor personality trait of emotional stability, not neurotic.
- Ambition (takes initiative, competes, seeks leadership roles); this correlates with the Five Factor personality trait of surgency (extraversion).
- Sociability (talkative, social, entertaining); this correlates with the Five Factor personality trait of surgency (extraversion).
- Likeability (agreeable, relates well to others) *previously named Interpersonal Sensitivity in the HPI*; this correlates with the Five Factor personality trait of agreeableness.
- Prudence (pays attention to detail, dependable, follows rules); this correlates with the Five Factor personality trait of conscientiousness.
- Inquisitive (curious, imaginative, visionary) *previously named Intellectance in the HPI*; this correlates with the Five Factor personality trait of openness.
- Learning (enjoys learning, stays up to date) *previously named Scholastic Ability/Success in the HPI*; this correlates with the personality trait of openness (Roberts et al., 2005).

3.3.3. *Decision-making competence*

The Adult Decision-Making Competence (A-DMC) index is used in this study to assess managers' decision-making competence. The A-DMC was developed by Bruine de Bruin, Parker and Fischhoff (2007) and assesses how well individuals make decisions. The test developers used Cronbach's α and test-retest methodologies to ascertain A-DMC's reliability. The Cronbach's α for the six decision-making components ranged from 0.54 to 0.77, and those for the test-retests ranged from 0.46 to 0.77. Factor analysis was used to determine A-DMC's validity, with the factor loadings of the six decision-making components ranging from 0.23 to 0.80 (Bruine de Bruin et al., 2007).

Studies have shown that participants who perform better on the A-DMC reported fewer negative life events that reflected poor decision-making, indicating that the A-DMC is a distinct construct relevant to adults' real-world decisions (Bruine de Bruin et al., 2007). The A-DMC scale has also been used effectively in research studies with executives (Carnevale et al., 2010).

As discussed in Chapter Two, this study focuses on the four sub-scales of the A-DMC that have shown the highest relationship with cognition:

- *Resistance to framing*: This scale includes two seven-item sets (one set casts choices in positive terms and the other set in negative terms) and measures whether an individual is influenced by irrelevant differences depending on whether an option is phrased positively or negatively.
- *Under/overconfidence*: This scale comprises 34 items and measures how accurately individuals can judge their own knowledge.
- *Applying decision rules*: This scale contains 10 items and measures how well individuals apply decision rules, for example the weighted additive rule.
- *Consistency in risk perception*: This scale has 10 items and measures how well individuals perceive probability rules.

These four subscales took 25 minutes to complete on average.

3.4. Participants and procedures

Detailed descriptions of the participants and procedures in the pre-pilot, pilot and main studies will be presented next.

3.4.1. *Pre-pilot study*

During the pre-pilot phase the online surveys (i.e., PAM, HPI, A-DMC and PrEmo) were tested with a few sponsoring managers (e.g., from human resources and IT) as well as the researcher to assess performance across different Internet browsing platforms and to ensure functionality within the retailer's technical environment.

3.4.2. *Pilot study*

The purpose of the pilot study was three-fold. The first goal of the pilot was to identify which video vignettes used for soliciting emotions in PrEmo provided the most reliable data for measuring emotion bored under conditions of uncertainty pertaining to the retail middle-manager job context and to reduce the number of video clips used, to avoid participant fatigue. Second, the pilot was intended to identify DVD clips that would differentiate between managers' propensity to feel bored, rather than merely highlighting task conditions that would be experienced as boring by most managers. The third goal of the pilot study was to perform a power analysis to estimate the ideal number of participants required for the main study.

The pilot study was conducted between June and August 2013. Two hundred middle managers were invited to participate in the pilot study and 32 completed all four surveys. Results for those who completed the pilot study were incorporated in the final study.

Identifying video survey items for inclusion in study

The chosen instrument (used with permission from Informed Talent Decisions, LLC) comprises 15 video vignettes that are each meant to prompt emotions, recorded by the respondents using PrEmo. Six of these emotions could be considered pleasant (positive): hope, joy, pride, fascination, satisfaction and desire. The remaining six emotions could be considered unpleasant (negative): fear, sadness, shame, boredom, dissatisfaction and disgust. For the purpose of

researching emotion bored in both its activated/pleasant and deactivated/unpleasant ends of the spectrum, *fascination* and *boredom* are of interest in this study. The pilot study was conducted in three segments as shown in Figure 3.4 below.

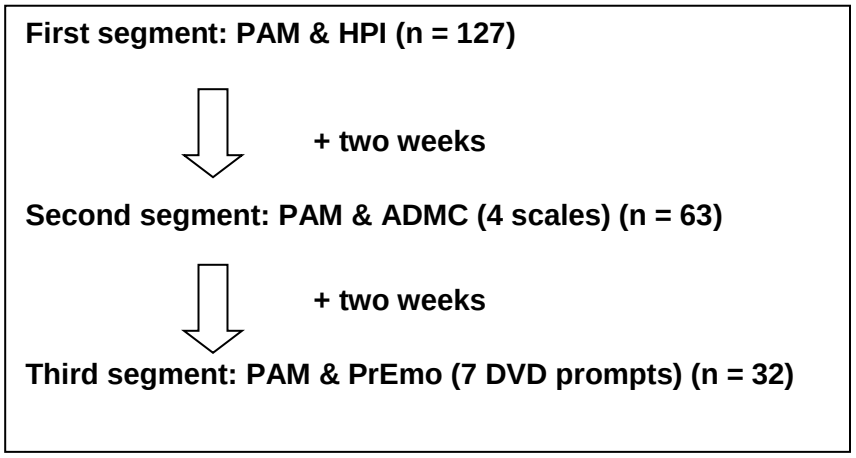


Figure 3.4: Flow of pilot study

To determine which videos produced the most reliable data, the responses were run through 15 factor analyses, one for each of the clips. If the videos reliably provoked one type of emotion, the loadings should show a clear separation between positive and negative emotions.

Table 3.1 shows the orthogonally (varimax) rotated loadings for the different factor analyses. The desired separations occurred for videos (DVDs) 1, 2, 11 and 14, so these were the first choice for use in the final instrument. Nonetheless, as the bar charts show (see the addendum), all four videos tended to activate the same positive emotions while provoking very few negative emotions. These figures show the average response for each emotion on the scale of zero to four, with error bars representing 2 standard errors around the means. The high means for videos 1, 2, 11 and 14 all appear concentrated among the positive emotions. In order to ensure that some negative emotions were being cued, the remaining distributions were also investigated. Videos 4, 7 and 9 were found to do the best job of stimulating negative emotions Thus, these were also retained. Videos that showed lower means and elicited fewer emotions – for example DVD 12 – were excluded from the final study.

Table 3.1: Factor Analyses of Emotions by DVD, Pilot Study

	DVD 1		DVD 2		DVD 3		DVD 4		DVD 5	
Emotion	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2
Desire			.632		.715		.561			.657
Satisfaction	.814		.829		.856		.843		.905	
Pride	.661		.811		.885		.902		.878	
Hope	.704		.489		.725		.666			.581
Joy	.745		.859		.861		.864		.609	
Fascination	.660		.665		.904		.795		.417	.488
Disgust		.526			.401	.497		.633	.566	
Dissatisfaction		.818						.704		.677
Shame		.564		.556		.724		.716		.798
Fear		.635		.593		.714		.741	.637	
Sadness		.905		.891		.858		.597		.772
Boredom				.891	.512	.533	.677		.892	
	DVD 6		**DVD 7**		**DVD 8**		**DVD 9**		**DVD 10**	
Emotion	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2
Desire		.714	.604	.539		.676	.672		.732	
Satisfaction	.425	.699	.692			.804	.811		.731	
Pride	.678	.622	.725			.634	.622		.756	
Hope		.712	.620			.682	.785		.561	
Joy	.674	.512	.692		.619	.614	.779		.909	
Fascination		.727	.827			.849	.779		.741	
Disgust	.800			.742	.825			.812		.736
Dissatisfaction	.810			.744	.653			.683		.891
Shame	.594		.421	.613	.802				.406	
Fear	.516			.777	.673			.699		.774
Sadness	.621			.649	.767			.744		
Boredom	.705	.506	.817		.716	.465		.817	.825	
	DVD 11		**DVD 12**		**DVD 13**		**DVD 14**		**DVD 15**	
Emotion	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2
Desire		.600	.640	.470	.514	.530		.445	.829	
Satisfaction		.853	.901		.900			.859	.868	
Pride		.604	.447	.540	.889			.704	.865	
Hope		.600	.682		.732			.738	.578	
Joy		.853	.862		.788			.841	.896	
Fascination		.740	.885		.566			.724	.836	
Disgust	.860			.850		.816	.930			.698
Dissatisfaction	.838			.772		.761	.962			.830
Shame	.755			.494	.455	.586	.659			.541
Fear	.743		.499	.464		.571	.980			.659
Sadness	.810		.601	.599		.713	.980			.706
Boredom	.815			.695	.673	.414	.980		.864	

The graphical representation of the findings shown in Table 3.1 for the seven DVDs retained in the study is available in the addendum.

Furthering the second aim of the pilot study, two clips will be discussed to illustrate the difference found in factor loadings on emotions elicited by situations representing conditions of uncertainty (to which managers reacted differently in terms of experiencing emotion boredom) and situations that strongly represent certainty.

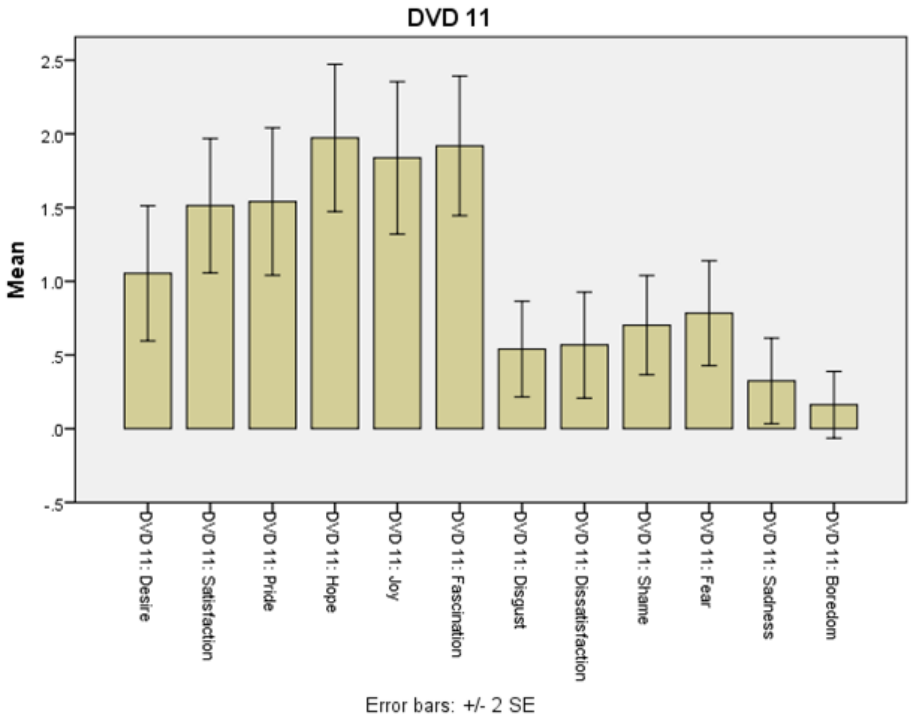


Figure 3.5: Responses to DVD 11 (Promotion offer tied to relocation)

Figure 3.5 represents the responses to a one-minute DVD clip displaying a situation where a manager is offered a promotion that is tied to relocation, arguably a situation that is ambiguous given its associated pros (financial and career advancement) and cons (moving family and self to a new town and dealing with new work colleagues). Many emotions were elicited, including emotion boredom (boredom and fascination) for some but not all participants. This contrasts with the results from DVD 12 (shown in Figure 3.6 below), which depicts a situation of no relevance to the manager.

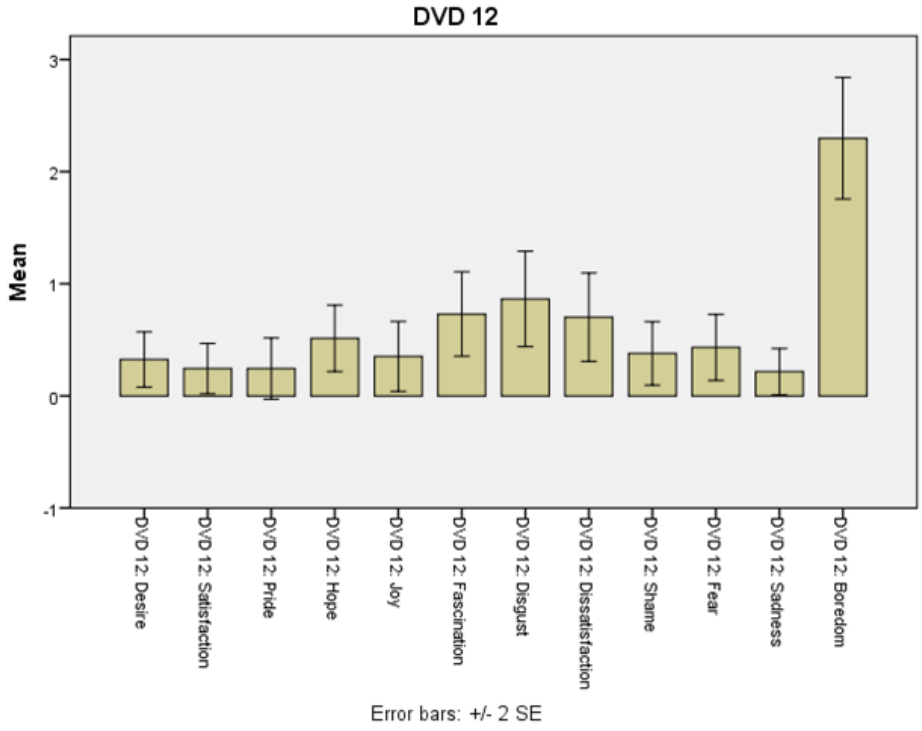


Figure 3.6: Responses to DVD 12 (Attending a boring telephone meeting)

Responses to video clip 12 (attending a boring telephone meeting) showed that most participants reacted with emotion boredom in its deactivated/unpleasant form. This is in line with the previous research of Fisher (1987), which showed that tasks that are monotonous or of qualitative underload prompts emotion bored in its deactivated/unpleasant form. Since not all respondents reported emotion bored, the responses to the clip also confirm other studies showing that boredom can be experienced both because of the task (boring meeting) and because of individual differences (Mercer-Lynn et al., 2014). Because the interest of this study is to research differences between individuals under conditions of uncertainty where some managers are expected to react with emotion bored and others not, situations such those shown in DVD 12 (where the task, in this case a boring meeting, bores most all people) were eliminated from the study.

The DVDs retained for the final study were those that produced the desired factor loadings showing that they 1) reliably depicted situations involving uncertainty, and 2) differentiated between managers experiencing emotion bored (including bored and fascinated).

The video clips depicting ambiguous situations triggered more mixed and more intense emotional responses. This finding supports the Hybrid Process Decision-Making Model of emotion and cognition under uncertainty proposed by Li et al. (2013), which posits that emotional reactions are triggered by work events where more uncertainty is involved.

Power analysis

Third, after exploring the PrEmo responses, a power analysis was conducted to determine the optimal number of individuals needed for the final study.

The models to be tested in the full study were to contain moderating relationships, meaning that each regression would have at least three variables (two main effects and an interaction). Figure 3.7 displays the sample size needed in order to observe different effect sizes.

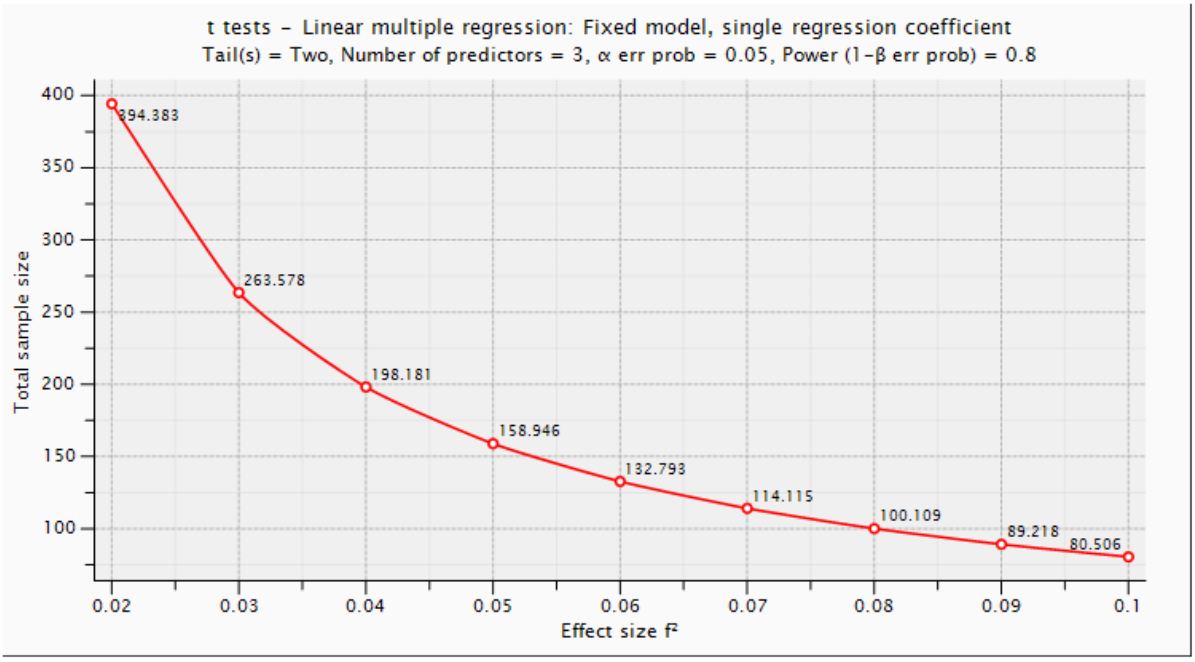


Figure 3.7: Power analysis of pilot study

The horizontal axis is the effect size f^2, which is equal to $\frac{R^2}{1-R^2}$, where R^2 is the partial R^2 for the variable being tested in the regression. The lowest value on the plot corresponds to a partial R^2 equal to .02, meaning that the term being tested (i.e., the interaction in a test of moderation) would uniquely account for 2% of the variance in the dependent variable. With this small effect size, the necessary sample size would be 394. This number falls quickly as the effect size rises. With a partial R^2 of just .05 (which leads to approximately $f^2 = .05$), the needed sample is 159.

The pilot sample was too small to reliably estimate moderation models, but the results from the different simple regressions revealed a range of effect sizes (calculated by squaring the beta column and using the number as the R^2 in the calculation of f^2). The significant results typically produced effect size estimates greater than 0.1, though this number should be used only as a very rough guide for the moderation models. It was thought likely that the interaction term would have a smaller effect size than the main effects and so the best approach would be to consider any effect size smaller than 0.1.

Nonetheless, even if the moderator's effect size is only around 0.05, the needed sample size is 159 or fewer. In sum, the power analysis provided an indication about how many participants would be required for this type of study.

3.4.3. *Main study*

The main study was conducted from late September to early November 2013. For this study an additional 2,624 managers (to include all middle managers at the retailer) were invited to participate. The flow of the study is shown in Figure 3.8.

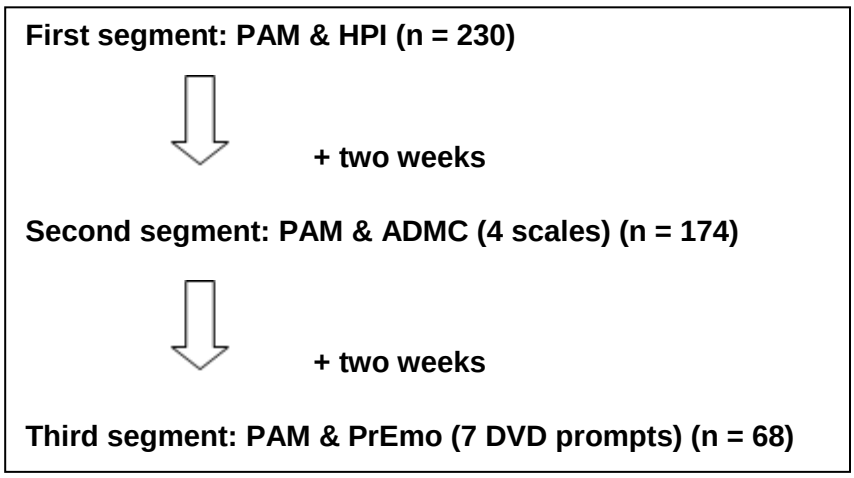


Figure 3.8: Flow of main study

For the first segment in this study, 230 managers participated. For PAM (picture survey) and HPI (word survey) only an Internet connection was required, with no special system requirements. For the second segment, 174 managers participated. For PAM and ADMC (words and numbers survey) only an Internet connection was required, with no special system requirements. The third and last segment of the study (seven short DVD vignettes of less than a minute each and PrEmo) required Flash and a strong Internet connection, and participants needed to use Firefox as a browser. Even though these system requirements were indicated at the onset of the study, they unfortunately prohibited some motivated participants from completing the last segment of this study, limiting the number of participants in the full study to 68.

All middle managers at the retailer received an invitation to participate in the research. As a benefit for participating in the study, each participating manager was given the option of receiving a private and confidential personalized report that could be used for his or her own professional development after participating in the full study. In line with ethical guidelines of the University of the Witwatersrand, confidentiality of all managers who participated in this study was and will be honoured by the researcher. Only the researcher and statisticians supporting the researcher had access to the complete dataset of this research. The participating company received only a general report outlining the overall findings of the study.

4. FINDINGS AND DISCUSSION

The findings and results for each hypothesis follow.

4.1. Findings and results

The first hypothesis was that there would be a significant negative association between the emotion bored and the domains of decision-making competence (DMC). This hypothesis was tested with a simple regression of the form

$$\text{DMC} = \alpha + \beta(\text{Emotion Bored}) + e$$

Of the 68 respondents who completed the PrEmo portion of the survey, 18 (26.5%) stated that they felt bored at some point (M = 1.368, SD = 3.545). Table 4.1 displays the size of the correlation (Pearson's r, equal to the standardized regression coefficient) along with the total variance explained by emotion bored for each DMC domain.

Table 4.1: Correlations (Pearson's *r*) between Emotion Bored (deactivated/unpleasant form) and Decision-Making Competence Scales

DMC scales (domains)	*R*	r^2	*p*
Resistance to Framing	0.016	0.01	0.902
Confidence	−0.386**	0.15	0.002
Decision Rules	−0.304*	0.09	0.014
Risk Perceptions	−0.206*	0.04	0.037

Note: n = 68, * $p < .05$, ** $p < .01$.

The results show no relationship between emotion bored and resistance to framing (r = .016). However, the remaining correlations are significant. Emotion bored has a moderate negative relationship with confidence, $r = -.386$, p = .002, and explains 15% of the total variability in the outcome. Emotion bored likewise has a significant moderate negative relationship with decision rules, $r = -.304$, p = .014, and accounts for 9% of total variability in the outcome. The effect on risk perceptions is also negative but somewhat smaller, $r = -.206$, p = .037, accounting for 4% of the total variability.

Table 4.2: Correlations (Pearson's *r*) between Fascination (activated/pleasant emotion, polar opposite of bored on the Boredom–Fascination scale) and Decision-Making Competence Scales

DMC scales (domains)	*R*	r^2	*p*
Resistance to Framing	0.08	0.006	0.522
Confidence	<0.001	<0.001	1.000
Decision Rules	−0.302*	0.091	0.014
Risk Perceptions	−0.091	0.008	0.466

Note: n = 68, * $p < .05$.

All but two study participants (97%) stated that they felt fascinated at some point, with PrEmo scores extending all the way up to 24 (M = 11.294, SD = 5.246). Only the relationship between fascination and decision rules is significant. Fascination has a moderate negative relationship with decision rules, $r = -.302$, p = .014, and explains 9.1% of the total variability in the outcome.

In summary, there is support for the first hypothesis. Higher levels of emotion bored (unpleasant valence, deactivated arousal emotion) decrease three of the four decision-making competence scales related to cognition, and higher levels of fascination (pleasant valence, activated arousal emotion) decrease one of the four decision-making competence scales (decision rules) related to cognition.

The second hypothesis was that there would be a significant association between mood bored and the DMC domains. As in the case of personality traits, this hypothesis was tested by performing several simple regressions of the form

$$\text{DMC} = \alpha + \beta(\text{Mood Bored}) + e$$

Here mood was measured using the frequency with which each mood was chosen across three opportunities in the survey. Out of the 109 respondents who completed the PAM portion of the survey, 4 (3.7%) reacted with boredom once. Twelve (11%) reacted with excited once, and another 3 (2.8%) reacted with excited three times.

The results appear in Tables 4.3 and 4.4. The tables show that only mood *excited* (the polar opposite of mood bored, mood bored in its activated/pleasant form) appears to have a

significant relationship with DMC. Specifically, there is a moderate negative relationship between excited and appropriate level of confidence, $r = -.307$, $p = .001$, indicating that 9.5% of the variability is explained, and a moderate negative relationship between excited and decision rules, $r = -.301$, $p = .002$, indicating that 9% of variability is explained. In other words, an appropriate level of confidence and the use of decision rules tend to decrease when a person's mood is more excited.

Table 4.3: Correlations (Pearson's *r*) between Mood Bored (deactivated/unpleasant form) and Decision-Making Competence Scales

DMC Scales (Domains)	*r*	r^2	*p*
Resistance to Framing	0.104	0.011	0.284
Confidence	0.119	0.014	0.219
Decision Rules	−0.027	0.001	0.785
Risk Perceptions	0.088	0.008	0.366

Note: n = 174.

Table 4.4: Correlations (Pearson's *r*) between Mood Excited and Decision-Making Competence Scales

DMC Scales (Domains)	*r*	r^2	*p*
Resistance to Framing	−0.104	0.002	0.282
Confidence	−0.308**	0.095	0.001
Decision Rules	−0.301**	0.09	0.002
Risk Perceptions	−0.006	0	0.954

Note: n = 174, ** $p < .01$.

In summary, the second hypothesis is partially supported. Mood excited decreased decision-making competence on two of the four scales; however, no significant association was found between mood bored and decision-making competence on any of the four scales.

Given that both emotion bored and mood excited affected DMC, a third hypothesis was put forward that the relationship between feeling bored (emotion and mood) and DMC would be moderated by personality traits. If moderation is present, the regression model can be written as

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2 e$$

Because X_1 and X_2 appear in the equation twice, the interpretation becomes a little more nuanced than in the simple regressions. Specifically, changing X_1 by one unit will cause Y to change by an amount equal to $\beta_1 + \beta_3 X_2$. That is, the effect of X_1 on Y will be *different* depending on what X_2 equals. Similarly, changing X_2 by one unit will cause Y to change by an amount equal to $\beta_2 + \beta_3 X_1$. That is, the effect of X_2 on Y will be *different* depending on what X_1 equals. Note that the "main effects" terms refer only to the effect of, for example, X_1 on Y (β_1) when $X_2 = 0$. When X_2 does not equal zero it is necessary to interpret the effect of each variable by considering the interaction term as well.

To test the third hypothesis, multiple regressions were estimated that included an interaction between feeling (emotion and mood) bored and each of the personality traits.

$$\text{DMC} = \alpha + \beta_1(\text{Bored}) + \beta_2(\text{Personality}) + \beta_3(\text{Bored})(\text{Personality}) + e$$

The model was repeated for each DMC domain. A significant estimate for the coefficient β_3 would indicate support for the hypothesis and warrant follow-up interpretation in terms of boredom's marginal effect, given the levels of the personality variable. The variables involved in the interaction were first mean-centred in order to improve the interpretability of all the moderation models reported. Two moderation models involving boredom turned out to be significant, both for the dependent variable of confidence. Only the significant relationships are reported.

Table 4.5 presents results for the significant interaction between boredom as an emotion and sociability, and Figure 4.1 illustrates the nature of the interaction.

Table 4.5: Emotion Boredom and Sociability Moderation Model of Confidence

					95% Confidence Interval	
Parameter	*B*	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	.901	.009	103.324	<.001	.884	.919
Boredom	−.014	.003	−4.440	<.001	−.020	−.007
Sociability	.003	.002	1.411	.163	−.001	.008
Boredom*Sociability	.004**	.001	2.740	.008	.001	.007

Note: ** $p < .01$.

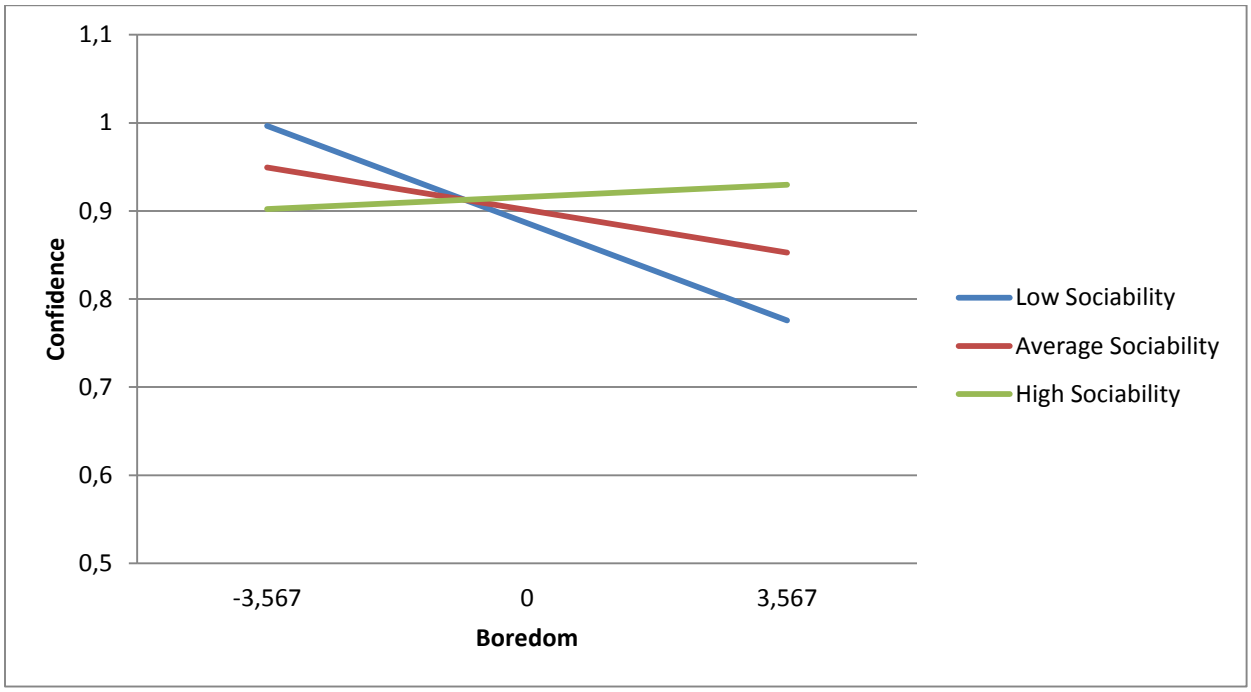


Figure 4.1: Effect of emotion bored on confidence by levels of sociability

For average levels of sociability, emotion boredom has a significant, negative effect on the outcome, $B = -.014$, $SE = .003$, $p < .001$, as shown in Table 4.5 and Figure 4.1. However, the interaction term shows that this effect diminishes as sociability increases, $B = .004$, $SE = .001$, $p = .008$. For example, consider an individual whose sociability score is 5 points below the average (the *SD* of sociability is 4.58). The effect of boredom is to decrease confidence by $-.014+.004(-5) = -.034$. On the other hand, for an individual whose sociability score is 5 points above the average, the effect of emotion boredom is to increase confidence by $-.014+.004(5) = .006$. That is, the negative effect of emotion boredom is more than eliminated among those with high sociability.

Table 4.6 shows another significant interaction involving emotion bored and the dependent variable confidence. This time, boredom is moderated by learning. Figure 4.2 depicts the interaction.

Table 4.6: Emotion Bored and Learning Moderation Model of Confidence

					95% Confidence Interval	
Parameter	*B*	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	.900	.009	104.692	<.001	.882	.917
Boredom	−.011	.003	−4.346	<.001	−.016	−.006
Learning	.008	.003	2.524	.014	.002	.015
Boredom*Learning	.005**	.002	2.859	.006	.002	.009

Note: ** $p < .01$.

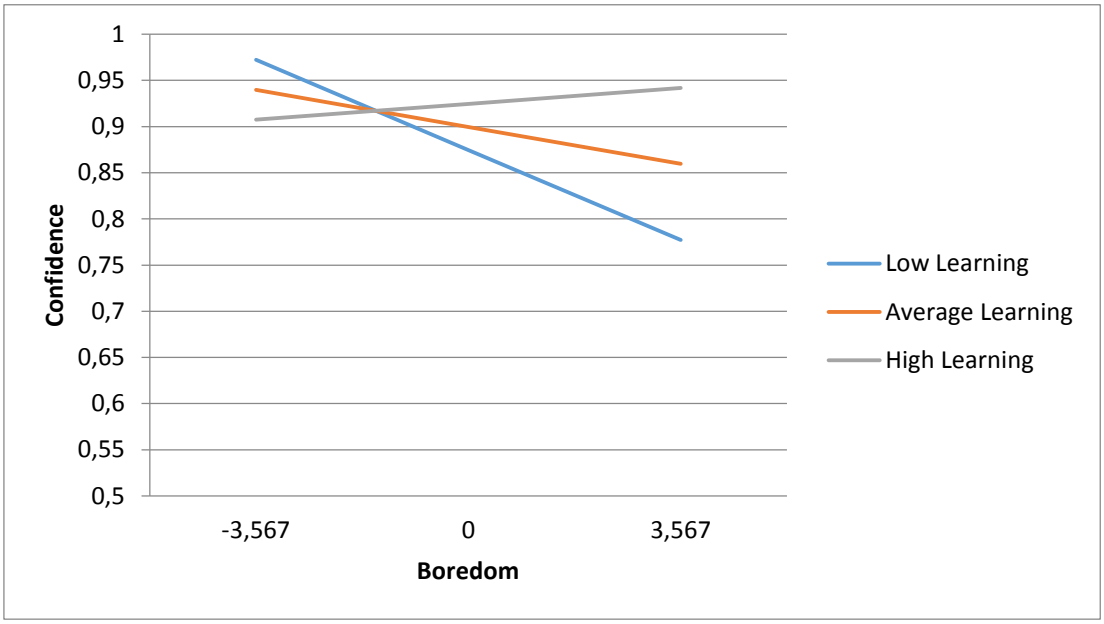


Figure 4.2: Effect of emotion boredom on confidence by levels of learning

A moderation effect was found between emotion bored on confidence by levels of learning as shown in Tables 4.6 and Figure 4.2. For average levels of learning, emotion bored has a significant, negative effect on the outcome, $B = -.011$, $SE = .003$, $p < .001$. The size of the effect varies depending on whether learning is greater or less than the mean. For an individual whose learning score is −3.5 (one SD below the mean), the effect of emotion boredom would be equal to −.011+.005(−3.5) = −.285. However, for an individual who is 3.5 points above the mean, the effect of emotion boredom would be to increase confidence by −.011+.005(3.5) = .007.

Figures 4.1 and 4.2 graphically display that the impact of emotion bored on confidence is moderated by two personality traits, namely, learning and sociability. However, no other moderation effects were found for confidence or any other DMC with personality traits.

Additional moderation models were run to determine if there were any interactions between the polar opposites of mood boredom (excited) and emotion boredom (fascination) with decision-making competence scales. Significant models were found and are discussed below.

Table 4.7 and Figure 4.3 show a model with resistance to framing as the dependent variable. While the main effect of mood excited (polar opposite of mood boredom) is non-significant, the interaction with likeability is significant, $B = .118$, $SE = .054$, $p = .032$. The positive coefficient on the moderation term means that the negative effect of excited tends to change towards positive as likeability scores increase. To be more specific, for an individual whose likeability score is 5 points below the average, the effect of increasing scores on the mood excited scale by one unit is likely to cause resistance to framing to *decrease* by $-.149 + .118(-5) = -.739$. Now consider an individual whose likeability score is 5 points above the mean; the effect of increasing scores on the excited scale by one unit is to cause resistance to framing to *increase* by $-.149 + .118(5) = .441$.

Table 4.7: Mood Excited and Likeability Moderation Model of Resistance to Framing

					95% Confidence Interval	
Parameter	*B*	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	3.754	.054	70.044	<.001	3.648	3.860
Excited	−.149	.100	−1.499	.137	−.347	.048
Likeability	−.003	.020	−.153	.879	−.044	.037
Excited*Likeability	.118*	.054	2.177	.032	.010	.226

Note: * $p < .05$.

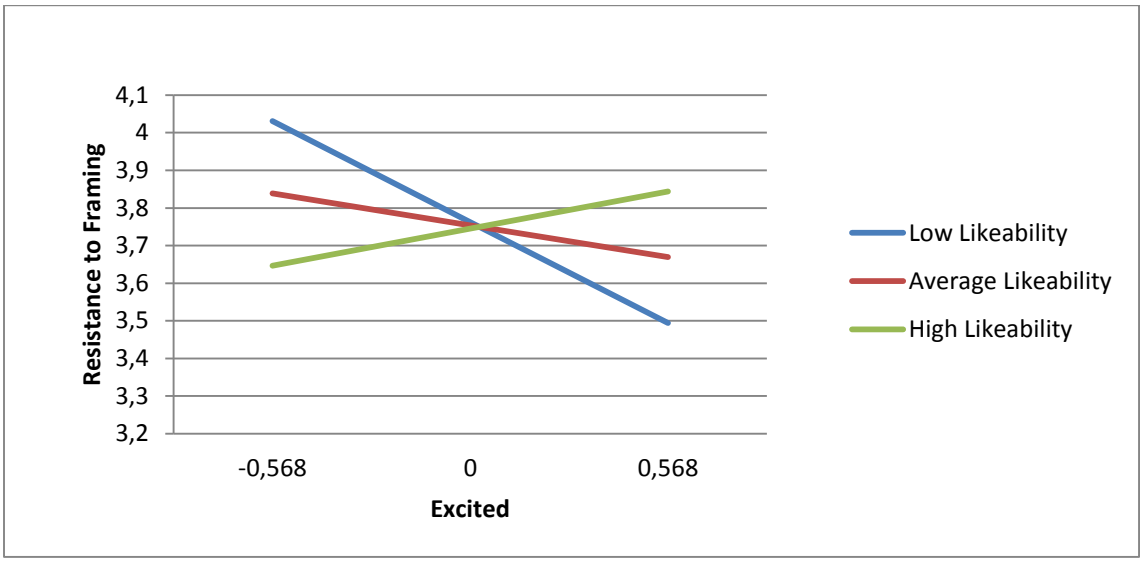


Figure 4.3: Effect of mood excited on framing by levels of likeability

The final DMC domain explored was risk perceptions, and four interactions turned out to be significant. The first consisted of the moderating effect of adjustment on fascination. The results can be seen in Table 4.8 and Figure 4.4. The interaction term in the model is significant, B = .001, SE < .001, p = .003. When adjustment is 5 points below the mean (SD = 5.266), the effect of a unit increase in fascination is to decrease risk perceptions by −001+.001(−5) = −.006. However, when adjustment is 5 points above the mean, a one-unit increase in fascination increases risk perceptions by −001+.001(5) = .004.

Table 4.8: Emotion Fascination and Adjustment Moderation Model of Risk Perception

Parameter	*B*	Std. Error	t	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Intercept	.623	.012	52.952	<.001	.600	.647
Fascination	−.001	.002	−.357	.722	−.005	.004
Adjustment	−.002	.002	−1.197	.236	−.006	.002
Fascination*Adjustment	.001*	.000	3.043	.003	.000	.002

Note: * $p < .05$.

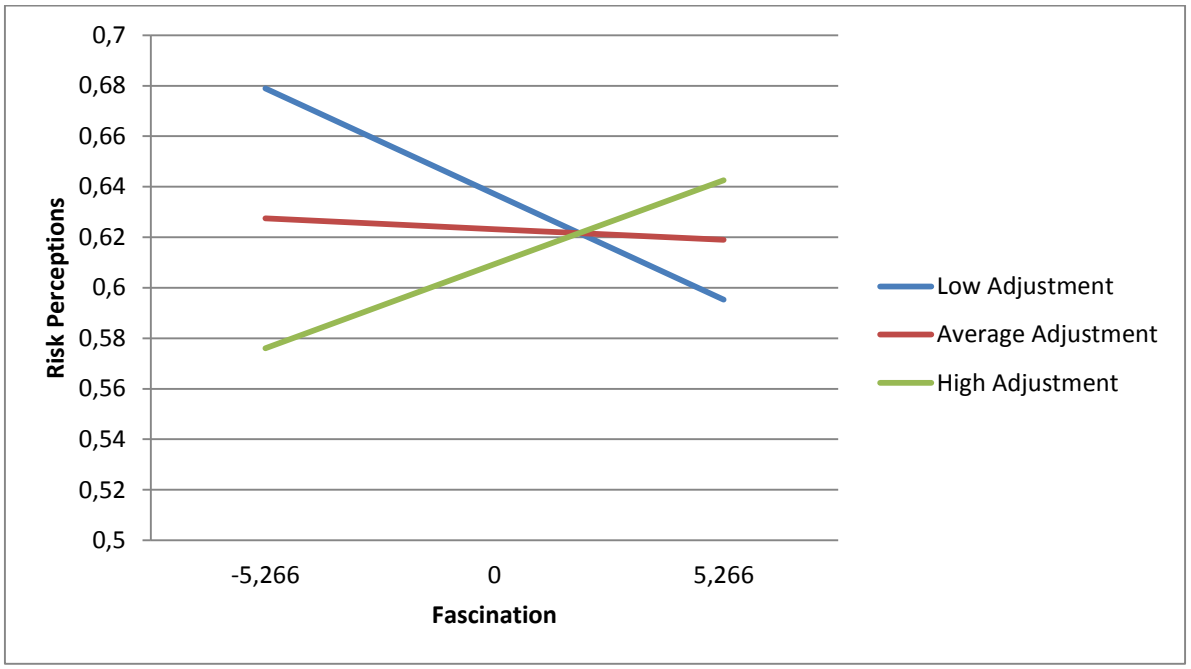


Figure 4.4: Effect of fascination on risk perceptions by level of adjustment

The next significant moderation model involved mood excited and sociability. Table 4.9 shows the full results, and Figure 4.5 illustrates them. The negative sign on the significant interaction term, $B = -.013$, $SE = .004$, $p = .003$, shows that the effect of mood excited on risk perceptions becomes more negative as sociability scores increase. For an individual whose sociability score is 4.5 points below the mean ($SD = 4.458$), a unit increase in mood excited leads to a $-.017+(-.013)(-4.5) = 4.15$ *increase* in risk perceptions. However, at 4.5 points above the mean, the effect is a decrease of $-.017+(-.013)(-4.5) = -.076$.

Table 4.9: Mood Excited and Sociability Moderation Model of Risk Perception

Parameter	*B*	Std. Error	t	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Intercept	.642	.009	68.776	<.001	.624	.661
Excited	−.017	.017	−1.010	.315	−.051	.016
Sociability	−.002	.002	−1.084	.281	−.006	.002
Excited*Sociability	−.013**	.004	−3.092	.003	−.021	−.005

Note: ** $p < .01$.

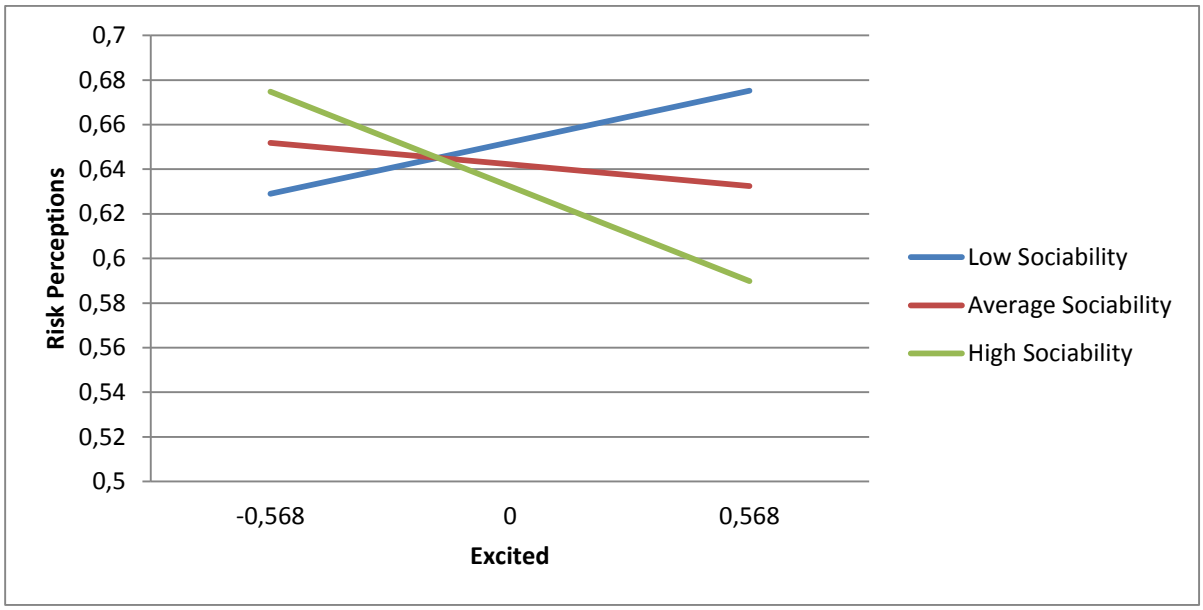


Figure 4.5: Effect of mood excited on risk perceptions by levels of sociability

The third significant interaction involved mood excited and inquisitive. Table 4.10 shows the full results, and Figure 4.6 displays the changing slopes across levels of inquisitive. When inquisitive is at its mean, each one-unit increase in the measure of mood excited leads to a (non-significant) decrease of .002 in the dependent variable. However, this effect changes significantly depending on levels of inquisitive, as shown by the significant interaction term, B = −.013, SE = .004, p = .006. For an individual whose inquisitive score is 5 points below the average, the effect of changing mood excited scores by one unit is to cause risk perceptions scores to *increase* by −.002 − .013(−5) = .063. On the other hand, for an individual who scores 5 points above the average, each increase in mood excited scores causes risk perceptions to *decrease* by −.002 − .013(5) = −.067. In other words, mood excited has a positive effect on risk

perceptions among those scoring low on inquisitive, but a negative effect among those scoring high on inquisitive.

Table 4.10: Mood Excited and Inquisitive Moderation Model of Risk Perception

					95% Confidence Interval	
Parameter	*B*	Std. Error	t	Sig.	Lower Bound	Upper Bound
Intercept	.645	.009	69.135	.000	.627	.664
Excited	−.002	.016	−.119	.906	−.034	.030
Inquisitive	−.003	.002	−1.523	.131	−.008	.001
Excited*Inquisitive	−.013**	.004	−2.831	.006	−.022	−.004

Note: ** $p < .01$.

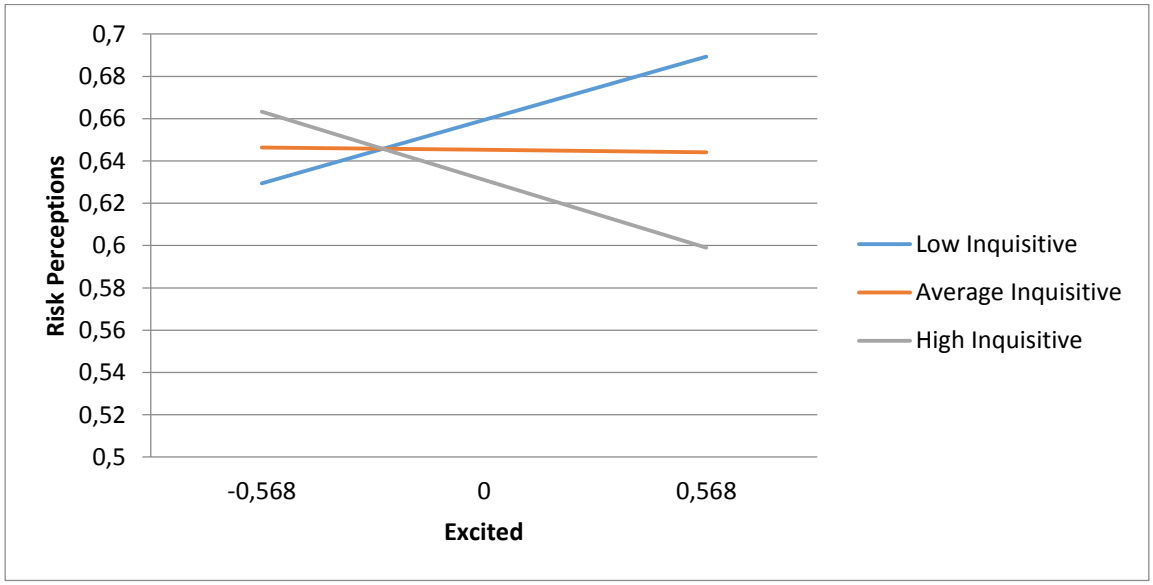


Figure 4.6: Effect of mood excited on risk perceptions by level of inquisitive

There was a significant interaction between mood excited and learning. Table 4.11 shows the full model results and Figure 4.7 illustrates the changing slopes. The interaction term is significant, $B = -.014$, $SE = .006$, $p = .015$. This means that the main effect of mood excited becomes more negative as learning increases. For someone whose learning score is 3 points below the mean (*SD* of learning is 3.046), a one-unit increase in mood excited leads to an increase in risk perceptions equal to $-.028 + (-.014)(-3) = .014$. However, the significance reverses when learning is 3 points below its mean. In this case, the effect of increasing mood excited scores by one is to decrease risk perceptions by $-.028 + (-.014)(3) = -.07$.

Table 4.11: Mood Excited (PA/polar opposite of mood boredom) and Learning (component of openness) Moderation Model of Risk Perception

Parameter	*B*	Std. Error	t	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Intercept	.641	.009	68.139	.000	.622	.660
Excited	−.028	.019	−1.478	.142	−.066	.010
Learning	−.006*	.003	−1.996	.049	−.012	0.00
Excited*Learning	−.014*	.006	−2.467	.015	−.025	−.003

Note: * $p < .05$.

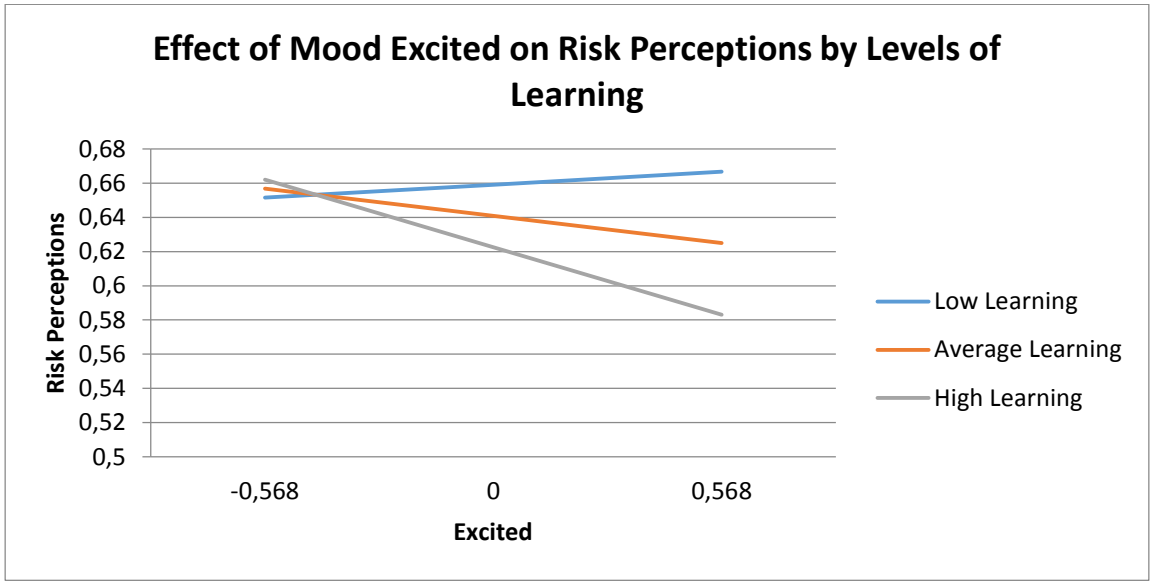


Figure 4.7: Effect of mood excited on risk perceptions by levels of learning

To summarize, there are several cases in which the effect of feeling bored is moderated by personality, suggesting that how feeling bored affects DMC cannot be fully understood if personality is not taken into account.

4.2. Discussion

Hypotheses 1 and 2 investigated the association between feeling bored and the decision-making competence of retail middle managers. Feeling (emotion and mood) bored was studied from both ends of its valence/arousal continuum, as indicated in Table 4.12 below.

Table 4.12: Description of Feeling Bored in Arousal (activated/deactivated), Valence (pleasant/unpleasant) and Discrete Terms

	Deactivated/Unpleasant	**Activated/Pleasant**
Emotion (reaction to event, milliseconds to hours)	Bored	Fascination
Mood (lingering hours to months)	Bored	Excited

Findings noted in the results pertaining to hypotheses 1 and 2 are summarized in Table 4.13 below.

Table 4.13: Feeling Bored and Decision-Making Competence

		Percentage of study participants	**Percentage of total variability of decision competence outcome explained**			
Reported feeling			Confidence	Decision rules	Risk	Resistance to framing
Emotion	Bored	26.5%	15%	9%	4%	–
	Fascinated	97%	–	9.1%	–	–
Mood	Bored	4%	4%	–	–	–
	Excited	11%	9.5%	9%	–	–

This study points to the importance of paying attention to emotion bored and its consequences in the retail middle-manager context. Just over a quarter, 26.5%, of retail middle managers reacted with emotion bored when faced with work situations that had uncertainty embedded (e.g., managing a situation where employee safety and client needs were at odds). The results in Table 4.14 above show that emotion bored is significantly negatively associated with three of the four DMC domains. Ignoring conditions that fuel emotion bored in retail organizations is likely to be costly, given that previous research estimated a loss of productivity due to boredom at $750 billion per year in the United States (van der Heijden et al., 2012).

This research furthermore empirically confirms that emotions, including emotion bored, need to be considered in decision-making work contexts where there is uncertainty, as Li et al. (2013) postulated in their Hybrid Process Decision-Making model. However, as is evident from the results noted in Table 4.14, *emotion bored* (as proposed in the Hybrid Decision-Making Model) provides only limited information for explaining the consequences of feeling bored on decision-making competence.

By clarifying the *feeling bored* construct as summarized in Table 4.13 above, this study has not only added to the body of literature about boredom but has also enabled a more nuanced empirical explanation of the impact of feeling bored on confidence levels, decision rules and risk perceptions. More specifically, emotion boredom and mood boredom are both associated negatively with DMC, but from polar opposite valence/arousal ends, that is, emotion bored is more detrimental to DMC in its deactivated/unpleasant form, whereas mood excited is more detrimental to DMC in its activated/pleasant form.

In order to test Hypothesis 3, the moderation effect of personality traits between feeling bored and decision-making competence were investigated. A table summarizing the significant findings is provided below.

Table 4.14: Moderation Effect of Personality between Feeling Bored and Decision-Making Competence

FEELING BORED AND PERSONALITY			DECISION-MAKING COMPETENCE DOMAINS			
Feeling Bored	**Personality Trait**	**Level**	**Appropriate Level of Confidence**	**Ability to Follow Decision Rules**	**Accurate Risk Perception**	**Ability to Resist Framing (Stay Objective)**
EMOTION						
Fascinated						
	Adjustment	High			Significant Increase	
		Average			Decrease	
		Low			Significant Decrease	
Bored						
	Sociability	High	Significant Increase			
		Average	Decrease			
		Low	Significant Decrease			
	Learning	High	Significant Increase			
		Average	Decrease			
		Low	Significant Decrease			
MOOD						
Excited						
	Likeability	High				Significant Decrease
		Average				Decrease
		Low				Significant Increase
	Inquisitive	High			Significant Decrease	
		Average			Decrease	
		Low			Significant Increase	
	Learning	High			Significant Increase	
		Average			Decrease	
		Low			Significant Decrease	
	Sociability	High			Significant Decrease	
		Average			Decrease	
		Low			Significant Increase	
Bored			No Significant Association			

Looking at personality as a moderator contributes to understanding the dynamics within the affective domain. Firstly, personality traits moderated the impact of feeling bored on decision-making competence, but different personality traits matter differently. *Learning* (part of the personality trait openness) is consistently beneficial to eliminate the negative effects of feeling bored. *Sociability*, on the other hand, can be a help or hindrance, depending on the associated

arousal/valence of feeling bored. High levels of sociability elevate confidence levels only when feeling bored is experienced as an emotion in its unpleasant/deactivated form and distort risk perceptions only when feeling bored is experienced as a mood in its pleasant/activated form. It is likely that engaging with others (sociability) is useful for alleviating the unpleasantness of experiencing emotion bored. It is plausible that high levels of sociability can build a false sense of confidence, generating excitement and igniting risky behaviour, if it is not coupled with learning. Managers who are emotionally *well-adjusted (free from neuroticism)* are able to adhere to decision rules in spite of experiencing emotion fascinated. Emotion fascinated was experienced at some point during the study by 97% of retail middle managers. Given this high prevalence of emotion fascination and its consequence for decision competence, it would likely behove retailer organizations to hire well-adjusted managers.

Second, this research highlights that personality is beneficial in neutralizing the impact of *feeling bored* on decision-making competence only when experienced in its pleasant/activated form, or when experienced fleetingly as emotion bored. Only a very small percentage (4%) of managers experienced mood bored. It is hard to imagine someone who is often in a bored mood retaining their role as a retail manager for too long (which is most likely the reason for the small representation in this sample) and it is plausible that the small sample size resulted in no significant association between mood bored and personality.

4.3. Limitations and strengths

Although this study is the first to show that emotions, mood and personality all interact in a combined way to impact DMC, there are some limitations to the data that need to be acknowledged.

4.3.1. *Limitations*

Multilevel data is one possible limitation to this study. Multilevel data refers to the tendency of individuals belonging to the same group to respond in the same way on research measures, compared with individuals from other groups. This tendency becomes particularly evident in longitudinal studies where the same research participants are measured in two or more waves with the same measure (MacKinnon, 2008).

However, although the middle managers at the retailer who participated in this study are all from the same conglomerate retailer and the same country, there were significant differences within this group. The “same group” effect was probably lessened because participating managers were from

- different branch sizes associated with somewhat different levels of responsibilities,
- different geographical areas in South Africa, and
- different “heritage” management practices, since the original company acquired other companies and now manages 14 companies.

The models all assumed linearity in the relationships. The large number of models considered and the limitations of the small sample size made it difficult to explore the effects of including logarithmic or polynomial transformations that may account for non-linear relationships. For example, increasing boredom may have a stronger effect on decision-making competencies when going from no boredom to a little boredom, but the effect may be less strong when going from some boredom to a lot of boredom. Further theorizing in this area would allow for more targeted data collection and better hypotheses related to function forms. Despite this limitation, the models did capture contingencies in marginal effects through two-way and even a three-way interaction.

The final limitation is the small sample size. Given the busy schedules of store managers and some technical difficulties experienced with the third, video-based survey, it was difficult to get more than 68 respondents to take part in the complete survey. Future research should seek to replicate the findings with larger samples where possible, though recognizing that collecting data from busy professionals will always require expending more resources than collecting data from, for example, college students.

Despite its limitations this study has some pertinent strengths, which will be discussed next.

4.3.2. *Strengths*

Since this study was done with managers representative of the middle-manager retail environment in South Africa, generalization of this study's results to other middle management retail contexts in South Africa can plausibly be claimed.

Since this study was done with managers who are operating within their natural work environment, it enables higher external and contextual validity.

Boredom is an area that is under-researched and pertinent to the retail environment. This is the first study that focuses on feeling bored as both an emotion and a mood and the first study of its kind in the middle-manager retail environment.

5. CONCLUSION

Collectively, emerging from an extensive literature review and verified by the empirical findings of this study, *feeling bored* was shown to be significantly negatively associated with decision-making competence in the middle-manager retail context. In addition, examination of personality as a moderator between feeling bored and decision-making competence explained which personality traits are consistently beneficial to sound decision-making and which are conditionally beneficial.

These findings have direct impact for scholars, retail organizations and managers, yet can be better explained by looking at what emerged through this research about the respective parts (e.g., decision-making competence, personality and feeling bored), their organization (e.g., the role of personality, the links between feeling bored and decision-making competence) and their definitions (e.g., what defines feeling bored).

5.1. Theoretical contribution

A summary of the main points pertaining to interactions, the parts studied and their definitions follows.

5.1.1. *The role of personality*

Theoretical conceptualizations about the interactions between personality, feeling bored and DMC put forth in the Expanded Decision-Making Process Model (which was built on literature foundations of the past 20 years, namely the AET and the Hybrid Process Decision-Making Model of affect and cognition under uncertainty) were empirically verified in this study.

First, personality proved to act as a moderator as per the example shown in Table 5.1 below.

Table 5.1: Moderation Effect of Personality Trait Openness (including its learning and inquisitive aspects) between Feeling Bored and Decision-Making Competence

FEELING BORED AND PERSONALITY			DECISION-MAKING COMPETENCE (DMC)			
Feeling Bored	**Personality Trait**	**Level**	**Appropriate Level of Confidence**	**Ability to Follow Decision Rules**	**Accurate Risk Perception**	**Ability to Resist Framing (Stay Objective)**
EMOTION						
Fascinated			No significant association			
Bored						
	Learning	High	Significant Increase			
		Average	Decrease			
		Low	Significant Decrease			
MOOD						
Excited						
	Inquisitive	High			Significant Decrease	
		Average			Decrease	
		Low			Significant Increase	
	Learning	High			Significant Increase	
		Average			Decrease	
		Low			Significant Decrease	
Bored			No Significant Association			

Empirically, this study found that the personality trait *openness* (as noted in the HPI measurement tool used as *learning* and *inquisitive*) moderated the negative effects of feeling bored on managers' DMCs, with the specific nuances indicated in Table 5.1 above. The nuanced understanding of the moderator effect of trait *openness* on the *feeling bored–DMC* relationship was made possible by studying *feeling bored* as an emotion and a mood.

Empirically, this study also found that the personality trait sociability acts as a moderator in the feeling bored–DMC relationship as noted in the findings; however, its helpfulness in eliminating the negative effects of feeling bored on DMC is mixed. Furthermore, managers with a high need to be liked (personality trait *agreeable*) were not able to keep decisions *objective* when in an *excited mood*, and managers with a lower *adjustment* personality trait were less able to appropriately assess *risk* when experiencing *emotion fascinated*. The latter is of specific relevance to retail managers since 97% of participants in this study reacted with *emotion fascination* to work events typical to managers in retail.

Second, as proposed in the EDMPM, the study provided empirical evidence that emotions, moods and personality need to be considered under conditions of uncertainty in decision-making contexts, not only emotions. If only the emotional aspects of feeling bored (i.e., emotion bored) had been considered in this study, the conclusion noted in the aforementioned paragraph would have indicated only the helpful aspects of sociability, and not the nuanced understanding. This point has implications for scholars and practitioners in organizations.

5.1.2. *Uncertainty-activated emotions, moods and personality*

What was indicated in the literature was confirmed in the pilot study: work events with uncertainty or ambiguity embedded (e.g., managers have to meet sales targets but are unable to purchase needed stock) triggered emotions. However, in contrast to conceptualizations of previous research (Li et al., 2013), uncertain events also triggered mood boredom (i.e., excited) and as noted above personality played a moderating role under these conditions.

5.1.3. *Feeling bored has a strong negative association with decision-making competence*

This study found a significantly negative association between feeling bored and decision-making competence, specifically indicating that *feeling bored* is negatively associated with three decision-making competence domains (confidence levels, decision rules and risk perception).

5.1.4. *Four domains of decision-making competence are pertinent to decision-making contexts where cognitive calculations are required*

From the literature review the four decision-making competence domains most pertinent in cognitive calculations (confidence levels, decision rules, risk perception and resistance to framing denoting one's ability to remain objective) were highlighted and utilized in this study. Highlighting these DMC domains has practical application for organizations and managers since it has indicated which DMC domains are most pertinent to decision-making contexts where there is uncertainty, as indicated by the EDMPM.

5.1.5. *"Feeling bored" defined*

Both the literature reviewed and empirical findings from this study clarified what defines *feeling bored,* providing a model that can be applied to future research studying feeling bored. Feeling bored was identified as *an emotional reaction or mood presenting on a two-dimensional valence/activation continuum,* which enabled more nuanced investigation of this construct.

5.2. Recommendations for future research

First, from the literature review trait, openness was shown to be the least understood or examined. This study shows that trait openness warrants further research in work settings (especially work settings prone to boredom), specifically for its moderation effects. It also indicates that its aspects (learning and inquisitiveness) serve different functions, and it would therefore be beneficial for this trait to be studied at the aspect level, as per the HPI.

Second, this study validated the benefits of utilizing the conceptual EDMPM in decision-making research. Given the empirical evidence this study provides for the conceptualizations of the EDMPM put forth in the literature review, it is recommended to research emotions, moods and personality together (rather than separately, as is currently the preference) as per the dynamic flow indicated in the EDMPM, and to pay specific attention to the moderating role of personality in the context researched. This study is contextualized in middle management in retail in South Africa. More and larger comparative studies are needed to provide a holistic picture of retail (and other industries) across country cultures utilizing the EDMPM.

Third, an examination of the long-term effect of feeling bored on managers working under conditions of uncertainty could further contribute to designing more and varied suggestions for coping with feeling bored and making sound everyday management decisions.

Fourth, from the literature review this research has highlighted which decision-making competence domains (confidence levels, decision rules, risk perception and resistance to framing denoting one's ability to remain objective) matter to cognitive calculations under conditions of uncertainty. However, it has not indicated which of these DMC domains associate

most strongly with bottom-line performance indicators. Further research to this effect could focus on organizational and management development efforts.

5.3. Practical implications for retail organizations

For selection: First, personality traits conducive to retail managers' sound decision-making competence under conditions of uncertainty are: *openness* and *adjustment* (free from neuroticism). Noting the benefits of trait openness (especially its learning aspect) for countering feelings of boredom points to a need to include this trait in selection criteria for retail middle managers. In addition, adjustment counters the negative association between emotion fascinated (which has a 97% prevalence in retail managers in this study) and managers' ability to assess decision risk appropriately. Taken together, these findings point to a need to consider learning and adjustment trait levels in selection practices. Second, this study provides evidence that a manager's ability to resist feeling bored (especially resistance to reacting with emotion bored to work situations pertinent to the job, which showed a 26.5% prevalence) needs to be taken in consideration when making hiring decisions for middle managers in retail, especially if they are to be put in situations where there is uncertainty.

For training: The benefits learning showed in countering the effects of boredom (in an environment shown in the literature and by the empirical evidence of its prevalence of 26.5% in this study to be boredom-prone) need to be considered when designing learning and training policies and practice.

For task and role structuring: First, given the negative association between feeling bored and decision-making competence, which is a key role of middle managers in retail, retail organizations will benefit from structuring tasks and roles in a way that minimize situations that bore most managers. As shown in the pilot study, one such example is mandatory attendance of telephone meetings of peripheral interest to some of the managers. Second, this research indicates that ambivalent or uncertain events trigger feelings, including feeling bored, with consequences for everyday decision competence. In the case of feeling bored, one's decision rules, confidence about how much one actually knows vs. how much one thinks one knows and risk perceptions get distorted. Managers able to recognize and utilize this knowledge can develop coping mechanisms for themselves to prevent undesirable decision outcomes.

For goal congruence: Organizations that are able to identify and reduce uncertain situations embedded in their middle-manager roles, creating conditions that evoke fewer emotional and more intuitive responses within which their managers can operate, will benefit from managers making fewer mistakes in judgement and improving subsequent performance. For example, in this study, situations where managers were required to meet unduly tight deadlines while producing mistake-free output involving many details (creating uncertain conditions with conflicting priorities), triggered feelings of boredom.

For designing continuous learning: The findings of this study reiterated the benefit of continuous learning for managers and their teams, especially since learning neutralizes the negative effect feeling bored has on appropriate confidence levels in retail management decision-making contexts.

For inclusive development feedback and training: For coaches and trainers in organizations this research indicates that current practices that favor only personality measures and behavioral feedback are limiting and can benefit from expansion (i.e., by including the impact of emotions, moods, personality and decision-making competence when conducting management training).

For career decisions: For those more prone to boredom, the retail middle management context is likely not the best career option.

5.4. Concluding remarks

The purpose of this study has been to investigate the role of personality in the relationship between managers' feeling bored and their decision-making competence within a middle-management retail context. It concluded by finding that feeling bored is significantly negatively associated with decision-making competence of middle managers in retail, notably affecting their confidence levels, risk assessment and application of decision rules. Yet it also found that the strong negative effects of *feeling bored* associated with decision-making competence can be overcome by leveraging one's personality traits, especially the learning aspect of openness. Both individuals and organizations can benefit from this finding.

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ADDENDUM: Pilot study findings for DVDs retained for the main study

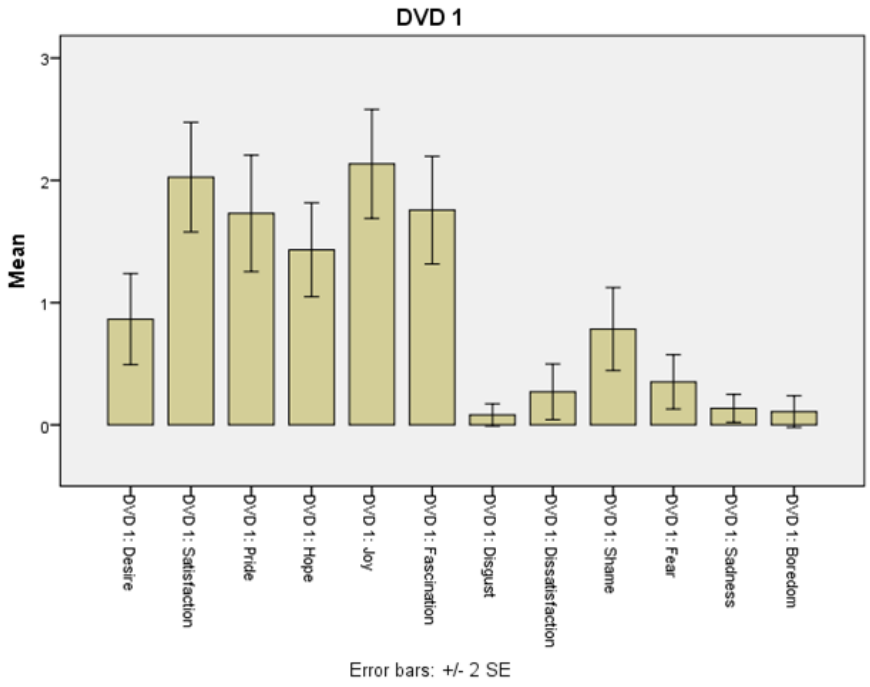

Figure A1: Responses to DVD 1 (Financially lucrative rush order requiring operational restructure)

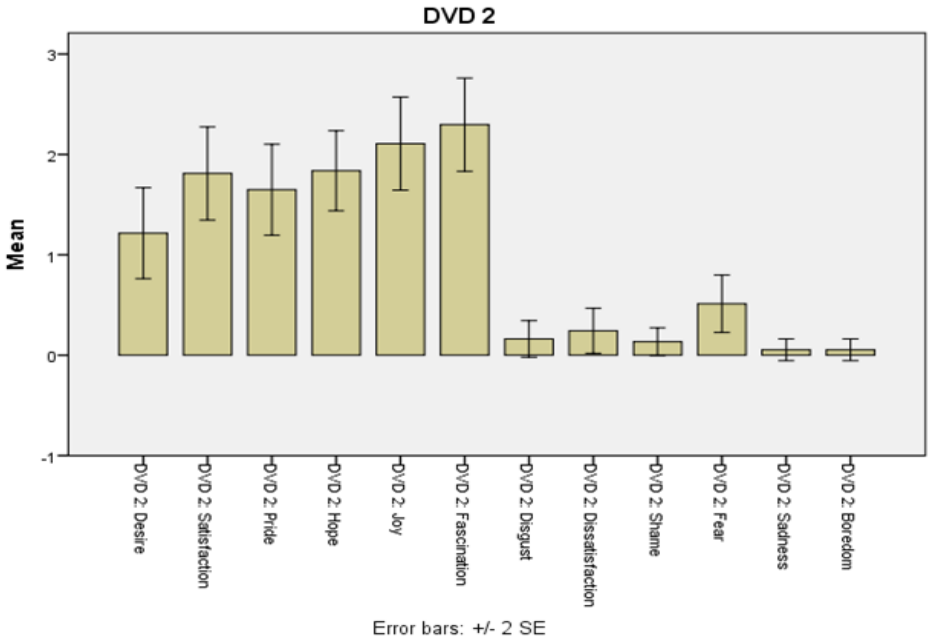

Figure A2: Responses to DVD 2 (Performance review with problem employee)

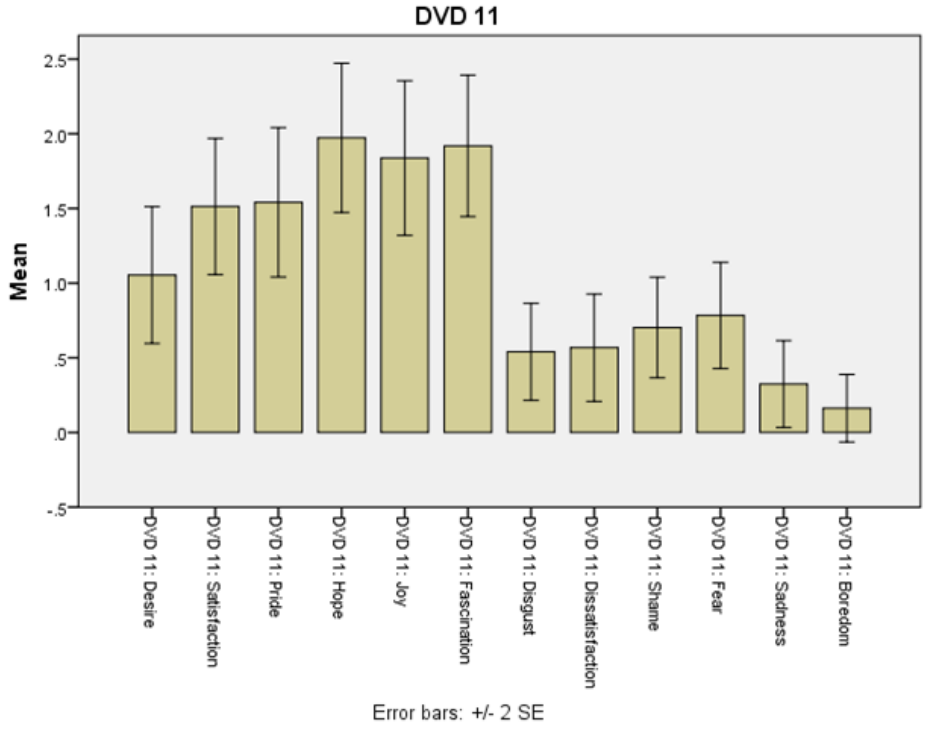

Figure A3: Responses to DVD 11 (Promotion offer tied to relocation)

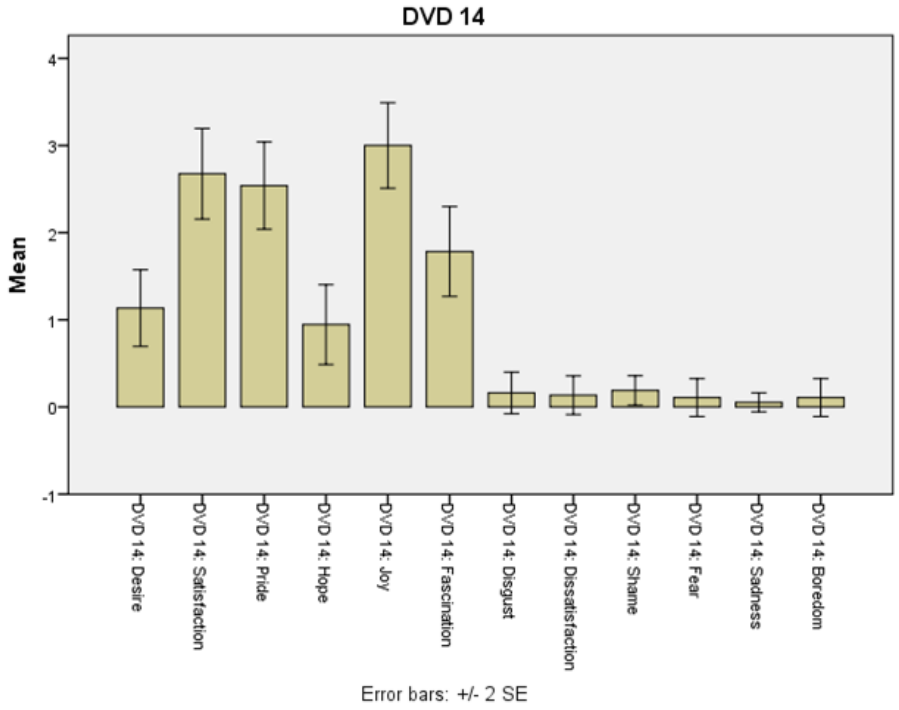

Figure A4: Responses to DVD 14 (Celebrating employee of the month)

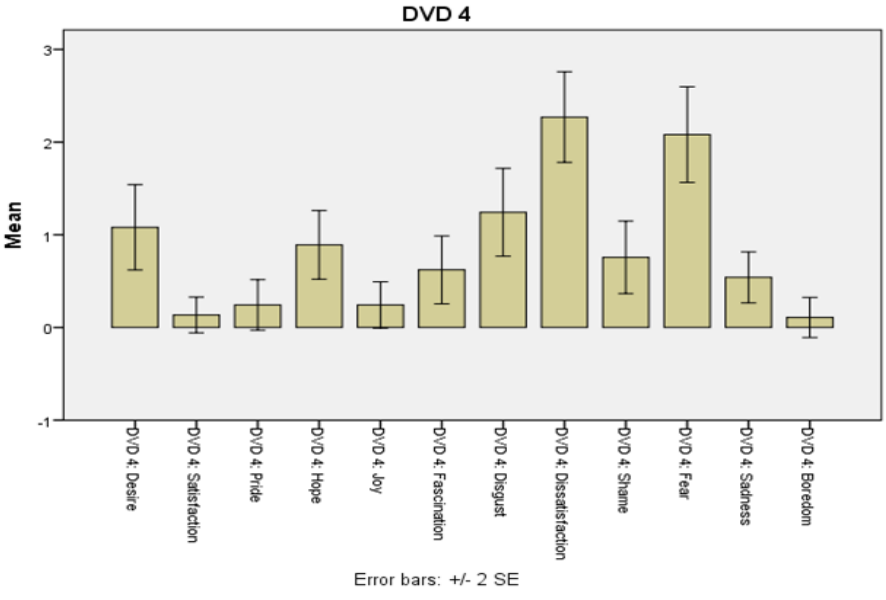

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Figure A5: Responses to DVD 4 (Performance review with high performer with anger issues)

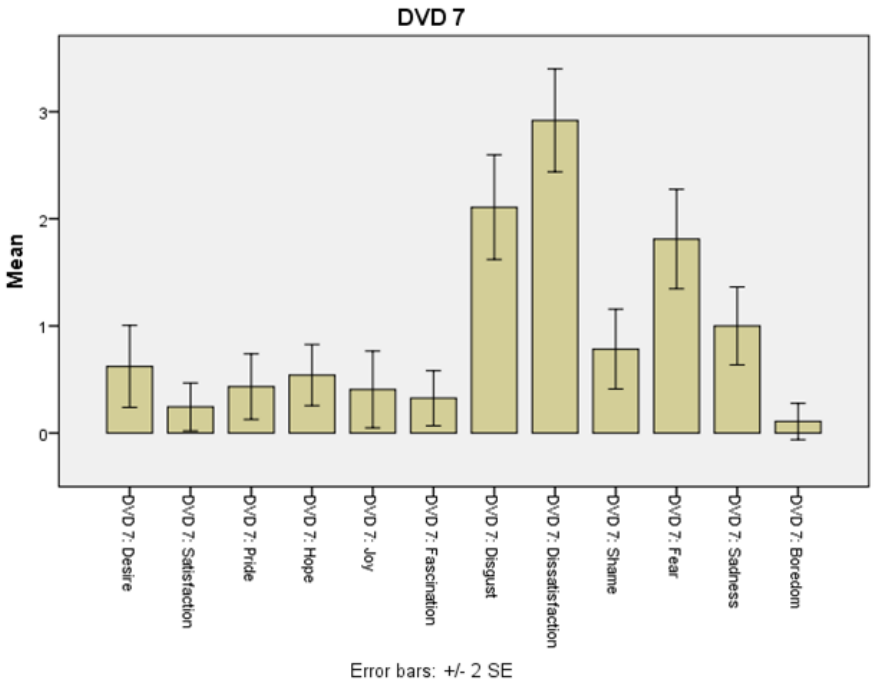

Figure A6: Responses to DVD 7 (Dealing with a broken promise of manager)

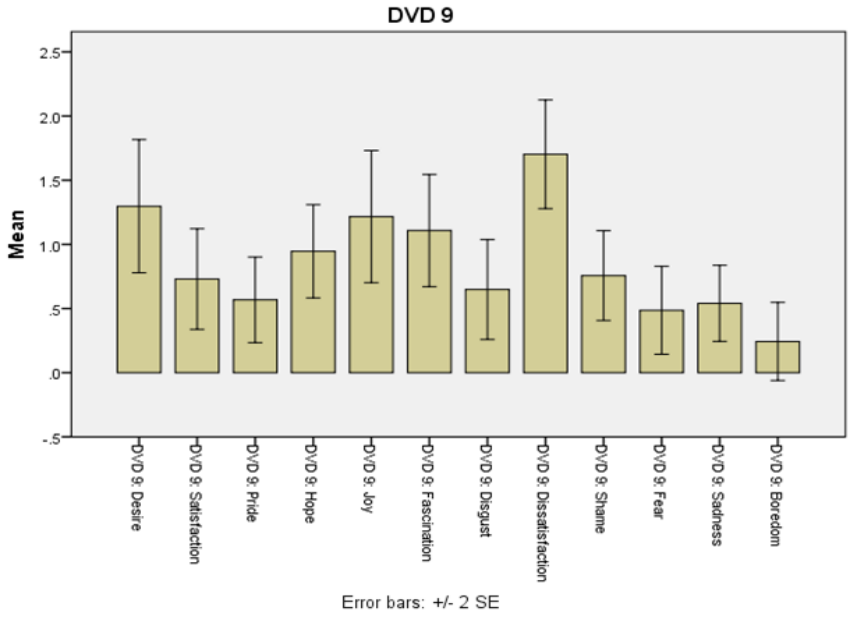

Figure A7: Responses to DVD 9 (Employee keeps talking about new ideas while manager is writing a report)