AN EXPLORATORY INVESTIGATION INTO THE MONEYMAX PROFILE AS PREDICTOR OF OPTIMAL FINANCIAL ATTITUDES AND BEHAVIOUR

by

Cindy Reneé Prinsloo

Thesis presented in partial fulfilment of the requirements for the degree of Master of Commerce (Industrial Psychology) in the Faculty of Economic and Management Sciences at the University of Stellenbosch

Supervisor: Prof Ronel du Preez

April 2014

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Cindy R Prinsloo

April 2014

ABSTRACT

Financial independence is what most people strive for; however, world trends indicate that it eludes the majority of the population. In South Africa, financial independence figures, especially at retirement, range disconcertingly between 6% and 10%. Numerous factors contribute to and influence financial independence, such as the current economic climate, personality characteristics and attitudes and behaviour. In an attempt to understand the complexity of the interplay between finance and psychology, this research explores a commercial product, the Moneymax Profile (MMP), and endeavours to relate it to scientific literature that will contribute to the understanding of how personality characteristics and attitudes and behaviours toward money will influence financial independence.

An *ex post facto* correlational research design was employed in this exploratory quantitative study (n = 67). The Financial Independence Scale (FIScale) was constructed for the purposes of the study. The concept of optimal financial attitudes and behaviour (OFAB) was developed and defined as *measurable attitudes and behaviour that maximise the likelihood that individuals will experience financial security or independence.* OFAB was measured by subscales of personality (locus of control, Type A/B personality, time orientation) and financial attitudes and behaviour (for example budgeting, social referents, financial discipline, control of investments).

Results indicated that locus of control, time orientation, budgeting, social referents and control of investment were reliable measures of OFAB. The Moneymax traits with a moderate correlation that contributed significantly to OFAB were *pride, emotionality, confidence, contentment, spending* and *trust*. The traits of *involvement, power* and *risk taking* were significant, but the relationship with OFAB was weak. The remaining traits of *altruism, work ethic, self-determination* and *reflectivity* held little statistical value. The principle contributors to an individual's financial habits and current status were noted to be education level, unexpected circumstances and trusting others.

The lack of available psychometric properties for the MMP and the small sample were major limitations of this study. The disciplines of economics and psychology would do well to continue working together in an effort to comprehend money and money personality.

OPSOMMING

Finansiële onafhanklikheid is ‘n stand van sake waarna meeste individue streef. Wêreldwyd word hierdie nie vir die oorgrote mederheid behaal nie. In Suid-Afrika blyk die getal vir finansiële onafhanklikheid slegs 6% tot 10% te wees. Faktore soos die huidige ekonomiese klimaat, persoonlike eienskappe, gesindheid en gedrag word as bydraende faktore beskou. ‘n Poging word aangewend om die komplekse interaksie tussen finansies en sielkunde te ondersoek en dit deur middel van ‘n kommersiele produk, Moneymax Profile (MMP), en onderneem om wetenskaplike literatuur te gebruik om vas te stel wat se komponente van persoonlikheid, gesindheid en gedrag nodig is vir ‘n individu om finansiëel onafhanklik te kan wees.

‘n *Ex post facto* korrelasie navorsingsontwerp word in die kwantitatiewe navorsingstudie (n = 67) gebruik. Die Financial Independence Scale (FIScale) was vir die navorsing ontwikkel. Die konsep van optimale gesindheid en gedrag (OFAB) word voorgelê en word as volg gedefinieer: *meetbare gesindheid en gedrag wat ‘n individu se waarskynlikheid vergroot om finansiele sekuriteit en onafhanklikheid te beleef*. OFAB was gemeet deur subskale van persoonlikheidseienskappe (lokus van kontrole, Tipe A/B persoonlikheid, tydorienteering) en finansiële gedrag en gesindheid (byvoorbeeld begrotings, sosialegroepsdruk, finansiële disipline, beleggingsbestuur).

Resultate wys dat lokus van kontrole, tydorienteering, begrotings optrek, sosialegroepsdruk, en beleggingsbestuur geldige metings van OFAB was. Die Moneymax trekke wat beduidend en matige verwantskappe het met OFAB was *trots, emosienaliteit*, *sekerheid, tevredenheid, besteeding* en *vertroue*. Die trekke van *betrokkenheid, mag* en *risiko* was beduidend maar die korrelasie was swak. Die oorblywende trekke van *altruïsme, werksetiek, selfbeskikking* en *oordenking* hou weinig statistiese waarde. Faktore wat bydra tot ‘n individu se finansiëlegedrag en huidige finansiëlestatus is opvoedkundevlak, onbeplande omstandighede en om andere te vertrou.

Die gebrek aan psigometriese eienskappe van die MMP het die studie gekniehalter. Die dissiplines van die ekonomie en sielkunde word aangemoedig om geld en geldpersoonlikheid verder te verken.

DEDICATION

This work is dedicated to:

My husband, Buks Prinsloo, for his love (224433) and patience.

My parents, Mike and Urma Williams, for being my number one fans.

ACKNOWLEDGEMENTS

I would like to extend my gratitude and thanks to numerous individuals for, without them, this project would not have been possible:

My supervisor Prof Ronel du Preez; it was truly an academic ultra-marathon.

Prof Martin Kidd for statistical assistance to the umpteenth power.

Elizabeth Robinson and Desray J. Britz (CEO) of Language Online Editing (www.languageonline.co.za) for editing those clumsy sentences and supplying a template to tidy the formatting.

Servaas de Kock for his positive attitude and encouragement from day one.

… And finally I ask myself why I did it? The only plausible answer is: “because”.

TABLE OF CONTENTS

Contents **Page**

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

5C	Five Clusters
ANOVA	Analysis of variance
BTAS	Bortner Type A Scale
CFPL	Centre for Financial Planning Law
FIScale	Financial Independence Scale
IPS	Investment Psychology Solutions
JAS	Jenkins Activity Survey
LSM	Living Standard Measure
MAS	Money Attitude Scale
MBBS	Money Beliefs and Behavior Scale
MES	Money Ethic Scale
MM	Moneymax
MMP	Moneymax Profile
MoMot	Money Motivators
MSS	Money Sanity Scale
OFAB	Optimal Financial Attitudes and Behaviour
UK	United Kingdom
US	United States

LIST OF APPENDICES

CHAPTER 1 : INTRODUCTION

1.1 Introduction

Few South Africans can afford to retire. Experts estimate that approximately 6% to 10% of the general population has made adequate provision in order to retire and be financially independent (Cranston, 2010; Field, 2007; *Retirement*, 2013; Swart, 2003). In the United Kingdom (UK), virtually half of all workers will have inadequate or no retirement income outside the state pension (Kane, 2008). Economic models alone are deficient in explaining these low retirement readiness percentages, resulting in the need to investigate personal variables as contributors to why and how individuals interact with financial matters (Furnham & Okamura, 1999).

Money behaviour and consumer decisions are not rational (Pine & Fletcher, 2011; Rose & Orr, 2007; Sjöberg & Engelberg, 2009; Ziv 2007) but rather governed by emotional factors, which Forman (1987), a pioneer in connecting money and psychology, refers to as “powerful and often unrecognized emotional forces” (p. 2028). Kuzmina (2010) agrees, stating that financial decisions are not merely rational economic decisions and that emotions are involved. Rationality is, according to De Torre (2005), acting not on the impulse of emotion but being guided by the judgments of the mind. Holden (2002) and Van Zyl (2003) referred to the 2002 Nobel Prize winners for economics, Daniel Kahneman (his research related mainly to prospect theory developed together with his colleague Tversky (Kahneman & Tversky, 1979)) and Vernon Smith (for groundwork in economic and market wind tunnels experiments (Smith, 1962)) who noted in their respective research that people seldom make rational money decisions but rather tend to use emotions and personality traits in those decisions. Antonides (1989), Handgraaf and Van Raaij (2005), Lunt (1996) and Zhang (2009) noted that it is this point of rationality that largely divides the opinions of economists and psychologists. Zhang stated that his theory (italics included) “bridges research in psychology and findings in economics … *because* … standard economic theories often assume that money maximization is the benchmark of rational decisions. However, people behave in ways that run counter to the goal of maximizing money” (p. 66). A pure economic argument would only consider rationale; however, it is too simplistic. Therefore, emotions are and have to be considered for their moderating or mediating effect in determining individuals' attitudes and behaviour toward money. Most encouraging is that Antonides (1989) as well as Handgraaf and Van Raaij (2005) reiterated that the two research fields (economics and psychology) are increasing their understanding and acceptance of each other.

Psychographic constructs such as values, lifestyle and personality are "under-researched" in relation to financial management and could contribute significantly to the understanding of financial behaviour (Huhmann & McQuitty, 2009, p. 279). According to Grable (2000), achieving financial independence is elucidated by personality characteristics (for example Type A personality) and partly explained by socio-economic background. Socio-economic status is used here to equate to class or economic position and not social status or prestige (Bradley & Corwyn, 2002). Two of the most important factors of socio-economic status are education (own or parental) and income (own or family). Another is occupational status, and both education and income have historically been at low levels for the majority of South Africans (Bradley & Corwyn, 2002; "Education", 2013; Landau, 1995; Zuma, 2013). Despite varying socio-economic backgrounds, the national level of savings and investment is deemed inadequate to support individual financial security and sustained economic growth (*Financial Sector Charter*, 2002; Manuel, 2011). Money management transcends socio-economic status (Into, 2003), and money attitude is essentially independent of personal income, according to Furnham (1984), a forerunner of the theory relating to money attitude. If socio-economic background does not adequately explain financial success, security and independence, then, according to Grable (2000), it leaves personality characteristics to play a significant role.

Personality characteristics and attitudes that are beneficial for financial independence or "retirement readiness" (Ellen, Wiener & Bone, 2007, p. 67) include internal locus of control, Type A personality, time orientation, comfort with risk, achievement orientation, conscientiousness, materialism, impulsiveness/control, low anxiety and emotionality and delayed gratification (Carducci & Wong, 1998; Gibbs, 1998; Loix, Pepermans, Mentens, Goedee & Jegers, 2005; Tang, 1992). In addition, specific financial behaviour, such as saving, investment, budgeting, retirement planning, and utilising credit but not being indebted, further benefits financial independence (Centre for Financial Planning Law (CFPL), 2006; FinMark Trust, 2004; Hershey, Walsh, Brougham, Carter & Farrell, 1998; Staffer, 2007; Webley & Nyhus, 2001). Collectively and for the purposes of this study, these beneficial behaviours, characteristics and attitudes will be referred to as optimal financial attitudes and behaviour (OFAB). OFAB is defined as measurable attitudes toward financial matters as influenced by, for example the personality traits of locus of control, Type A/B personality and time orientation, and behaviour (a measurable response toward an object) that maximise the likelihood that individuals will experience financial independence or security. Financial independence, also referred to by Gregg (1992) as a wealth-span, is the condition where an individual lives comfortably, maintaining full financial functions up to, or as near as possible to, the end of life, covering expected and unexpected expenses, without the assistance of an outside party.

Personality theories are numerous, yet none of the traditional theories have successfully explained financial behaviour, resulting in initial attempts (mostly by commercial enterprises) to use or apply personality constructs to explain behaviour towards money. Furnham and Okamura (1999) reasoned that attitudes and behaviour associated with money have been a neglected and under-researched topic because of the "dearth (of) … psychometricized instruments, specifically questionnaires" (p. 1157). They thereby implied that research was scientifically weak and non-coherent. They, together with and Rose and Orr (2007), further provided an extensive list of money attitude or personality instruments, some of which have undergone rigorous scientific scrutiny and some have not. Over time, researchers combined personality and financial theory which led to the concept of money personality.

Gurney (1988) used personality traits to construct a commercial product, the Moneymax Profile (MMP), to enhance the understanding of money attitudes and behaviour. The MMP questionnaire categorises individuals into a descriptive money personality, each consisting of a configuration of money traits. Moneymax (MM) traits refer to 13 traits that through a unique configuration form a MM personality. Nine MM personalities could be formed. Du Preez (2005) stressed the importance of knowing one's money personality. Firstly, insights into monetary decisions may assist in understanding past successes or failures. Secondly, individuals are more realistic about goal setting and more aware of their strengths and weaknesses with regard to the management of money. Thirdly, this knowledge empowers individuals to make better choices with regard to financial advisers that match their needs. Finally, it provides opportunities to work at changing habits and attitudes that are detrimental to financial success.

Money personality is a component of the broader study area of financial psychology. According to Gallo (2001), *money personality* is a collection of qualities that govern how one thinks, acts and feels with regard to money. Linder (2005) defined money personality as an individual's preferred pattern of financial behaviour, while Gurney (1988) stated that money personality is "a particular set of money attitudes and behaviors" (p. 279). Money personality is characterised by a number of money traits and is thought to predict beneficial or detrimental financial behaviour. *Financial psychology* is utilising the principles of psychology in the understanding and management of money (Shane, 2003). Stated differently, financial psychology involves the attempt to understand the role of emotions that motivate and impair, and their corresponding behaviour, on financial decision making (Anthes & Lee, 2001). Kahneman (2003), citing numerous authored and co-authored publications (Kahneman, 1994, 2000; Kahnman & Fredericks, 2002; Kahneman & Lovalla, 1993; Kahneman & Tversky 1973, 1979, 2000; Tversky & Kahneman, 1974, 1981, 1983, 1986, 1991, 1992) and Smith (1962) are said to have laid the foundation for two new research fields, namely economic psychology and experimental economics, both related to financial psychology (Holden, 2002; National Endowment for Financial Education, 2006; Van Zyl, 2003). Handgraaf and Van Raaij (2005) are of the opinion that Kahneman's contribution has redefined financial psychology and, by implication, money personality as a legitimate research area. Shiller (2003) wrote of the collaboration between finance and other social sciences resulting in behavioural finance.

Until recently, economists who study economic phenomena have focused on money first and only turned their attention to human behaviour when developing models based on large-group activities (Hadnot, 2003). Hadnot further stated that psychologists and psychotherapists study human behaviour first, and money thereafter, but only when it involves abnormal behaviour, such as compulsive gambling. Both Lunt (1996) and Antonides (1996) concluded that economists now acknowledge the relevance of psychology and psychologists are drawing from economic psychological models of behaviour for psychology. Anthes and Lee (2001) argued that money (economics) and emotions (psychology) are at the root of financial psychology and that the disciplines of economics and psychology can contribute to the understanding of financial behaviour.

While theory and empirical evidence on money personality and financial psychology are still evolving, the South African dilemma of not being able to afford to retire continues. If 6% to 10% of the population make adequate retirement provision, then by implication, 90% to 94% do not make adequate provision in order to retire and be financially independent. Field (2007) reported nine out of every 100 South Africans or “less than one in 10” (Whitfield, 2011, p. 13) make adequate retirement provision. These figures are disturbing for the economy because Field further stated that 34% need to continue working after retirement (24%-35%; Old Mutual, 2013), 32% are cared for by the State, 17% are dependent on their families (37% partially dependant on families; Old Mutual) and 8% are supported by welfare.

In South Africa, the government provides the older persons grant, previously known as old age pension, from the age of 60 years for both men and women (South African Government Services, 2013). Men’s retirement age recently decreased from 65 to 60 years (Whitfield, 2011). Yet, Flynn (2010) stated that globally both governments and employers are encouraging employees to remain at work, with legislative changes proposing official retirement ages of 67, 68 and 70 in the United States (US), Britain and other European countries respectively, by the year 2040. Canada abolished a mandatory retirement age in 2009 (Warren & Kelloway, 2010), and in the United Kingdom (UK), the state pension age for women began moving in stages from 60 to 65 in 2010 (Economist Intelligence Unit NA, 2012). South Africa has not followed these international trends, making it essential to increase the number of financially independent South Africans to alleviate the burden on alternative support mechanisms.

It has already been established that socio-economic circumstances alone do not explain an individual’s financial independence. Therefore, this research begins to explore personality traits, in the form of the Moneymax Profile (MMP), together with financial attitudes and behaviours which are believed to be optimal. The value of this study lies in its being a first attempt to develop an index of optimal financial attitudes and behaviour (OFAB). Furthermore, if the MMP is shown to predict OFAB, then its commercial value could increase for individuals or possibly for the South African financial industry. An individual who is noted not to exhibit OFAB could possibly be exposed to early interventions to improve both attitude and behaviour and hence be a citizen who can afford to retire one day.

1.2 Research Objectives

The current exploratory study considers a South African scenario of financial behaviour and attitude, which enhances or inhibits an individual's ability to be financially independent now and, more importantly, later in life. The research question driving the study is as follows: Can Moneymax traits, as represented in the Moneymax personalities of the Moneymax Profile, predict optimal financial attitudes and behaviour? By considering personality, money personality and beneficial financial attitudes and behaviour, a profile can be drawn of an individual who is more likely to be financially independent, as opposed to someone who is less likely to be financially independent, thus providing opportunities for development.

The specific literature objectives for this study include the following:

1. To introduce and describe the Moneymax traits;
2. To investigate traits and personality that relate to financial concepts;
3. To investigate the transition from traits to money traits, and personality to money personality, including instruments that measure money traits and money personality;
4. To describe the Moneymax personalities;

5. To define optimal financial attitudes and behaviour and then consider if personality and behaviour enable (are beneficial to) or inhibit (are detrimental to) it; and

6. To single out Moneymax traits that, by their definition, might be related to optimal financial attitudes and behaviour.

The empirical objectives of the study include the following:

1. To determine the current financial behaviour patterns and attitudes of the sample through the use of the Financial Independence Scale (FIScale);

2. To determine the personality traits of the sample by means of standardised and modified psychometric instruments, namely Utsch and Rauch's locus of control, Robbins' adapted Bortner Type A Scale (BTAS) and Yamauchi and Templer's retention-time section from the Money Attitude Scale (MAS);

3. To identify the main antecedents to the financial attitudes and behaviour of the sample;

4. To investigate the relationship between Moneymax traits and optimal financial attitudes and behaviour; and

5. To present recommendations for future research.

1.3 Concluding Remarks: Chapter 1

The thesis will be presented in a five-chapter format. Chapter 1 provided the motivation and goals of the study. It introduced the concepts of money personality and money traits and argued the importance of research in the domain of money personality. The exploratory nature of the research and the subsequent objectives for the study were stated. Chapter 2 contains the theoretical framework (literature review) as it relates to personality, money personality and financial attitudes and behaviour. Chapter 3 comprises the research design and methodology, supplying details of the sample, measuring instruments and statistical analysis. The results and discussion will follow in Chapter 4, and limitations, recommendations and implications will be presented in Chapter 5.

CHAPTER 2 : REVIEW OF LITERATURE

2.1 Introduction

Chapter 1 introduced the problem that South Africans are not sufficiently financially prepared for retirement and the need to investigate variables that affect optimal financial attitudes and behaviour (OFAB). In Chapter 2, the focus turns to variables that could influence OFAB, namely personality traits, Moneymax traits and money attitudes. The focus of the literature review then moves to personality and the transition from personality to money personality (and the measurement thereof). The literature review culminates in the development of a partial model of antecedents for optimal financial attitudes and behaviour.

2.2 Personality Traits

As early as the fifth century BC, the Greek physician Hippocrates postulated that the amount of a particular body fluid, for example bile or phlegm, affected how quickly and strongly a person's emotions, or temperament, were aroused. According to Edwards (1999), Hippocrates labelled the temperaments melancholic (withdrawn, unhappy), sanguine (cheerful, outgoing, calm), choleric (irritable, grumpy, loud) and phlegmatic (quiet, placid and unemotional). In the late 1800s, Wilhelm Wundt expounded this concept of temperaments and referred to it as trait dimensions. A more modern understanding of temperament is the general behavioural dispositions (mood related with an activity level), present since infancy, that are influential in the way a person reacts (emotional reactivity) to the environment (Atkinson, Atkinson, Smith, Bem, & Hilgard, 1990; Cullis, Dolan & Groves, 1999; Weiten, 2000).

Edwards (1999) points out that in 1937 Allport, and then Eysenck in 1970 identified and labelled traits. Allport (1937) defined a trait as "a generalized and focalized neuropsychic system (peculiar to the individual), with the capacity to render many stimuli functionally equivalent, and to initiate and guide consistent (equivalent) forms of adaptive and expressive behavior" (p. 295). Other authors have defined a trait as (a) an enduring characteristic that describes an individual's behaviour, (b) a feature or distinguishable quality, (c) a descriptive characteristic of an individual, assumed to be stable across situations, (d) a relatively stable and enduring aspect of personality, and (e) a representation of the characteristic and consistent way that an individual responds across a variety of situations, at various times (Bergh, 2003b; Buss, 1989; Cullis et al., 1999; Mackenzie, 1974; Pervin & John (as cited in Bergh, 2003c); Robbins, 1993; Wade & Tavris, 1993). For the purposes of this study, traits are defined as descriptive, stable characteristics, which collectively form the individual's personality.

Buss (2012) argued that the development of personality is related to particular age stadia with the traits of emotionality, activity, sociability, impulsiveness and sensation seeking taking precedence in infancy (0 to 2 years). During preschool (2 to 5 years) the traits of activity, sensation seeking, aggressiveness, dominance, impulsiveness, assertiveness, public self-consciousness and identity are apparent. Ages 5 to 12 (elementary school) are indicative of gender identity, impulsiveness, competitiveness, aggressiveness and self-consciousness. The personality traits that develop during adolescence are self-consciousness, shyness, aggressiveness or hostility, dominance and assertiveness. Buss concluded that together with these traits, inherited traits (temperament) such as emotionality, activity, impulsiveness and sociability form an individual's personality.

Personality type or style is a combination of traits, also referred to as attributes or factors (Bergh, 2003c). Similar traits are routinely grouped together, through factor analysis, to form higher order dimensions or factors. A personality is thus a profile of higher and lower order factors and not an average score across different traits (Ones, Viswesvaran & Dilchert, 2005). Various examples of such groupings exist such as Cattell's 16-Personality Factor Questionnaire (Bergh, 2003c), the Eysenck Personality Questionnaire's three-factor model of extroversion-introversion, neuroticsm-stability and psychoticism-superego (Arnold, Cooper & Robertson, 1998; Cullis et al., 1999; Eysenck, 1992), and the Big Five or five-factor model (extraversion, neuroticism, openness to experience, agreeableness and conscientiousness) which has attracted much attention in the understanding of personality (Arnold et al., 1998; Barrick, Mount & Judge, 2001; Bergh, 2003c; Murphy & Dzieweczynski, 2005; Ones et al., 2005; Van der Bank & Rothmann, 2002).

The most widely accepted definition of personality is that of Gordon Allport (Bergh, 2003b; Robbins, 1993). Allport (1937) defined personality as “the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment” (p. 48). Mischel (2004) defined personality as having distinctive patterns of behaviour (both in thought and emotion) that characterise an individual’s ability to adapt to the situations in life. Others considered the sum total of ways in which an individual reacts and then interacts with others (Robbins, 1993), and they find that it is relatively enduring and stable (Bergh, 2003b). For the purposes of this study, personality will be defined in line with Cattell’s (1965) broad definition: “that which people will do, think or say when placed in a specific or given situation” (p. 25). Psychologists appear to agree that personality is adequately explained only when the interaction between the characteristics or traits of a person and the situation or environment is considered (Bergh, 2003b).

Personality theories provide the constructs, concepts, methods and applications to explain, describe, predict and influence behaviour (Bergh, 2003b). Meyer, Moore and Viljoen (1990) noted more than 30 personality theories worldwide and attempted to formulate groupings of the theories. One of these groupings is for trait, type or dimension theories. In trait theories, according to Bergh (2003c), personality is determined through both biological and environmental factors, while Robbins (1993) added a third factor, situational conditions, as a moderator in adult personality. It is proposed that the principles of trait theories (biological, environmental and situational factors separately or collectively) be utilised to better understand Moneymax traits and MM personality in the current study.

Numerous authors have identified personality characteristics and attitudes that are beneficial for financial independence or “retirement readiness”. These included internal locus of control, Type A personality, time orientation, comfort with risk, achievement orientation, self-esteem, conscientiousness, materialism, impulsiveness versus control, low anxiety and emotionality, and delayed gratification (Carducci & Wong, 1998; Ellen et al., 2007, p. 67; Gibbs, 1998; Loix et al., 2005; Tang, 1992; Weldon, 2005). Risk tolerance is a key feature in financial attitudes and planning, according to Callan and Johnson (2002), with much empirical research completed on the subject. Koh (2008) directly linked willingness to take risk and desire to create wealth to her money personalities (hoarder, achiever, entrepreneur and thrill-seeker).

For the purposes of this study, the focus is on personality traits that are considered by authors such as Stone and Maury (2006) and Wang, Lu and Malhotra (2011) to be contributory to the understanding of money traits and financial behaviour. The traits are locus of control, Type A/B personality and time orientation, which includes, inter alia, the ability or inability to delay gratification. These traits will be discussed in full in the ensuing sections together with a brief reference to other personality traits that could further enhance the understanding of personality in relation to financial behaviour.

2.2.1 Locus of control

Originally Rotter (1954), then Carlisle-Frank (1991), Robbins (1993), Landau (1995), Edwards (1999) and later Reber and Reber (2001) defined locus of control as the belief or expectation that a person's outcome or reinforcement is either due to skill or personal control (internal locus of control) as opposed to outside factors such as luck, fate or a matter of chance (external locus of control). Edwards explained that those with internal locus of control expect that their responses to everyday situations will make a difference to the outcome, while those with external locus of control expect their response to be ineffectual. In support of this view, Liebert and Spiegler (1990) stated that those with internal locus of control actively seek information relevant to their plans, co-operate with others, resist social pressure to conform and have good coping skills. In contrast, those with external locus of control feel frustrated and blame others when things go wrong and are less self-directed. An opposing view is expressed by Rodriguez (2001), who in a study regarding an ideal profile for entrepreneurial success, did not find locus of control to have a significant relationship with performance outcomes. Entrepreneurial success is assumed by the researcher to equate to financial success.

Control as a means to influence the outcome (a characteristic of internal locus of control) deserves further attention. This is in opposition to luck (as a *counter-concept* of control and a characteristic of external locus of control; Flammer, 1995). Carlisle-Frank (1991) noted four domains of control that can shift in terms of importance throughout one's life span: (a) institutional, which refers to interaction with the job market, banking systems, utility companies and so forth, (b) personal achievement or goal attainment such as improving educational level, achieving financial success, attaining specific physical strength levels, (c) interpersonal relationships with friends, family, landlord, bosses and so forth, and (d) personal health habits such as weight control, alcohol consumption, stress and illness. Carlisle-Frank's research focused on control of goal attainment and health habits, although she suggested that any or all four domains could be contributory to the understanding of control-related behaviour.

It could be argued that the first three areas of control, but especially personal achievement or goal attainment, could assist in establishing internal locus of control as a predictor of financial success. Tang (1992) and Huhmann and McQuitty (2009) proposed that locus of control and work ethic relate to money, and according to Tokunaga (1993), the foundation of successful financial management lies in the achievement of control. Webley and Nyhus (2001) discouraged the reliance on luck, fate or chance that is more indicative of external locus of control. Internal locus of control is advisable, where skill or personal control is taken advantage of. Investment, a positive financial behaviour, could however be derailed by an individual wishing to execute excessive control (internal locus of control) or one who displays inappropriate emotionality, low self-confidence or financial impulsivity (Gurney & Srybnik, 2001). Zhang (2009) and Stone and Maury (2006) identified from the work of various authors, that locus of control and self-efficacy, self-esteem, attitude towards money, decision making and sensation seeking all influence financial indebtedness and mismanagement.

2.2.2 Type A and Type B personalities

Type A personalities are hard-driven, unable to relax and competitive and exhibit tendencies of hostility and aggressiveness with heightened or an unrealistic sense of time urgency and impatience (Carducci & Wong, 1998; Edwards, 1999; Norton, 1999; Weiten, 2000). Type A personalities emphasise quantity and not quality of output, need be to in control and are reluctant to evaluate themselves (Morris, 1988; Reber & Reber, 2001). Robbins (1993) summarised Type A personalities as constantly moving, walking or eating rapidly, impatient with the rate of events, striving to do more than one task at a time, having an inability to cope with leisure time and an obsession with numbers and measuring their success.

Robbins (1993), Edwards (1999), Norton (1999) and Weiten (2000) described Type B behaviour as that displayed by people with no sense of time urgency and its associated impatience and with no need to display or discuss achievements or accomplishments. Type B personalities are those who can work without agitation and play for fun and relaxation, with no need for competitive displays, and who have the ability to relax guilt-free and have fun. Personalities displaying Type B behaviour focus on quality and not quantity and are self-reflective (Morris, 1988; Reber & Reber, 2001). Type B behaviour is thus essentially the opposite of Type A behaviour.

Gist and Mitchell (1992) referred to work by Taylor stating that Type A personalities exhibit higher self-efficacy and performance levels than Type B personalities. Carducci and Wong (1998) concluded that Type A personalities are greater risk takers than Type B personalities and exhibit generally positive financial behaviours. Maxfield, Shapiro, Gupta and Hass (2010) concurred that high self-efficacy and performance are positively correlated and include risk taking in the equation. Carducci and Wong together with Grable (2000), described Type A individuals as being more financially successful (their study included a factor for the effect of socio-economic background); however the unrealistic sense of time urgency for Type A personalities may conflict with time orientation, unless the urgency is to plan for the future.

Brislin and Kim (2003) considered countries that have a fast-paced lifestyle as typified by Type A behaviour. The countries are Switzerland, Germany, Ireland, England, United States of America and Japan. These countries report high economic productivity per capita. In contrast, El Salvador, Brazil, Indonesia and Mexico report a relatively low gross domestic product, and this is accompanied by a slower pace of life. It is surmised that the second group of countries could be typified by Type B behaviour. It could be postulated that South Africa may fall within the second group, considering Burgess' (2005) research within which South Africa, Mexico, Indonesia, Brazil, together with 11 other countries (China, India, Russian Federation, Philippines, Vietnam, Iran, Egypt, Turkey, Thailand, Columbia and Republic of Korea) are grouped as emergent economic markets. Strumpfer and Goudie (as cited in Edwards, 1999) and Norton (1999) noted that employers encourage Type A behaviour because of the belief that it translates into high performance, but Strumpfer and Goudie found that a reduction of Type A behaviour does not significantly reduce the business performance of already high-level staff. Again, it is postulated that the South African sample could lean toward Type B behaviour.

2.2.3 Time orientation and delayed gratification

Time orientation and delayed gratification are discussed simultaneously because of their close relationship. Bjornebekk and Gjesme (2009) stated that if an individual lacks capacity to delay gratification, there is impairment in planning and anticipation, both of which are essential in time orientation, specifically future time orientation. People can either be present-time oriented where they do not plan but rather look at the short term or immediate time in contrast with future-time or long-term orientated where they tend to plan ahead and look to the longer term or future (Amyx & Mowen, 1995; Nevins, Bearden & Money, 2007). A future-time orientated person would typically accept, endure or even welcome losses in the present (for example, save money or pay a premium, which reduces current disposable income) and be prepared to delay gains if it were in the best interest of a long-term expectation (for example, having greater disposable income or a retirement policy at retirement; Gibbs, 1998). These people have the self-control to delay gratification. They are prepared to wait or put off current expenditure until such time as sufficient funds are available and then acquire the good or service.

Conversely, a present-orientated person is less likely to delay gratification and is thus more likely to use credit, possibly going into debt, in order to satisfy wants immediately (Webley & Nyhus, 2001). Reber and Reber (2001) defined gratification as a state of satisfaction after achieving a desired goal; therefore, delayed or postponed gratification would mean still achieving the goal but at some future date. Christopher, Zabel and Jones (2008) stated that “delay of gratification is the desire to postpone immediate rewards for future, larger rewards” (p. 190), and Mischel (1986) referred to it as “the ability to voluntarily refuse immediate gratification, to tolerate self-imposed delays of reward” (p. 414). To use credit or become indebted (because liquid funds are not readily available) in order to purchase an item or satisfy a pleasure now as opposed to later would be considered immediate gratification.

Hawkins, Mothersbaugh and Best (2007) mentioned that using credit (i.e., going into debt) as opposed to making efforts to save for later spending is viewed as living beyond one's means in countries such as Germany and the Netherlands. The word *Schuld* in German and *skuld* in Afrikaans for *debt* is a synonym for *fault, guilt* or *culpability*, thereby emphasising the negative attitude toward immediate gratification (Du Plessis, 2005; Eksteen, 1986; *Pocket Oxford-Duden*, 2000).

Kirby and Marakovic (1996) coined the term *delay discounting* and defined it as meaning a reward's present (or current) value will decrease as the delay for that reward increases (p. 100). Reimers, Maylor, Stewart and Chater (2009) and Daugherty and Brase (2010) used the term *delay discounting* instead of gratification. Their respective definitions of the term come across as contradictory to each other, yet eventually appear alike. Reimers et al. claimed that, in general, people prefer to receive a pleasant outcome sooner rather than later and are willing to accept a smaller reward now so that the wait (or delay) can be shortened (discounted): "High levels of delay discounting are a form of financial impulsivity, a preference for immediate gratification over long-term financial benefits" (p. 373). Present-time orientated people typically wish to advance or hasten a gain and will delay a loss, if it is associated with immediate gratification. The contradiction is seen when Daugherty and Brase defined delay discounting as the willingness to postpone receiving an immediate reward in order to obtain additional benefits in the future. Daugherty and Brase (2010, p. 203) used the term *steep delay discounting* to indicate preferring immediate rewards as opposed to delaying them. Their term *shallow delay discounting* entails a future-minded approach where later rewards are preferred.

When this self-control is excessively future orientated, Huhmann and McQuitty (2009) referred to it as *hyperopic self-control*. When the converse is true and a person succumbs to impulse purchases for immediate or present satisfaction, to the detriment of future satisfaction, this is referred to as *myopic self-control*. Furthermore, present-time orientation is accompanied by impulsivity, inability to delay gratification, lack of goal orientation or planning, lack of self-control, lower social status, lower education and pleasure experienced or emotional responses while spending money (Amyx & Mowen, 1995; Livingstone & Lunt, 1992; Norvilitis et al., 2006; O'Guinn & Faber, 1989; Troisi, Christopher & Marek, 2006). Research reported by Greene and DeBacker (2004) and Bowles (2008) could not clearly identify gender differences with regard to time orientation. However, women appeared to be slightly more future-orientated than men. Reimers et al. (2009) reported gender differences in relation to delayed gratification or discounting as unstable with no clear distinction.

2.2.4 Comfort with risk

Risk, defined in basic financial terms, is the chance of financial loss, or the chance that actual outcomes may differ from those expected, or the variability of returns associated with a given asset (Gitman, 1991). Reber and Reber's (2001) non-financial definition defined risk as an action that jeopardises something of value. Both these definitions make risk appear as a manifestation of negative behaviour. Risk tolerance, on the other hand, is the willingness and ability to accept the possibility of uncertain outcomes associated with one's financial decisions (Callan & Johnson, 2002) or the maximum amount of uncertainty someone is willing to accept in a financial decision (Grable, 2000). Risky behaviour is traditionally noted when an individual allocates more money to options with high possible returns and lower probability outcomes. Separate studies by Prince (1993) and Schubert, Brown, Gylser & Brachinger (1999) reported that women tend to be risk averse in the traditional financial measure or definition of risk. A calculated risk is likely to offer good returns on investment, which enhances an individual's ability to be financially independent after retirement.

Maxfield et al. (2010) noted that empirical research of risk and gender concentrates on (a) health and physical safety, (b) finance including investment, gambling and insurance, and (c) strategic decision making in professional work contexts. Olsen and Cox (2001), Maxfield et al. and Faff, Hallahan and McKenzie (2011) noted more than 30 authors whose findings indicate that women are more risk averse in certain circumstances than men and vice versa, but they added that it could stem from an orthodox belief that women are less able financial managers than men (Powell & Ansic, 1997). Powell and Ansic, however, remained cautious to generalise regarding gender and risk taking. Grable (2000) summarised various studies and reported that risk-tolerance increases among younger people, men, single persons, and people in professional occupations with high income and with education.

Soane and Chmiel (2005) cited various authors who have reported a positive relationship between risk, extraversion and openness and a negative relationship between risk and neuroticism, agreeableness and conscientiousness (five factor model). Conscientiousness is a positive trait to have for financial well-being; however, if high risk behaviour results in low conscientiousness, then lower risk is advocated so that, by implication, conscientiousness is increased. This, in turn, may indicate that the Type A personality characteristics involving risk should not be extreme, but moderate, for optimal financial attitudes and behaviour.

2.2.5 Achievement orientation

The achievement motive, as explained by Weiten (2000), is the need to master difficult challenges, to meet high standards of excellence and to out-perform others. There is a desire to excel especially in competition with others. McClelland (as cited in Weiten, 2000, p. 292) quoted achievement orientation to be the "spark that ignites economic growth, scientific progress, inspirational leadership and master pieces in the creative arts". In addition, Brown (as cited in Weiten, 2000) noted that with a higher achievement motivation, there is a tendency to work harder and more persistently at tasks. Elliot and Harackiewicz (1996, p. 472) supported the basic premise that the achievement motive is to excel. The authors noted that some individuals are not active or busy in order to pursue a positive outcome but rather they employ "vigorous action" and "active avoidance" to avoid negative consequences.

2.2.6 Self-esteem

The *Multilingual Glossary* (2007) stated that self-esteem is generally a measure of oneself compared to others, while Baumeister, Campbell, Krueger and Vohs (2003) simply defined it as how much value people place on themselves. To regard oneself in a positive light is considered high self-esteem while the opposite (not having high self-value) is low self-esteem. Campbell (1990) and Rosenberg (1986) defined self-esteem as a global judgement of worthiness, formed in early childhood and remaining fairly constant over time. Esteem is ranked fourth in Maslow's hierarchy of needs, and Hawkins et al. (2007) noted the desire for status, superiority, self-respect and prestige as examples of esteem needs. Money has the ability to facilitate the achievement of some of these needs. Tang (1992, 1993) reported that money may help people to gain self-esteem but does not comment on whether self-esteem is contributory to financial success. Trzesniewski et al. (2006) reported that adolescents with low self-esteem grew up to have fewer economic prospects during adulthood than adolescents with high self-esteem; therefore, they postulated a relationship between self-esteem and money.

2.2.7 Conscientiousness

Conscientiousness with descriptive synonyms of orderly, self-disciplined, dutiful and achievement-orientated (McCrae & John, 1992) is one of the Big Five model factors. This personality trait refers to the propensity to follow socially prescribed norms and rules, to be goal-directed, planful, able to delay gratification, and to control impulses (John & Srivastava, 1999). McCrae and Costa (1987) stated that the qualities of a conscientious person who strives for excellence in everything are almost identical to the classic definition of need for achievement of McClelland, Atkinson, Clark and Lowell (1953). Christopher et al. (2008) described conscientiousness as a multi-factor construct including competence (in dealing with the world), order (levels of tidiness and organisation), dutifulness (a tendency to being reliable and dependable), achievement striving (hard work to achieve goals), self-discipline (finishing tasks despite obstacles such as distraction or boredom) and finally deliberation (how much thinking takes place before acting).

2.2.8 Materialism

Materialism, in the sociological sense, is the preoccupation with the pursuit of material things (Reber & Reber, 2001). Hawkins et al. (2007) noted two types of materialism, namely instrumental and terminal. Instrumental materialism is the acquisition of things to enable one to do something, for example, a calculator for mathematical calculations. Terminal materialism is the acquisition of an item for the sake of owning the item itself, for example a rare stamp (already used and therefore not suitable for postage charges), piece of art work as a collector’s item or an article merely for the appreciation of it. Hawkins et al. further noted that the pursuit of material wealth is a self-oriented value and differs amongst various cultures.

2.2.9 Impulsiveness and control

Impulsiveness generally refers to acts carried out without reflection (Reber & Reber, 2001) or a lack of rationality and not evaluating the alternatives. However, impulsiveness could be taking advantage of a special offer which, in itself, is not illogical (Hawkins et al., 2007).

2.2.10 Low anxiety and emotionality

Emotionality is behaviour that is observable and theoretically linked to an underlying emotion, for example, heart rate, blood chemistry, breathing or galvanic skin response (Reber & Reber, 2001). An increase in any of the above biological phenomena could mean heightened anxiety, excitement or nervousness. In colloquial or layman's terms, nervous energy or a pounding heart that increases performance would not necessarily contribute to sound financial decisions.

In section 2.2, ten personality traits were discussed that could ultimately be beneficial to optimal financial attitudes and behaviour (OFAB), of which locus of control, Type A/B personality and time orientation showed the strongest empirical evidence in terms of financial behaviour. This list does not claim to include all possible traits that could affect OFAB, but it is an attempt to give recognition to the complexity of the phenomenological network of variables that influence OFAB.

In the following sections, attitudes toward money, money personality and OFAB will be discussed and incorporated into a partial model of antecedents of optimal financial attitudes and behaviour.

2.3 The Development of Money Attitude

Money is more than a medium of exchange; its value is beyond the goods and services it can purchase. It is non-economic and symbolic and has sacred functions and allure, yet money is often a taboo subject for discussion (Gurney, 2007; Lanza, 1996). Money is frequently equated to or a substitute for love, self-worth, self-esteem, freedom, power, anxiety, dependence, security (thus minimising vulnerability), status, prestige, happiness, autonomy and respect or accumulatively rewritten as emotion-laden (Anthes & Lee, 2001; Belk & Wallendorf, 1990; Burgess, 2005; Durvasula & Lysonski, 2010; Engelberg & Sjöberg, 2006; Furnham, 1984, 1996; Gallo, 2001; Gurney, 1988; Haubl, 2004; Into, 2003; Lau, 1998; Rose & Orr, 2007; Ziv, 2007, 2011).

2.3.1 From attitude to money attitude

Traditionally, an attitude consists of cognitive, affective and behavioural components. It is explained as a consciously held belief or opinion (cognitive), with an emotional tone or feeling (affective), resulting in a response tendency or disposition for action (behavioural/conative) (Atkinson et al., 1990; Hawkins et al., 2007; Weiten, 2000). McGuire (1985) proposed that an attitude has a dimension of judgment (favourable or unfavourable evaluation) about an object. Foster (1999) considered a fourth element of attitude whereby an evaluation (positive or negative) of the attitude is made. Although attitudes are social judgements, they are not exclusively cognitive but include a mixture of emotional and behavioural components. Atkinson et al. (1990) pointed out that attitude is only an effective predictor of behaviour when the attitude is (a) strong and consistent, (b) based on a person's direct experience, and (c) specifically related to the behaviour being predicted. If this is the case, the attitude will guide behaviour.

Attitude and attitude toward money (money attitude) share the cognitive, emotional, behavioural and evaluative components. The assumption could be made that money attitude develops in a similar manner to attitudes in general. Money beliefs, which manifest in attitudes and behaviour, are established in early childhood, influenced by the psychological environment a person grows up in and are then maintained in adult life (Dominguez & Robin 1992; Furnham, 1996; Gurney, 1988). Children learn money skills and attitudes through various methods, namely positive or negative example and instruction from their parents, socialisation, inner values, culture, "frame of reference" and actual experience (Burgess, 2005; Furnham, 1984; Gurney, 1988; Koh, 2008; Lau, 1998; Tang, 1992, p. 201). Morris (1988) defined three well-known learning theories, namely classical conditioning, operant or instrumental conditioning and social learning theory.

The first learning theory is classical conditioning where learning takes place by transferring a response from one stimulus to another even though the stimulus was neutral. Lau (1998) stated that children as young as five years old can associate with money, but this association is chiefly in a functional capacity, with little or no evaluative or moralistic connotations and no apparent gender-specific differences. For a young child, money could be a neutral stimulus because it is merely exchanged between two adults (for example parent and ice cream vendor) but results in a pleasant experience, namely eating an ice cream.

Secondly, operant or instrumental conditioning is learning in which the likelihood of behaviour is increased or decreased by the use of punishment or reinforcement. For example, money could be given to or withheld from children to recognise active or non-active participation in household chores, which is an effective means of teaching a relationship between money and effort. Applying operant conditioning principles can assist in the development of early childhood saving and spending habits; however, the use of money as reward could cultivate impulsive buying behaviour in children (Lai, 2010). Impulsiveness, as seen in impulsive buying, has already been noted as a counterproductive behaviour with respect to financial independence.

The third learning theory, namely the social learning theory, focuses on learning by observation or receiving instructions without first-hand experience by the learner. The learning can result in positive or negative action. Elder (1974) concluded that young girls learnt effective money management from their mothers during the 1920 Depression years. Symbaluk, Heth, Cameron and Pierce (1997) described social modelling as having a stronger effect on behaviour than monetary incentives. This may imply that parental examples (a method of social modelling) are more influential than the mere receipt of pocket money. It could be postulated that adults could learn or adopt alternative behaviour by social modelling through their peers too. Lau (1998) commented that various socialisation experiences could further influence the manner in which people understand money. While children are gaining knowledge, values, skills or sensitivity regarding money (Reber & Reber, 2001), adults are learning how to use money in order to achieve a certain status level among other adults. Social desirability may also affect people's attitude toward money, especially the debt aspect thereof (Norvilitis et al., 2006). For example, Brougham, Jackson-

Lawson, Hershey and Trujillo (2011) stated that credit card debt in the United States is an acceptable method to attain material possessions. The perceived status gained by purchasing items that cause greater indebtedness may outweigh the monetary costs of that purchase; therefore, people are prepared to sink deeper into debt.

Money attitude and gender differences have been noted by various authors. Gurney and Dowd (2004) and Roberts and Sepulveda (1999) noted that men place higher value on money than women, as it represents identity and power to men. Women often associate money with love, nurturing, caring and happiness, but also with fear, panic, spite and anger (Roberts & Sepulveda, 1999). This could, however, partly be explained by the stereotypical expectations of the social and occupational gender roles, as highlighted by Greene and DeBacker (2004).

Similar to general attitudes toward an object, attitudes towards money are regarded as multidimensional, complex and multifaceted (Furnham, 1984, 1996; Roberts & Sepulveda, 1999; Stone & Maury, 2006). Despite having an attitude toward money, authors Furnham (1984), Huhmann and McQuitty (2009) and Durvasula and Lysonski (2010) commented on how scarce the psychological research is on money, financial attitudes and habits, even calling it the least studied topic in psychology. Previous researchers have incorporated attitude theory in their endeavours to develop questionnaires and models for the measurement and understanding of money attitudes and personality. The following section explains various measures of money attitude and will introduce terminology that will be used later when discussing Moneymax traits.

2.3.2 Measuring of money attitude

Numerous measures of money attitude have been developed of which the six most noteworthy to this research are highlighted next. Yamauchi and Templer (1982) developed the Money Attitude Scale (MAS) which included 34 items and resulted in five money attitudes namely *power/prestige*, *retention/time*, *distrust*, *quality* and *anxiety.* The first factor, namely *power/prestige*, points to the use of money to impress and influence others as well as the use thereof as a symbol of success. The second factor, *retention/time*, considers behaviour aimed at the future but with current planning. Burgess (2005) stated that *retention/time* is "the conservation of money through budgeting, self-control, the delay of gratification and the pursuit of parsimony and utilitarian consumption" (p. 114). The third factor is *distrust* and is defined as hesitancy, doubt or suspicion in one's own and the other's ability in an exchange relationship. The fourth factor is *quality* and is described as the pleasure or joy derived from consuming quality goods and services. The final factor is *anxiety* where money is either a source of anxiety or protection from anxiety. In a further study on the MAS, Yamauchi and Templer discarded the *quality* factor (5 items) as the items loaded on the *power/prestige* factor. The revised MAS therefore had 29 items. The MAS yielded acceptable coefficient alpha scores: the total scale for the MAS was $\alpha = .77$, and the respective factors *power/prestige* ($\alpha = .80$), *retention/time* ($\alpha = .78$), *distrust* ($\alpha = .73$) and *anxiety* ($\alpha = .69$).

Shortly thereafter, Furnham (1984) developed the Money Beliefs and Behavior Scale (MBBS) as he believed the MAS had certain shortcomings such as discarding the possible influence of demographic variables (age, gender and variables related to income). Furnham labelled six distinctive attitudes towards money as *obsession* (obsessed by all aspects of money), *power/spending* (giving money as a means of power), *retention* (being very careful with one's money), *security/conservative* (having an old-fashioned approach to money), *inadequate* (feelings of not having enough money) and *effort/ability* (how one acquires money). Preliminary results had shown a reliability of $\alpha = .84$ on an $n = 33$. Furnham's analysis of variance (ANOVA) results indicated that the variables most likely to contribute to money beliefs and behaviour were age, gender and education. He suggested that longitudinal studies be done where researchers consider how money-usage habits and beliefs were determined and learnt.

The third measuring instrument of money attitude was established by Forman (1987). This instrument could also be referred to as a measure of money personality because of the descriptive and collective naming constructs. Forman developed a taxonomy, occasionally referred to as the Money Sanity Scale (MSS), that listed five money profiles, referred to as complexes, namely *miser* (hoards money, is distrustful and does not enjoy the benefits of money), *spendthrift* (displays compulsive and uncontrolled spending with short-lived gratification often leading to feelings of guilt), *tycoon* (is absorbed with money making, seeing it as the best way to gain power and approval), *bargain hunter* (compulsively searches for bargains even if the item is not needed; becomes angry or depressed when having to pay the going price) and *gambler* (feels exhilarated and optimistic when taking chances; has a sense of power when winning is stronger than the losses incurred when losing). Low coefficient alphas for the five complexes were reported to be .43, .65, .56, .56 and .70 respectively. The total scale alpha was .65. Furnham (1996) questioned the reliability and validity of Forman's Money Sanity Scale.

Tang (1992, 1993) developed the Money Ethic Scale (MES) which resulted in predictor factors of *good* (positive attitudes toward money), *evil* (negative attitudes toward money), *achievement*; *respect/self-esteem* (money helps people express their competence and ability thus gaining self-esteem and respect from others), *budget* and finally *freedom/power* (have autonomy, be and do what one wants and influence others). The MES Cronbach alphas for the six subscales were .81, .69, .70, .68, .72 and .71 respectively for the USA sample n = 249 (Tang, 1992). In 1993 the MES was applied on a sample from the Republic of China (n = 68). The Cronbach alphas were .79, .55, .82, .79, .70 and .55 respectively.

Burgess (2005) made a significant contribution with his empirical study within South Africa, even though it related predominantly to consumer behaviour. Burgess compared the money motivation of South Africans within the Living Standard Measure (LSM) classification 7 to 10, with similar industrialised Western countries by re-evaluating Yamauchi and Templer's Money Attitude Scale. The validity and reliability of the scale and its five factors were confirmed. Burgess briefly considered Furnham's Money Beliefs and Behavior Scale but concluded it was too lengthy (60 items versus 29) and its internal reliabilities inconsistent across other studies. Burgess concluded his research by suggesting that an additional five factors become part of the Money Attitude Scale, thus establishing his own scale. The additional factors were *conservation* (focus on the retention of money through purposeful preparation for the present and future), *time/simplicity* (the role of money in simplifying life and reducing its frustration), *stimulation* (the pursuit of stimulation values, compatible with self-direction and hedonism), *spirituality* (addressing broader issues of spirituality and humanity) and *autonomy* (correlates with self-direction and is compatible with stimulation and universalism). Burgess did not label his scale, but for this research, it will be referred to as the Money Motivators (MoMot).

Funfgeld and Wang (2009) referred to their research as examining "self-stated financial attitudes and behaviour" (p.111). They did not label their scale, but for ease of reference, this sixth instrument will be referred to as the Five Clusters (5C). The Swedish sample consisted of 1282 respondents. Factor analysis results indicated five attitude factors namely *anxiety* (unsure, worried and anxious about money matters), *interest in financial issues* (interested in financial topics and exposure to financial information), *intuitive decisions* (decisions are made spontaneously and intuitively), *need for precautionary saving* (perceived relevance of future financial provision) and *free-spending* (tendency to spend). The respective Cronbach alphas were .65, .71, .61, .61 and .50. Funfgeld and Wang classified their respondents into five clusters (which could also be referred to as money personalities), namely *rational consumers* (involved and interested in financial matters with analytical decision making), *myopic consumers* (secure and not anxious about financial matters), *anxious savers* (anxious about financial matters, disliking spontaneous spending), *gut-feeling followers* (spontaneous and intuitive in decision making, seeing little need to save) and *anxious spenders* (spontaneous in spending yet noting a need to save, insecure about financial matters yet disinterested in learning about it). The authors further noted a distinction between the socio-demographic variables of age, gender and educational levels where women tended toward being *anxious spenders* (25.8%) and men *rational consumers* (39.6%). Older respondents tended to be *anxious savers* while the younger group were *anxious spenders*. Secondary school respondents were more inclined to be *anxious spenders,* while those with a university education were more *rational consumers.*

This concludes the six measures of money attitude. The next section compares these profiles to the traits within the Moneymax Profile.

2.3.3 Moneymax traits

Moneymax (MM) traits are the components (13 in total) that collectively form the nine Moneymax personalities. The MM traits, except for two, are noted to have a strength measure of low, average or high. Gurney (1988) did not define or describe a trait in cases where only an average strength or score could be attained. A relationship is postulated between MM traits and/or personalities and optimal financial attitudes and behaviour (refer to Figure 2.1). Table 2.1 is a summarised description of the MM traits and what constitutes a high or low score for each trait. The trait *confidence* was not part of the original text supplied by Gurney (1988). This definition was added to replace *anxiety* (refer to section 3.4.1).

Table 2.1

Description of Moneymax (MM) traits

MM Trait	Description	High score	Low score
Involvement	the degree to which one desires to be personally responsible and involved in managing and investing one's money	insists on taking control	relinquishes control
Pride	the index of the personal satisfaction one has attained in handling one's own money	feeling proud	feeling disappointed
Emotionality	the degree of emotion one feels in dealing with one's money	feelings guide decisions	practicality and rationality guide decisions
Altruism	the extent to which one believes in the financial generosity of others	people are generous towards others	people must fend for themselves
Anxiety	the degree of anxiety one feels in making financial decisions	doubt in own skill	trust in own abilities
*Confidence **	the degree of confidence one feels in making financial decisions	trust in own abilities	doubt in own skill
Power	the extent that the desire for power drives one's behaviour	motivated by prestige and status	uninterested in recognition through money
Work ethic	one's views of how the work ethic relates to one's financial success	believing that hard work brings success	doubting that hard work brings success

Contentment	the degree of personal happiness money contributes to one's life	peace of mind with financial status	discontentment with financial status
Risk taking	the level of comfort one feels in taking risks with one's money	seeking out and assuming risk	avoiding taking risks
Self-determination	the extent to which one feels in control of one's financial destiny	attributes success to personal effort	attributes success is to luck and fate
Spending	reflects one's attitude towards spending	spending one's money	saving one's money
Reflectivity	the extent to which one reflects upon past financial decisions while making current decisions	being reflective	being impulsive
Trust	the level of honesty one believes people have in dealing with money	people are honest	people are dishonest

Note. Adapted from *Your money personality: What it is and how you can profit from it* by K. Gurney, 1988, Sarasota, FL: Financial Psychology Corporation, pp. 73-75; * not in the original text.

Each Moneymax trait is characterised by identifiable attitudes and behaviours toward financial matters. For the purpose of clarity, an example is provided where an individual has a provident fund (where the portfolio of investments could be handled by the individual or solely by a broker). A person with a low score for *involvement* would hand the control (i.e., decision making) over to a broker, while a person with a high score for *involvement* would not and would rather decide for him- or herself. Given that these investment choices yield good returns, both individuals (low and high scores for *involvement)* could have a high *pride* score as they are pleased with their choices (relinquishing control or taking control). The opposite would be true (low *pride* score) if there were feelings of disappointment in handling their money. When people adopt a calculating, practical, rational attitude toward making financial decisions (e.g., donate to a charity), their *emotionality* score is low, while a person has a high *emotionality* score when feelings assist in making the final decision. The *altruism* MM trait deserves more explanation as it is not the individual's own sense of philanthropy but how the person perceives that others are or should be. A person with a low *altruism* score is more likely to be in favour of an organisation teaching people skills (to enable people to support themselves) than a charitable organisation handing out free meals, clothes or other essential items.

The individual who asks the broker to decide on the investment portfolio may do so because he has low *confidence* in his own skill as opposed to the high *confidence* score of someone who trusts his own financial abilities. An exceedingly wealthy person who donates money and ensures the local press reports on it would be considered to have a high *power* score, while an anonymous good deed is performed by someone with a low *power* score. The *work ethic* trait score would be high when there is a belief that hard work brings about success, while a low-scoring person is doubtful that hard work brings success. A person who has a high score for *contentment* is satisfied with his or her financial status, but a low score means the person is displeased with his or her status. An investor who knowingly chooses and yet is comfortable with a portfolio that is risky (high risk, low probability of possible high return) would have a high *risk taking* score, but an investor who avoids such options has a low score for this MM trait. *Self-determination* is similar to *work ethic* where an individual with a high score attributes success to his or her own effort, while a low-scoring person attributes success to good fortune or providence but not own effort. A high score for *spending* means an individual is comfortable about spending money, while a low score implies that the person would rather save money than spend it. *Reflectivity* refers to the consideration of past financial decisions and their outcome while making current decisions. A high *reflectivity* score infers that much contemplation is done, but a low score implies that the decision is taken impulsively, without much thought. The final MM trait to be expanded upon is *trust*. A high score indicates that an individual believes others are honest in their financial dealings, while a low score points to the thought that others are dishonest in money dealings.

Note that in most instances, no evaluation is placed on the high or low score as being inherently “bad/negative” or “good/positive” but rather that the situation would be the determining factor. For example, if a person with low *confidence* (doubts own skill) also displays low *involvement* (i.e., relinquishes control) and employs a capable broker when he needs to make an investment decision, he is in fact displaying sensible financial behaviour, even though a person with high *self-determination* may believe the other has not put in effort to secure and maintain financial success.

The focus now turns to how MM traits relate to personality traits based on the definitions of the traits (especially the high or low scores), in order to establish possible relationships.

Referring to Table 2.1, a high score for *involvement* is proposed to correspond or to be correlated with internal locus of control because the latter describes willingness (or lack thereof) to take control of life situations. High scores for *work ethic* and *self-determination* are likewise to correspond to the score achieved for internal locus of control because of the belief that own effort such as hard work, and not luck, brings about success. A low *self-determination* score, by contrast, corresponds to the score for external locus of control where luck and fate are considered contributory factors to success. Logical deduction therefore suggests that locus of control could be included in the partial model of antecedents of optimal financial attitudes and behaviour (OFAB). From the ensuing literature discussion and theorised relationships, the following can be deductively hypothesised:

Hypothesis 1: The MM trait of *involvement* has a significant positive relationship to locus of control.

Hypothesis 2: The MM trait of *work ethic* has a significant positive relationship to locus of control.

Hypothesis 3: The MM trait of *self-determination* has a significant positive relationship to locus of control.

Hypothesis 4: The MM traits of *pride, emotionality, altruism, confidence, power, contentment, risk taking, spending, reflectivity* and *trust* have no significant relationship to locus of control.

A high score for the MM trait *confidence* seems to correspond to Type A behaviour as self-efficacy essentially is trusting one's own ability in a particular sphere, in this instance, making financial decisions. Type A people are more impulsive which means their *reflectivity* score would be low. A high score for *involvement* is similar to a Type A personality since there is the insistence to take control. A high *power* and *risk taking s*core is also similar to the Type A individual as Type A people are motivated by prestige and status as well as seeking and assuming risk. A low *reflectivity* score appears similar to Type A as it refers to being impulsive. This is, however, an attribute that is not desirable when financial prudence is sought. A high *reflectivity* score would be superior. The MM trait that is similar to Type B is a low score for *power* where little interest is given to recognition through money. Logical deduction suggests that Type A/B personality could be included in the partial model of antecedents of OFAB. The hypotheses therefore are as follows:

Hypothesis 5: The MM trait *involvement* has a significant positive relationship with a Type A personality profile.

Hypothesis 6: The MM trait of *power* has a significant positive relationship with a Type A personality profile; and a significant negative relationship with a Type B personality profile.

Hypothesis 7: The MM trait *confidence* has a significant positive relationship with a Type A personality profile.

Hypothesis 8: The MM trait *risk taking* has a significant positive relationship with a Type A personality profile.

Hypothesis 9: The MM trait *reflectivity* has a significant negative relationship with a Type A personality profile.

Hypothesis 10: The MM traits of *pride, emotionality, altruism, work ethic, contentment, self-determination, spending* and *trust* have no significant relationship to a Type A or B personality profile.

Still referring to the descriptions in Table 2.1, a low *emotionality* score is similar to the practical and rational decision making of people with a future-time orientation, unlike those with present-time orientation who could be more impulsive decision makers. A high *reflectivity* score implies not being impulsive and therefore also similar to future-time orientation. A low s*pending* score indicates an individual saves money. The person is prepared to delay present- for future gratification. Logical deduction suggests that time orientation and delayed gratification could be included in the partial model of antecedents of OFAB.

Hypothesis 11: The MM trait *emotionality* has a significant negative relationship to time orientation.

Hypothesis 12: The MM trait *reflectivity* has a significant positive relationship to time orientation.

Hypothesis 13: The MM trait *spending* has a significant negative relationship to time orientation.

Hypothesis 14: The MM traits of *involvement, pride, altruism, confidence, power, work ethic, contentment, risk taking, self-determination* and *trust* have no significant relationship to time orientation.

A person with a low score for *risk taking* is one who avoids risk, while one with a high score seeks risk, both not desirable in the extreme form. The Moneymax traits of *work ethic* and *self-determination* are similar (high scores) to the definition of achievement orientation (the need to master difficult challenges, to meet high standards of excellence and to out-perform others; Weiton, 2000). The MM trait of *pride* and a global judgement of worthiness (self-esteem) could be viewed as similar. *Work ethic* and *self-determination* show similarities to the description of conscientiousness (orderly, self-disciplined, dutiful and achievement-orientated; McCrae & John, 1992). The MM trait of *spending* relates to materialism as a high *spending* score indicates the acquisition of more assets and goods. None of the other 12 MM traits, in definition, appear to relate to materialism. The supposition is made that materialism is a negative antecedent of OFAB. Two MM traits appear to relate to impulsiveness, namely *reflectivity* and *emotionality.* A high *reflectivity* score is advisable for OFAB, as looking back on what was effective or ineffective before making a similar decision means a repeated mistake is likely to be avoided. For example, a vehicle can be purchased *voetstoots* for a bargain price at an auction. If, however, from past experience, the prospective purchaser remembers that year model influences the ease of obtaining replacement parts, then, because *reflectivity* is employed, price would not be the only consideration for placing a bid. Further, *emotionality* should be low so that any decision is guided by practicality and rationality rather than impulsiveness, all being beneficial in OFAB. The definitions of a high *confidence* and low *emotionality* score could be considered as similar to low *anxiety* and *emotionality* which is beneficial for OFAB.

In the preceding sections the definitions of various personality traits were linked (through analysis of the semantic value of the definitions) with the descriptions of the MM traits. Attention is drawn to how a high or low score contributes to the construction of OFAB. The summary is depicted in Table 2.2.

Table 2.2

Contributors toward optimal financial attitudes and behaviour – indicators from personality traits and Moneymax trait scores

Personality trait	MM traits	
	High score	**Low score**
Internal locus of control	involvement, work ethic, self-determination	
Type A personality	involvement, power, risk, confidence	reflectivity
Future time orientation	reflectivity	spending; emotionality
Delayed gratification	reflectivity	spending
Comfort with risk	risk	
Achieve orientation	work ethic, self-determination	
Self-esteem	pride	
Conscientiousness	work ethic, self-determination	
Materialism		spending
Impulsiveness / Control	reflectivity	emotionality
Low Anxiety & Emotionality	confidence	emotionality

In Table 2.2, the following is noticed when the prevalence of MM traits is further summarised. The number indicated in parentheses denotes how often the MM trait appeared in the table. The results are as follows:

- high scores for *involvement* (2), *work ethic* (3), *self-determination* (3), *power* (1), *risk* (2), *confidence* (2), *reflectivity* (3), *pride* (1)
- low scores for *reflectivity* (1), *spending* (3) and *emotionality* (3)

Note that *reflectivity* appeared in both high and low scoring with the net result being two *reflectivity* traits with high scores. The MM traits *altruism, contentment* and *trust* do not appear in the table, and it is therefore assumed that they are not contributory factors of OFAB.

In the ensuing sections, the definitions of the MM traits as in Table 2.1 are important as it is an essential part in the attempt to establish a relationship with the similar or dissimilar antecedents of optimal financial attitudes and behaviour.

2.3.4 Comparative analysis of money attitude scales and Moneymax traits

The descriptors of the Moneymax traits, as per Table 2.1, will be compared to explanations and definitions in other money attitude scales. This is done in order to add credibility to the properties of MM traits. Notably, three of the six measures described in the previous paragraphs refer to *power* directly: *power/prestige* in the Money Attitude Scale (MAS), *power/spending* in the Money Beliefs and Behavior Scale (MBBS) and *freedom/power* in the Money Ethic Scale (MES). The label *tycoon* in the Money Sanity Scale (MSS) could also refer to a type of power held through owning large sums of money. *Power* appears to be a key element within money attitudes though not for optimal reasons, but rather selfish or self-centred ones. A high *power* score indicates that the individual is motivated by prestige and status. The MES's *freedom/power* definition tends toward improved financial independence, while the MAS and MBBS assist only in exercising authority, power or supremacy over other people.

The Money Attitude Scale and Money Beliefs and Behavior Scale name *retention/time* and *retention* respectively which, as will be explained later, is comparable to an individual who has *budgetary* or management-of-money skills (as per MES) or a sense of delayed gratification because of being prepared to wait for, plan or actively search for that best deal, such as the *bargain hunter* identified by Forman (1987). Yamauchi and Templer's (1982) four money attitudes of *power/prestige*, *retention/time*, *distrust* and *anxiety* seem to relate to the Moneymax traits of high *power,* low *emotionality* and high *confidence.* Furnham's (1984) MBBS with *obsession*, *power/spending*, *retention*, *security/conservative*, *inadequate* and *effort/ability* relate to MM traits of high *power*, high *trust* and high *work ethic.* Forman's Money Sanity Scale with its five profiles shares, by description, the following MM traits: high *power* and the *tycoon* who is absorbed with attaining power;

low *contentment* and the *miser* because the *miser* is not satisfied with his money status; and high *risk taking* and the *gambler* because of the exhilaration of taking chances. These attributes are however not conducive to optimal financial attitude. Tang's (1992, 1993) Money Ethic Scale of *good, evil*, *achievement*, *respect/self-esteem*, *budget* and *freedom/power* relates to MM traits high *pride*, high *contentment* and high *confidence*. Only the additional factors of Burgess' Money Motivators (MoMot) are considered, in which instance, *conservation* relates to low *spending* because it focused on retaining (saving) money. None of the other factors appear to be similar to other MM traits. Finally, Funfgeld and Wang's (2009) analysis with the resulting components of *anxiety, interest in financial issues, intuitive decisions, need for precautionary saving* and *free-spending* (read together with the definition of the five clusters) relate positively to MM traits of high *involvement,* high *confidence*, high *contentment*, low *spending* and high *reflectivity*.

Upon an investigation of the various descriptors and money attitudes, it becomes apparent that the presence (or lack) of certain attitudes could contribute to OFAB. Table 2.3 matches the definitions of the money attitude scales with the descriptions of the MM traits. This is done in an attempt to determine which traits are likely predictors of OFAB.

In Table 2.3, the following is observed when the prevalence, noted in the parentheses, of MM traits is further summarised as high scores for *involvement* (1), *pride* (1), *confidence* (3), *power* (2), *work ethic* (1), *contentment* (2), *self-determination* (1), *reflectivity* (1), *trust* (1) and low scores for *emotionality* (2), *power* (1) and *spending* (3). Note that *power* appears in both the high and low scoring with the net result being one *power* trait with a high score.

Table 2.3

Similarities between money attitude scales and Moneymax trait scores

Money attitude scales	Moneymax trait scores that contribute to OFAB	
	High score	**Low score**
MAS	power, confidence	emotionality
MBBS	power, trust, work ethic	
MSS	self-determination	emotionality, power, spending
MES	pride, contentment, confidence	
MoMot		spending
5C	involvement, contentment, confidence, reflectivity	spending

The MM traits *altruism* and *risk taking* do not appear in the table, and it is therefore assumed that they are not contributory factors of OFAB. A difference is noted between Table 2.2 and Table 2.3 where *contentment* was a non-contributory factor for Table 2.2, yet in Table 2.3 it has an effect toward the model. Ultimately, traits combine into personalities, and the following section considers briefly personality and money personality.

2.4 The Development of Money Personality

The continuous interest in the non-financial aspects of money has led to a question being asked: If traits culminate in personality, is it not possible that money traits (as depicted in the MM instrument) could lead to money personality? Both personality and money personality are influenced by the environment, for example, the parental home and experience. Bergh (2003a) referred to personality development as “no more than learned responses and habits” (p. 322). Bergh (2003c) referred to the work of Allport and Cattell and emphasises the mother’s role in personality development. Gurney (1988) explained that money style, social interaction, thinking and learning styles also develop. “People are influenced by the financial attitudes and behavior of their parents, and sometimes the imprint is so strong that it causes money-oriented problems in adulthood" (p. 186). In summary, it could be said both personality and money personality are learned behaviour, developing over time.

2.4.1 From personality to money personality

In the late 1970s, Goldberg and Lewis and later in the 1980s the author Rim specifically investigated personality in relation to money attitude (Lau, 1998). Numerous other authors such as Yamauchi and Templer (1982), Forman (1987), Gurney (1988), Tang (1992, 1993), Furnham (1996), Burgess (2005) and Norvilitis, et al. (2006) as well as Funfgeld and Wang (2009) have published work on attitude towards money, behaviour and personality.

Personality theory and money personality, as in the assessment tool Moneymax Profile, both use the terms *personality*, *style* or *type* as well as *traits*. A personality (money or otherwise) is the manifestation of a combination of high, low or average scoring traits and not a cumulative average score of traits. Personality could have hereditary, biological factors affecting its development, while no such element could be found for money personality. Money personality can be "reprogrammed" by identifying barriers that prevent self-expression and then altering it by means of a phased approach (Gurney, 1988, p. 340). Similarities, however, do exist between personality and money personality.

Gurney (2005), an early contributor to financial psychology, stated that people have a physical, emotional and social self, but also a financial or money self. This money self, style or personality can be defined as an individual's preferred pattern of financial behaviour (Linder, 2005). Money personality, according to Gurney (1988), is the combination of traits that "produce a particular set of money attitudes and behaviors" (p. 279). Dixon (1998) remarked that the concepts *money personality* and *money profile* are used interchangeably. Raymond (2005) used the term *fiscal* or *financial personality* and defined it as the qualities that govern how one thinks, acts and feels with regard to money, essentially the definition of *attitude* as defined by Gallo (2001) and Hawkins et al. (2007). Gurney (1988) further explained money personality to be similar to a personal balance sheet where certain traits are *assets*, but others are *liabilities* to financial success. Nettle (2006) referred to traits as *costs* and *benefits*, while Judge and LePine (2007) referred to *bright traits* and *dark traits*.

It is inferred that money personality encompasses positive elements which are beneficial to financial independence or success but also negative elements that are detrimental to financial success.

Against this background, the notion of having a money personality seems plausible. Various money personality measuring instruments will be highlighted next.

2.4.2 Measuring instruments of money personality

Numerous commercial money personality measures exist such as MoneyPsych Profile (Ronin, 2005), Psychology of Money Profile by Gottfurcht (2005), Money Personality Test (Wang, 2006), Money Personality Profiler (*Your Money Personality Profiler*, 2005) and Motivated Asset Pattern or MAP Assessment (Zimmerman, 2013), to mention but a few. These measuring instruments or assessments are often available free of charge on the Internet. A vast number of these scales exist but little or no attention is given to reliability, validity and measurement invariance issues (Burgess, 2005). Unlike the earlier measures of money attitude, the psychometric properties of these money personality assessments are not readily available. A consumer of these products is likely unaware that the scientific properties of the instrument are questionable, yet uses it because of ease of access and low to no cost. At the opposite end of the spectrum, academically sound instruments are not readily accessible in the public domain and could be overlooked as a tool to improve the financial literacy of individuals and the broader population. It would appear that some authors expound and promote the topic of financial psychology in a less-scientific manner, thereby harming rather than promoting the science.

The next section relates to another commercial product, the Moneymax Profile; however, its founders employed academic processes in its development, thereby potentially heightening its theoretical validity. The MMP's development history is briefly explained. The MM personalities are described and their definitions are compared with the personality traits of locus of control, Type A/B personality and time orientation together with delayed gratification.

2.4.2 Moneymax personalities

The Moneymax Profile (MMP) is a measure of money personality but is discussed in more detail than those above as it is postulated to be a predictor of optimal financial attitudes and behaviour (expanded on later). By 1988, Gurney, the founder and Chief Executive Officer of Financial Psychology Corporation, an American-based financial consulting company that distributes the rights to the MMP product (Investment Psychology Solutions [IPS], 2006; National Endowment for Financial Education, 2006) had developed the MMP in an attempt to define and better understand money personality. Its design purpose was for financial advisers to understand their clients (Gurney, 1988). According to Cowan (2010), there was no psychological research that helped investors evaluate their financial goals, risk tolerance or attitude toward money. Gurney particularly wished to consider personality in terms of money and thus developed a questionnaire that determined how psychological factors influence money management. The psychometric properties of the MMP are not available in the public domain with the distribution company stating that the algorithms, correlations, reliability and validity data are proprietary and would not be disclosed. Gurney (1988) stated that the scoring procedure was a 27-step computerised formula which could not be adapted to manual scoring and as a result was not included in her publications.

Further investigation into the development of the MMP yielded the following information (M. Srybnik, personal communication, 30 October 2006): The money personality concept was first developed in 1981, followed by a process using existing general instruments to search for correlations between personality and money behaviours (1982-1985). Between 1985 and 1986, 17 preliminary definitions of personality traits were generated using 290 questions. The Phase I analysis of survey results ($n = 407$) reduced the number of personality traits to 14 and number of questions to 46. Field tests were conducted to be certain of respondent comprehension and face validity of the instrument. In 1986, a national study was conducted ($n = 3109$), and Phase II analysis refined the traits to the current 13 and the statements to the current 28. The nine MM profile groups or personalities were defined along with linkages to demographics and historical investment preferences. In 1987 and 1988, Phase I and II study results ($n = 20\ 173$) demonstrated that MMP had acceptable reliability and that the results indicated consistent investment preferences. The MMP has been in use since 1987.

In 2003, a South African company, Investment Psychology Solutions (Pty) Ltd (IPS), introduced the Moneymax Profile to South Africa (IPS, 2006). This company provided professional and specialised advice, support, counselling and consultation in the field of financial psychology (IPS, 2008). After the dissolution of IPS, Third Circle Asset Management (Pty) Ltd (Third Circle), an asset management company, confirmed that they continued the use of the MMP (H. Snyman, personal communication, 24 February 2009 and 19 February 2013). The relationship between the South African and American company has, however, soured, but the MMP is still available through the Financial Psychology Corporation website (https://www.financialpsychology.com / Products/monmax.asp).

The Moneymax Profile lists nine money personalities, namely *Entrepreneur, Hunter, High Roller, Safety Player, Achiever, Perfectionist, Money Master, Producer* and *Optimist*. Each money personality has identifiable preferences, strengths and weaknesses. Thirteen MM traits (refer to Table 2.1) combine to form each MM personality but differ in intensity and importance to that MM personality. The unique combinations of MM traits to form MM personalities are described in section 3.4.1. The main characteristics of the MM personalities are discussed below (Gurney, 1988; National Endowment for Financial Education, 2006) together with comments relating to locus of control, Type A/B personality and time orientation as these personality traits relate to optimal financial attitudes and behaviour. Appendix A provides reworded and expanded definitions of each MM personality.

The *Entrepreneur* is performance-driven, goal-oriented, and comfortable with risk. *Entrepreneurs* are generally committed to and excel in their chosen career. Effort is put into work, but they also deem good luck to have a large role in their success. They have an unqualified belief that they can achieve success. The percentage of male *Entrepreneurs* exceeded the percentage of female *Entrepreneurs* (Gurney, 1988). *Entrepreneurs* are characterised by external locus of control, more Type A behaviour than Type B behaviour and no specific indication of present- or future-time orientation preference.

The *Hunter* is aspiring but self-doubting with a tendency to worry about future security. *Hunters* are generally well-educated, career-oriented, ambitious and hard-working but have average income (Van Tonder, 2003). *Hunters* rely on external rather than internal factors for success and are predominantly female (76%), while only 24% are male (Gurney, 1988). The *Hunter*'s external locus of control is evident, but there is no clear indication of Type A or Type B personality, and neither a future- nor present-time orientation is given.

The *High Roller* is sensation-seeking and creative. *High Rollers* seek out challenges for gain. They rely heavily on fate or chance to succeed. They require constant excitement and may therefore change jobs often to retain interest in their occupation. The *High Roller* is characterised by external locus of control and possibly a Type A rather than Type B personality. Time orientation tends toward the present time due to the sensation-seeking nature of this MM personality.

The *Safety Player* is cautious and security-oriented. *Safety Players* avoid the chance of losing money. They have low expectations of success, and a failure is a reinforcement to lower the goals for the next task. They do not take control of situations but rather blame fate for success or failure. The *Safety Player* is yet another MM personality for whom it appears that external locus of control is present. Personality type and time orientation is not clear from the short description.

The *Achiever* is proud and conservative with a strong need to control money. *Achievers* are achievement-oriented and tend to be effective employees. They have high expectations of success and are confident in their abilities. An *Achiever* has internal locus of control and high self-efficacy, and thus, a high expectation of success which has been linked to Type A personality. Time orientation preference is not clear.

The *Perfectionist* is highly analytical and thorough, but fearful of making mistakes. *Perfectionists* set very high goals that could lead to disappointment if not achieved, so in some instances, they do not even attempt to reach their goals (i.e., no action is initiated). As employees, their high standards, with lack of action, may prevent productivity and efficiency. A lack of ability and skill is blamed for any failure, which damages future expectations of success. The *Perfectionist* is characterised by internal locus of control but in a negative way (i.e., lack of ability means failure instead of ability meaning success) and a Type B personality, with its lack of action. Once again, time orientation cannot be predicted and evaluated.

The *Money Master* is a wise wealth-accumulator who focuses on value and being practical. *Money Masters* choose to control rather than to be controlled, yet will consider sound advice if it is not prescriptive. They do not believe in fate, but rather in their own talent, knowledge and skills to succeed. They are not emotional and anxious, but rather level-headed, resilient and steadfast. The *Money Master* is the "best" profile in most respects. The *Money Master* is characterised by internal locus of control. There is no clear indication of Type A or Type B personality, and neither a future- nor present-time orientation is evident.

The *Producer* is hard-working but frustrated. *Producers* can profit from financial education. They lack confidence in their abilities. They rely on hard work for success but fears, and self-doubt negates the effort. The MM trait *anxiety* is high, which increases anger and nervousness. Internal locus of control is more likely than external control for the *Producer*. High self-efficacy is usually evident in Type A personalities, but to speculate about a Type B personality because of a lack in confidence does not seem appropriate. There is no indication of time orientation.

The *Optimist* is positive and confident. The priority is maintaining peace of mind. Individuals characterised by the *Optimist* personality type tend to be elderly, and most have retired. They do not set high goals but retain a comfortable status quo. They have little desire for control and believe fate plays a significant role in their destiny. The *Optimist* appears to have external locus of control. The apparent satisfaction with existing circumstances makes them more likely to have a Type B personality. Time orientation could be present time, especially when the individual is older as there is no reason to consider the future because the present day is the future.

The relative frequency of the different MM personalities within South Africa during 2003, 2004 and 2007 is reflected in Table 2.4. The 2011 figures refer to the MM data that were accessible to the researcher. The MM personalities are arranged from most prevalent to least prevalent as per 2003.

The most noticeable change between 2003 and 2011 is that the prevalence of *Entrepreneur* moved down 3.91%, while *Achiever* moved up 3.41%. Unfortunately, Gurney (1988) did not supply the original percentage composition breakdown of the American sample that could have served as a basis for comparison.

Table 2.4

Frequency of Moneymax personalities across three intervals and the 2011 accessible population

	Frequency distribution per year (%)			
Moneymax personality	**2003 n = unknown**	**2004 n = unknown**	**2007 n = unknown**	**2011 n = 2783**
Achiever	23.36	23.60	25.48	26.77
Entrepreneur	19.04	18.40	16.52	15.13
Money Master	11.84	11.00	10.03	9.95
Hunter	11.68	12.60	12.63	12.11
Safety Player	7.68	7.40	7.22	5.93
Perfectionist	7.36	8.70	9.64	10.67
High Roller	7.36	7.10	8.00	6.97
Producer	7.36	7.00	7.27	6.82
Optimist	4.32	4.00	3.21	3.84

Note. Information is from *Account Statistics,* 2008, retrieved October 16, 2008, restricted access, from http://www.financialpsychology.com/MyAccount/Account_Stats.asp; "Jou Geldpersoonlikheid en wat Dit Als Beteken", by M. Malan, August 9, 2003, *Die Burger;* p. 26; "Bekyk Kliënt Se Sielkunde, Sê Raad", by J. van Tonder, May 2, 2004, *Rapport;* p. 7.

This concludes the section regarding money traits and money personalities. In the following section, optimal financial attitudes and behaviour will be discussed and various behaviours that support or detract from OFAB are presented.

2.5 Optimal Financial Attitudes and Behaviour

Optimal financial attitudes and behaviour is a concept introduced by the researcher and as such define measurable attitudes toward financial matters as influenced by for example the personality traits of locus of control, Type A/B personality and time orientation, and behaviour (specifically financial behaviour such as saving, investment, budgeting, retirement planning and effectively utilising credit) that maximise the likelihood that individuals will experience financial security or independence. The attitudinal aspects of OFAB have been discussed in depth in sections 2.2.1 through to 2.2.10.

Noting the above, in the following sections, attempts are made to identify manifest behaviours that are either beneficial (supporters and/or enablers) or detrimental (inhibitors) for OFAB. Mention will also be made of which of the 13 MM traits (a high or low score) are likely enablers or inhibitors of OFAB.

2.5.1 Behaviours that support and enable optimal financial attitudes and behaviour

The first behaviour that is beneficial, if practiced, is budgeting and planning to constructively deal with income, assets and liabilities in the short and long term (D. Roodt, personal communication, 6 August 2007 and 24 February 2013; FinMark Trust, 2004; *Health Check*, 2007; Mittra, 1990; Staffer, 2007). Loix et al. (2005) referred to a financial orientation which includes personal interests and skills with regard to seeking financial information, planning and budgeting. Skills that children should learn from their parents include personal budgeting and financial responsibility, commitment to retirement planning at the onset of one's career, as well as the discipline of spending less than one earns for the rest of one's life or at least living within one's means (Field, 2007; Staffer, 2007; Swart, 2003; Weldon, 2005). A Protestant work ethic, also known as work ethic ideology (Christopher et al., 2008), is described as honest hard work being good, and self-sacrifice and conscientiousness as virtuous and praiseworthy. This plays an influential role in values and training in, for example, postponement of gratification (Furnham, 1996) and fostering planning (Nevins et al., 2007). Planning leads to a positive attitude, and responsible planning means more commitment to financial goals, applying self-discipline and control (Swart, 2003). A low score for MM traits of *emotionality* and *spending* would indicate beneficial financial behaviour as practical and rational decisions are made and saving is encouraged. A high score for the MM trait of *work* *ethic* is advisable. Based on the theoretical sources presented in the preceding paragraphs the following hypotheses are stated:

Hypothesis 15: The MM trait *emotionality* has a significant negative relationship to budgeting.

Hypothesis 16: The MM trait *spending* has a significant negative relationship to budgeting.

Hypothesis 17: The MM trait *work ethic* has a significant positive relationship to budgeting.

Hypothesis 18: The MM traits of *involvement, pride, altruism, confidence, power, contentment, risk taking, self-determination, reflectivity* and *trust* have no significant relationship to budgeting.

The second behaviour, socialisation, also referred to as social referents in this text, can be regarded as both positive and negative. This behaviour is not a financial behaviour; however it is included to acknowledge that other behaviours are likely to influence OFAB. The socialisation influence is positive if it assists in teaching the beneficial behaviours for OFAB or techniques to avoid detrimental behaviour. Childhood and adolescent habits and attitudes develop early and are affected by primary socialisation (Furnham, 1984; Huhmann & McQuitty, 2009; Webley & Nyhus, 2001). Primary socialisation includes parental income and practices, education, social class and beliefs, while secondary socialisation is described as direct and indirect influences from the mass media (Tang & Gilbert, 1995). An example of secondary socialisation is seen in the increasing exposure of China's youth to Western culture through the media as a result of globalisation. They then, unfortunately, learn negative or potentially detrimental financial habits such as compulsive buying (Durvasula & Lysonski, 2010). Some MM traits are highlighted in the following scenario to demonstrate socialisation in the development of financial habits and ultimately money personality. A young boy watches as his hard-working (high *work ethic*) middle class mother decides (high *involvement* by taking control) to go into debt to purchase an economical (low *emotionality* because it is a rational decision) instead of a luxury vehicle (low *power,* i.e., uninterested in recognition through money) because she knows (high *confidence* in own abilities) from past experience (high *reflectivity*) that the extra money she earns (high *self-determination*) will be channelled (low *spending*) to the paying off of the debt, while the family still have all their needs met (high *contentment*). The expectation is that the young boy will emulate this behaviour when he is an adult.

Hypothesis 19: The MM trait *power* has a significant negative relationship to social referents.

Hypothesis 20: The MM trait *contentment* has a significant negative relationship to social referents.

Hypothesis 21: The MM traits of *involvement, pride, emotionality, altruism, confidence, work ethic, risk taking, self-determination, spending, reflectivity* and *trust* have no significant relationship to social referents.

The third behaviour is to take out insurance and is referred to as both short- and long-term saving in the literature. Short-term saving includes risk cover such as health insurance, funeral benefits, insurance against loss of income or property, retrenchment, bankruptcy, law suits and finances for unforeseen events (CFPL, 2006; FinMark Trust, 2004; *Health Check*, 2007; Swart, 2003; Winnett & Lewis, 1995). Highly risk avoidant individuals are those who are ultra conservative with investments as opposed to those willing to take excessively high risk with the potential to lose the investment. Neither extreme is advocated as desirable for OFAB (Huhmann & McQuitty, 2009). Long-term saving includes planning for retirement, disability or even for possible debilitating illness associated with, for example HIV/AIDS (CFPL, 2006; FinMark Trust, 2004; *Health Check*, 2007; Hershey et al., 1998; Roszkiewicz, 2006; Swart, 2003). Once again, a low scoring MM trait of *spending* may be applicable and preferable. By inference, an average to low score for *risk taking* may also be valid because insurance is generally taken in order to avoid or minimise risk.

Other beneficial behaviours include having financial discipline in the honouring of cheques by the banks (note the US reference where it is still a widespread payment method) and on-time payment of creditors (Stone & Maury, 2006), seeking professional help before a problem with spending manifests itself as excessive debt (D. Roodt, personal communication, 6 August 2007 and 24 February 2013; Hayhoe, Leach & Turner, 1999; Ronin, 2005; Staffer, 2007), drawing up of a will and doing estate planning (CFPL, 2006; Swart, 2003) and improving financial literacy or undergoing financial training.

Hypothesis 22: The MM trait *involvement* has a significant positive relationship to financial discipline.

Hypothesis 23: The MM trait *work ethic* has a significant negative relationship to financial discipline.

Hypothesis 24: The MM trait *risk taking* has a significant negative relationship to financial discipline.

Hypothesis 25: The MM trait *spending* has a significant negative relationship to financial discipline.

Hypothesis 26: The MM traits of *pride, emotionality, altruism, confidence, power, contentment, self-determination, reflectivity* and *trust* have no significant relationship to financial discipline.

The fourth beneficial behaviour is saving and investment (collectively referred to as control of investment by the researcher), noting that there is a difference between the two (*Health Check*, 2007; Staffer, 2007; Swart, 2003). Saving (putting away money, for example, deposits into a bank account) or investment (purchasing financial products, for example, shares or paying a premium) should involve 10% to 15% of net income which excludes contributions to a retirement saving (Staffer, 2007). Huhmann and McQuitty (2009) cited numerous authors who advocate a defined benefit retirement savings plan as opposed to a defined contribution retirement plan. Ashton (2010) noted economists from Old Mutual, Galileo and ABSA calculate that a 20% savings may ensure a quality retirement. Ingram (2013) specifically does not advocate a percentage saving but rather a basic mathematical calculation where minimum monthly expenditure is annualised (multiply by 12) for 20 to 25 years, estimating R2,4 million to R2,7 million for retirement readiness.

Some options for South Africans to save are through savings accounts, fixed deposits or 32-day notification deposits, and stokvels (Swart, 2003). A stokvel, according to Knight (2011), is a group saving scheme that provides for social and entertainment needs as well as mutual financial assistance. Its members contribute a fixed amount of money to a common pool weekly, fortnightly or monthly, and money is drawn by members either in rotation or in time of need. Field (2007) echoed the sentiments of financial advisors by saying that saving should start as early as possible. The assumption is made that savings are accumulated over a period of time in order to support a given level of consumption at retirement (Roszkiewicz, 2006).

Investments come in the form of indirect shares such as unit trusts, fixed property and the capital market (Swart, 2003). Early investments should be aimed at capital growth or down-payment saving such as purchasing a house or property (Browning & Lusardi, 1996). There are both financial and psychological reasons not to rent forever, but rather to purchase property (Roszkiewicz, 2006; Swart, 2003). Individuals should look at income-generating investments when nearing retirement (Field, 2007). The *Financial Sector Charter* (2002) referred to various challenges in South Africa, one of which is that the national level of savings and investment is inadequate to support individual financial security and sustained economic growth. Winnett and Lewis (1995) argued that saving is not as simple as putting away money, but rather, involves choices of where the money stems from to save. They established that people were less likely to save dividend income than capital gains. If both were saved, people were more likely to spend the dividend income than the capital gains. Statman (1999) stated that a good rule for investors would be to consume or spend dividends but not to dip into capital. Winnett and Lewis's rationale appears to be that capital is saved for a particular purpose, while other income is spent to smooth or even out consumption. It is suggested that savings in an emergency fund should equal three to six months' salary (G. Bertram, personal communication, 10 August 2007). The MM trait of *spending* may be applicable in that a low score in *spending* indicates that an individual is more likely to save money. *Involvement* is also necessary; however, the definition of a high score uses the term *insist* in taking control, but that comes across as too domineering. An average score is likely more appropriate.

Hypothesis 27: The MM trait *involvement* has a significant positive relationship to control of investment.

Hypothesis 28: The MM trait *spending* has a significant negative relationship to control of investment.

Hypothesis 29: The MM traits of *pride, emotionality, altruism, confidence, power, work ethic, contentment, risk taking, self-determination, reflectivity* and *trust* have no significant relationship to control of investment.

Finally, financial training or literacy is included but cannot be regarded as a financial behaviour per se. The exposure to, and base knowledge gained by financial training is surmised to potentially impact on all the preceding behaviours and is defined as the ability to make informed judgements and effective decisions about the use and management of money and, therefore, not being financially ignorant (Hershey et al., 1998; Raymond, 2005; Ronin, 2005; *Understanding money*, 2007). Huhmann and McQuitty (2009) used the term *financial numeracy* instead of financial literacy to explain a person's proficiency in understanding financial information during decision making. Capuano and Ramsay (2011) and Huston (2010) listed alternate terms that authors use for financial literacy, namely capability, empowerment, "responsibilization" or individual accountability (Williams, 2007, p. 233), credit literacy, financial knowledge and economic literacy. Hershey et al. and Huhmann and McQuitty warned that financial literacy training should be substantial else individuals would have an overconfident sense of the quality of their financial planning abilities and be likely to make suboptimal financial decisions. Financial literacy is believed to have a strong relationship with general adult literacy, skills levels, employment status, income and socio-economic status (FinMark Trust, 2004) and a partial relationship with cognitive ability (Huhmann & McQuitty, 2009).

Norvilitis et al. (2006) explained that men score higher on financial knowledge or literacy than women but are less likely to have a budget. Numerous authors (Baek & Hong, 2004; Hayhoe et al., 2000; Henry, Weber & Yarborough, 2001; Williams, 1991) concluded that women make more prudent financial decisions, and despite having more credit cards and higher levels of debt than men, use sound financial practices such as planning and budgeting.

2.5.2 Behaviour that is detrimental and inhibits optimal financial attitudes and behaviour

FinMark Trust (2004) listed the first detrimental behaviour to optimal financial attitudes and behaviour as being indebtedness, which Lea (1999) defined as the unwillingness or inability to meet the financial obligations as stipulated in a credit purchase agreement. Debt is generally perceived as negative and as a growing social problem (Webley & Nyhus, 2001; Winnett & Lewis, 1995). In the 19th and early 20th century, indebtedness was strongly disapproved of and considered shameful (Webley & Nyhus, 2001). In the 21st century, countries such as Germany and the Netherlands still view debt as shameful, but to a lesser degree than in earlier years (Hawkins et al., 2007). The use of credit was considered a form of debt which should be avoided. Roberts and Jones (2001, p. 230) noted that Americans had a "voracious appetite for debt", and most societies have changed in that they no longer view debt as shameful. Eisenberg (2009) stated that American consumer debt was at an all-time high and that obtaining credit was easier than at any other time in history. Demyanyk and Koepke (2012) reported that the year 2009 was the turning point for Americans when credit use started to decline and private savings started to increase.

Even though generally the attitude toward debt may have changed, indebtedness remains detrimental to financial security and independence. By retirement, an individual should be debt free and therefore welcoming increases in the interest rate (Field, 2007; *Retirement*, 2013). Elements that relate to debt are lack of financial knowledge, age, number of credit cards, ability or inability to delay gratification and attitude toward credit card use (Norvilitis et al., 2006). Credit is borrowing money, but to borrow money is not necessarily problematic (*Health Check*, 2007). Webley and Nyhus (2001) referred to model consumers as individuals who may have loans and credit (for example mortgage, hire-purchase) but are not in debt. The distinction between debt and indebtedness is that one is in debt when the repayments are according to the credit agreement and accounts are not overdue (Webley & Nyhus, 2001), while indebtedness means that one is unwilling or unable to meet the financial obligations as stipulated in the credit purchase agreement. To rationalise or justify debt is not advisable; for example, a person's income decreases, but expenditure remains the same through increasing credit use in order to retain a social reputation (the rationale). The advisable action is to decrease expenditure to match income (Webley & Nyhus, 2001) or stated differently, to live within one's means (Weldon, 2005). A debt attitude is displayed by someone who has a more favourable or "less unfavourable" attitude toward debt (Webley & Nyhus, 2001, p. 433). Webley and Nyhus found that individuals with a tendency toward debt were younger in age, male, had more children, rented instead of owned a house, had a lower income, had higher education, preferred immediate spending and had earned pocket money as teenagers. The authors warned against comparing own consumption with the consumption of a higher income group than one's own. A person with a high score for the MM trait of *spending* is more likely to be indebted, but this is not true in all instances. A low *spending* score would be suggestive of OFAB. A high score for *power* indicates that a person is motivated by the prestige and status that money can bring (Gurney, 1988) and may therefore tend toward indebtedness if it results in maintaining a certain social status level. A low *power* score is therefore indicative of OFAB.

A second inhibitor of OFAB is impulse buying and impulse purchases as reward (Raymond, 2005; Swart, 2003). The person exhibiting such behaviour seeks instant gratification and may have trouble planning or budgeting for purchases. Such people are likely to be influenced by their emotions. Low *emotionality* and *spending* MM trait scores, together with high *reflectivity* (as *reflectivity* negates impulsiveness) scores, are more desirable for OFAB.

Financial mismanagement, as a third inhibitor, includes cheques (appropriate in certain countries, less so in South Africa) that are not honoured and late payment of creditors (Stone & Maury, 2006). A MM trait that could be considered is *involvement* because a low score indicates that the person takes little control of money matters and is not involved in his or her financial situation. Thus, a high score for *involvement* would be preferable.

The Moneymax traits of *pride, altruism* and *trust* could not be clearly linked to any behaviour or personality trait that influences optimal financial attitudes and behaviour. Therefore, to summarise, the MM traits that are likely to lead to OFAB are low scoring *emotionality, spending, risk taking* and *power* and high scoring *work ethic, involvement, confidence, reflectivity, self-determination* and *contentment.*

The above sections all expanded on an actual measurable behaviour that either positively or negatively influences OFAB. This is, however, not all that is postulated to influence OFAB. The situations, current events or surroundings that people find themselves in may also be inhibitors or supporters of optimal financial attitudes and behaviour. These are explored below.

2.5.3 Situational influences of optimal financial attitudes and behaviour

The presence of particular situational influences could affect OFAB to such an extent that the other inhibitors or enablers are negated. For example, the death of an income earner (with or without outstanding debt), substantial windfall in the form of an inheritance or policy pay-out, the loss of employment, drastic changes in economic conditions, the experience of emotional turmoil, war, economic recession or depression, and changes in legislation could all affect the individual's ability to engage in OFAB (G. Bertram, personal communication, 10 August 2007; Grable, 2000; *Health Check*, 2007; Ronin, 2005). The MM traits that would be most advantageous in these conditions include *involvement* (high score) and *emotionality* (low score). For example, a recently widowed women now needs to take control of financial matters when she may have previously left them to her husband and make decisions in a practical and rational manner during an emotionally charged and uncertain period. *Reflectivity* and *spending* are placed together in the event of a windfall (e.g., inheritance) because to save instead of spend may be good, but if the decision to save was made too impulsively and the savings mechanism does not have the desired long-term effect, it was not a wise decision as *reflectivity* was not employed. A high score for *reflectivity* and a low score for *spending* is conducive to OFAB.

The most likely influential behaviours and personality traits have been explained. OFAB is multifaceted and warrants further research. The literature review identified financial behaviour that stands people in good stead to attain financial security upon retirement.

2.6 Comments on Attaining Literature Objectives

The first objective was to introduce and describe the Moneymax traits. Descriptors of the 13 traits were listed and further explained by way of a narrative. It is noted that traits could score high, low or average, although no definition for average was supplied.

The second objective was to investigate traits and personality that relate to financial concepts. Evergreen resources helped define traits and highlighted that unique combinations of traits lead to specific personality profiles. The literature review included more than 10 personality traits that are related to finance.

The third objective was to investigate the transition from traits to money traits and personality to money personality, including a discussion of the measurement instruments of money traits and money personality. The three factors of trait theory (biological, environmental and situational) were considered to be sound principles to explain the transition from traits to money traits and personality to money personality. The rationality of economics and the irrationality of psychology had to concede to each other's disciplines because neither could explain money psychology in its rigid boundaries. The contemporary resources relied heavily on earlier research or were very focused on specific issues such as credit card use by college students or how one country's bad habits are being learnt by another through greater media exposure. Generalisations have been difficult to propose especially since there are numerous money personality labels, yet much overlap exists in their definitions. In short, there is commercial hype but little science around the topics of money traits and personality.

The fourth objective was to describe the Moneymax personalities. This objective was achieved through summarising the originator of the MMP's own nine definitions which include, amongst others, a unique combination of high, low or average scores of the 13 MM traits.

The fifth objective was to define optimal financial attitudes and behaviour and consider if personality and behaviour enable or inhibit OFAB. This was achieved through the combination of literature and by consultation with, and reports from, leaders in the industry, most notably financial advisors and advisories. The list surely is not exhausted but enablers (supporters) were noted to be budgeting and planning, saving and having investments or insurance and positive social influence. Inhibitors were noted to be indebtedness, impulse purchasing and financial mismanagement.

The sixth and final objective was to single out MM traits that, by their definition, correspond to optimal financial attitudes and behaviour. The MM traits whose low scores repeatedly corresponded with the definition of OFAB are *emotionality, spending,* and *risk taking.* The high scores for MM traits *work ethic, involvement, confidence, reflectivity* and *self-determination* correspond with the definition of OFAB. *Power* may need to be average while *pride, altruism, contentment* and *trust* do not appear to have much influence as they were seldom, if ever, linked to OFAB.

2.7 Partial Model of Optimal Financial Attitudes and Behaviour

Based on the literature review, a model (Figure 2.1) could be proposed as a partial model of optimal financial attitudes and behaviour. As noted in Figure 2.1, all the personality traits that were discussed are listed and lead on to Moneymax traits. Three of the personality traits link into MM personalities. The MM traits flow through to the MM personalities and on to optimal financial attitudes and behaviour. Further, though, OFAB is influenced by various enablers, inhibitors and situational variables.

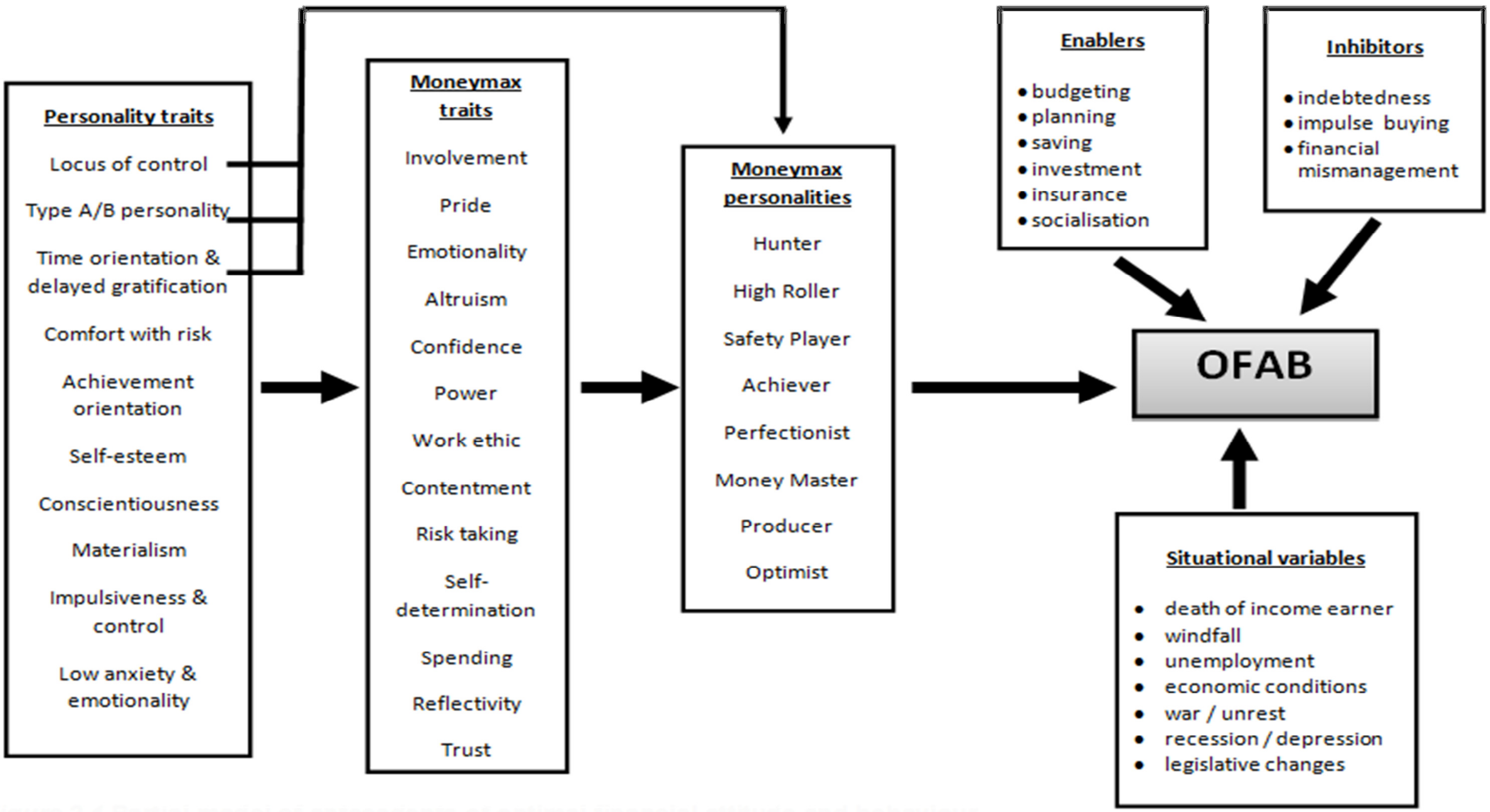


Figure 2.1 **Partial model of antecedents of optimal financial attitude and behaviour**

2.8 Concluding Remarks: Chapter 2

This chapter presented the theoretical background of traits and personality. Personality traits are descriptive, stable characteristics, which collectively facilitate the formation of an individual's personality, and personality is that which people will do, think or say when placed in a specific or given situation. Personality characteristics, namely internal locus of control, Type A personality and future-time orientation were highlighted as beneficial (enabling or supportive) toward financial independence. Money personality theory was approached in a similar way to personality theory, whereby a combination of traits was utilised in the formation of a personality. The influence of biological, environmental and situational conditions was taken into consideration for the theory.

Money traits and money personality together with their respective measurement instruments were discussed with an emphasis on the Moneymax Profile (13 traits and nine money personalities). The new concept of optimal financial attitudes and behaviour was introduced and defined as measurable attitudes and behaviour that maximise the likelihood that individuals will experience financial security. It was argued that behaviour and personality can both support (enhance or be beneficial to) or inhibit (be detrimental toward) OFAB.

The next chapter explains the methodology used in the research. It describes how the research was planned and executed. The choice and development of the measuring instruments (Moneymax Profile and Financial Independence Scale) are expanded upon.

CHAPTER 3 : RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter provided the theoretical background of the study. Chapter 3 describes the research design and methodology used to achieve the empirical objectives of the study. These objectives were the following:

- To determine the current financial behaviour patterns and attitude of the sample through the use of the Financial Independence Scale (FIScale)
- To determine the personality traits of the sample by means of standardised and modified psychometric instruments, namely Utsch and Rauch's locus of control, Robbins' adapted Bortner Type A Scale (BTAS) and Yamauchi and Templer's retention-time section from the Money Attitude Scale (MAS)
- To identify the main antecedents to the financial attitude and behaviour of the sample
- To investigate the relationship between Moneymax (MM) traits, Moneymax personalities and optimal financial attitudes and behaviour (OFAB)

3.2 Research Design and Method

According to Kerlinger and Lee (2000), research design is the plan and structure of an investigation in order to obtain answers to research questions. They explained further that the investigation obtains empirical evidence on the research problem. The research design used was a correlational *ex post facto* (non-experimental) design. The *ex post facto* research design is popular but has at least three limitations. One is the inability to manipulate the independent variables. Second, it lacks the power of randomising, and third, the design could lead to improper interpretation (Kerlinger & Lee, 2000).

A quantitative research method was adopted. Data were gathered by means of the Moneymax Profile (MMP) questionnaire (archival data) as well as the newly developed Financial Independence Scale (FIScale). The data were subjected to descriptive analysis, reliability testing, correlation, regression and analysis of variance (ANOVA).

3.3 Sample

Archival Moneymax Profile data were used for the purposes of this study. Third Circle Asset Management (Pty) Ltd and their financial advisors were, at the time of study, sole distributors of the MMP in South Africa. They severed ties with the Financial Psychology Corporation in 2009. An initial South African data base was obtained from the then Cape Town-based company Investment Psychology Solutions (Pty) Ltd, who initially distributed the MMP. The updated data base of completed MMPs could still be accessed by the researcher. The database on 6 October 2011 included 2783 MMPs.

Securing the participation of the individuals whose MMPs were available was extremely challenging. Communication with the prospective sample was sought through three financial advisory companies situated in George (Western Cape), Pretoria (Gauteng) and Port Elizabeth (Eastern Cape). Previously promised assistance from various financial advisory companies was not forthcoming, and the researcher proceeded by personally contacting the sample. Telephonic, facsimile and short message service (sms) were the methods of communication. E-mail facilities were used if they became available. Financial advisors expressed a belief that their customers were inundated with questionnaires and had questionnaire fatigue, and contrary to previous agreements, the advisors were not prepared to request their clients' participation in this research. This was unfortunate as the majority of the sample was therefore not accessible.

Of the 2783 data records, 1398 individuals were excluded as no contact details existed; 1385 individuals listed contact details, but 525 of these were clients of the financial advisors who were no longer participating in the study. Of the remaining 860 contactable individuals, 537 were contacted by the researcher via landline, cellular telephone or short message service (see Appendix B). Facsimile and e-mail (see Appendix C) were used during follow-up contact. Individuals who indicated an interest in participating but had not supplied the completed FIScale were contacted once only as a follow-up reminder. Those who responded negatively from the outset were thanked for the reply and received no further communication. Feedback on the overall study results, as well as the individual's questionnaire responses were offered as an incentive to participate in the study. A further incentive of two pre-paid MMP assessments was offered randomly to respondents who responded within a week of receiving the invitation to participate.

Ethical considerations were dealt with as follows: Absolute confidentiality of clients who used the MMP and FIScale was imperative. To this end, only the researcher had direct contact with individuals in the sample. A unique number allocated to individuals ensured anonymity when statistical analysis was completed. Information obtained was used for research purposes only.

Sixty-seven (67) FIScale questionnaires out of 537 were returned for whom an archived MM profile was also available. This is a positive response rate of 12.48%. Such a low rate causes the research to be exploratory in nature (Hayhoe et al., 2000).

3.4 Measuring Instruments

Two measuring instruments were used, namely the Moneymax Profile and the Financial Independence Scale. The MMP was completed prior to and independently of this study, and the archival data were initially extracted from the IPS and then the augmented Third Circle database. The respondents who were willing to participate completed the FIScale. Each instrument will be explained in the following sections.

3.4.1 Moneymax profile

The Moneymax Profile instrument was available as a paper-and-pencil exercise and electronically on the internet (IPS, 2006). It could be completed directly on the relevant website for immediate scoring or on paper for forwarding to an advisory company such as Third Circle or the individual's financial advisor for electronic scoring. The individual completed the demographic information and reacted to statements after the required fee had been processed. The MMP is a 28-item questionnaire and was available in English and Afrikaans (in South Africa until 2009). Respondents were required to answer each statement on a 4-point Likert-type intensity scale ranging from *strongly agree* to *strongly disagree*. The questionnaire was completed in approximately 10 minutes. An example of a statement in the MMP questionnaire is *I would like to play an important and active role in managing my investments*. The complete English MMP questionnaire is available for perusal in Appendix D.

The scoring of the Moneymax Profile was computerised, and the calculated results, namely the MM personality and the scores per MM trait, were supplied immediately after the completion of the questionnaire and forwarded to the individual or advisor by e-mail or facsimile. The results also included a detailed description of the specific MM personality's strengths and weaknesses per MM trait, together with suggestions for improvement, the actual answers the individual gave as well as a summary of all MM personalities. Each one of the nine MM personality profiles was based on a combination of the 13 MM trait scores. The personalised report stated that a low score for a MM trait was from 0 to 49, average was 50 to 75 and a high score was 76 to 100. The individual's report stated his or her own MM personality, for example *Entrepreneur*, *Safety Player* or *Money Master*. The specific score for each of the 13 MM traits was presented as a percentage.

Numerous attempts to secure the scoring key for the MMP were unsuccessful. M. Srybnik (personal communication, 30 October 2006 and 24 May 2007) from Financial Psychology Corporation and their Customer Service confirmed that the algorithms, correlations, reliability and validity are proprietary and would not be disclosed.

Table 3.1

Moneymax Profile: Personalities and Traits

Moneymax Personalities	Involvement	Pride	Emotionality	Altruism	Anxiety/ Confidence	Power	Work Ethic	Content ment	Risk -taking	Self-determination	Spending	Reflectivity	Trust
	MONEYMAX TRAITS												
ENTREPRENEURS	Avg	High	Low	Avg	Low / High	Avg	High	Avg	High	Avg	Avg	Avg	Avg
HUNTERS	Avg	Low	High	Avg	High / Low	High	Avg	Low	Low	Avg	High	Avg	Low
HIGH ROLLERS	Avg	Low	High	Avg	High / Low	High	Avg	Low	High	Avg	High	Avg	Low
SAFETY PLAYERS	Low	Avg	Low	Low	Low / High	Low	Low	Low	Low	Low	High	Low	Low
ACHIEVERS	High	High	Low	Low	Low / High	Low	High	High	Low	High	Low	High	Low
PERFECTIONISTS	Avg	Low	Low	High	High / Low	Avg	Low	Low	Low	High	Low	High	Low
MONEY MASTERS	High	High	Low	High	Low / High	Low	High	High	Low	High	Low	High	High
PRODUCERS	Avg	Low	Avg	High	High / Low	High	High	Avg	Low	High	Low	Avg	High
OPTIMISTS	Low	High	Low	Avg	Low / High	Low	Low	High	Low	Low	High	Low	High

(adapted from Gurney, 1988, p. 286)

Table 3.1 illustrates how each Moneymax personality consists of MM traits and indicates the relative strength (low, average or high) of each trait that combines to form the MM personality. *Anxiety, confidence* and *risk taking* scores were either high or low but not average. Gurney (1988) did not provide any explanation for this. The MM trait of *anxiety* was replaced by *confidence* (though both definitions were given earlier in Table 2.1) because *anxiety* was perceived to be a negative trait while *confidence* is regarded as a positive trait and thus more desirable (J. Rossouw, personal communication, 7 September 2006 and 20 February 2013; M. Srybnik, personal communication, 30 October 2006). The Afrikaans version of the MMP had to be adapted when the developers of the MMP made this change. No further information regarding this change could be obtained.

3.4.2 Financial Independence Scale

The Financial Independence Scale or FIScale (see Appendix E) was compiled for the purposes of this research and consists of various subscales. The locus of control, Type A/B personality and the time-orientation subscales were from existing scales, whereas all other items were developed specifically to address the research questions at hand. Respondents typically took approximately 30 minutes to complete the FIScale.

3.4.2.1 Section A – Demographic and socio-economic details

The aspects of gender, age, occupation, education and income (items 1, 2, 5, 8, 10 & 11) were included based on the previous research of Yamauchi and Templer's Money Attitude Scale (Roberts & Sepulveda, 1999). Lau (1998) further indicated that profession relates to the emotions attached to money and socialisation. The aspects of race, employment status, marital status, number of dependants and residential status (items 3, 4, 6, 7, 9 & 12) were added for comparative and explanatory purposes. Burgess (2005) used race as a variable in the Money Motivators (MoMot) scale (a revised version of the MAS) to identify previously disadvantaged groups. For the purposes of the current study, race is included to determine the diversity of the sample.

Landau's (1995) five occupational types (manufacturing, administrative/clerical, professional, sales and personal service) together with agricultural, sport, entertainment and political vocations were indicated as occupation groups. An *other* option was included for the sake of any additional, non-traditional occupations. The question that related to individual income used the income ranges as specified by the 2007 South African Revenue Service schedules. These ranges were then doubled to make provision for the total income of a household, assuming two adults earned an income. The other demographic indicators were used for explanatory purposes and are standard to most questionnaires (Troisi et al., 2006).

Items 13 to 39 were descriptive of financial behaviour, more specifically cheque account usage (13); short- and long-term savings options (14 to 17 & 26 & 27) as per Swart (2003); investments (18 to 20); insurance and assurance (21 to 25); actual savings and investment percentages (28) in order to evaluate if, according to Staffer (2007), people save the necessary 10% to 15% of net income in order to be financially independent; card usage with reasons (29 to 33); self-assessed economic status (34); financial training (35 & 36); financial knowledge (37); attitude change toward money (38) and behaviour change toward money (39). The increased availability and use of credit, as opposed to the option for other means of payment, could indicate lesser levels of optimal financial attitude and behaviour. However, item 29 required reasons for using credit cards which may be considered as OFAB, despite the potentially large number of credit cards held; for example, there could be no service fee to use a credit card.

Respondents who answered *radical/dramatic change* for item 38 and/or 39 would have been excluded from the analysis as it was initially believed their responses would incorrectly skew the results. Item 40 indicated the six needs, according to Gurney (1988) that money satisfies. It had been added to confirm the spectrum and possibly identify a predominant need of the sample. Item 41 inquired if the respondent would like feedback regarding this research. Feedback would be in writing and essentially would highlight differences between theoretical OFAB and the respondent's current financial behaviour.

3.4.2.2 Section B – Financial orientations

This section included subscales for three personality traits that related to financial orientations, namely locus of control, Type A and B behaviour and time orientation. Locus of control (items 42 to 49) was measured by using an adapted version of Utsch and Rauch's (2000) 8-item questionnaire, with responses indicated on a Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (6). Judge, Locke, Durham and Kluger's (1998) adapted version of Levenson's measure was initially considered; however, in their study, two scales of 24 and 12 items were used with the answers ranging from *strongly disagree* (0) to *strongly agree* (10). Coefficient alphas of .84, .83 and .77 were recorded. For the sake of brevity and ease of scoring, the shorter Utsch and Rauch locus of control scale was used as it included fewer reverse scoring options and the option range was regarded as more optimal. An example of a statement is *my life is determined by my own actions*. The sum of responses on the locus of control scale could range from 8 to 48. Higher scores (28 and above) represent more internal locus of control while lower scores (ranging between 8 and 27) indicate more of an external locus of control. Internal locus of control (higher scores) could be regarded as indicative of OFAB.

For the second construct, two measures of Type A/B behaviour were considered, namely, the Jenkins Activity Survey (JAS) and the Bortner Type A Scale (BTAS). The JAS, as used by Carducci and Wong (1998), and the adapted student JAS, as used by Spangenberg and Shuda (1997), reported acceptable reliability but consisted of 44 multiple choice items which were considered too lengthy for the current study. According to Edwards, Baglioni and Cooper's (1990) USA and UK study, the seven-item BTAS has lower reliability (.15 to .53) than the 14-item scale (.53 to .68), but Spangenberg and Shuda's (1997) South African study found no significant difference between the student JAS and BTAS, especially in relation to gender and career. Some differences were noted with respect to race. Robbins (1993) adapted Bortner's original 1969 scale (BTAS), and this version was used in the current study (items 50 to 56). The seven-item semantic differential scale presented semantic phrases on a continuum, ranging from 1 (absence of Type A behaviour) to 8 (extreme Type A behaviour), requiring the respondent to choose a number which best represented his or her behaviour. An example of the semantic differential scale is *casual about appointments* and *never late*. The phrases for items 53, 54 and 55 were changed slightly; for example, item 55 *sit on feelings* was changed to *withhold feelings* as the original statement may have been misinterpreted by the South African sample. The scores obtained were summed and multiplied by three as indicated by the scoring key of Robbins (1993, p.719). Scores of 120 and more indicated a predominantly or "hard-core" Type A behaviour, while scores of less than 90 were indicative of a Type B behaviour. Type A behaviour is more characteristic of OFAB.

Time orientation was the third personality construct included in the FIScale. An adapted version of Yamauchi and Templer's (1982) MAS factor of retention-time was used in the current study (items 57 to 63) to measure time orientation. Their 7-point Likert-type intensity scale ranging from *always* to *never* was adapted to a 6-point scale, 1 = *never* to 6 = *always* in order to avoid central tendency answers as well as retain the sequence from a negative opinion toward a positive one, for each subscale. A coefficient alpha of .78 (time-retention factor) and .77 (total scale) was reported by Yamauchi and Templer (1982). A statement example is *I follow a careful financial budget*. The answers to the statements were summed to obtain a total score for the trait. Scores could range from 7 to 42. The lower the score (from 7 to 24), the more present-orientated an individual was, with little concern for careful money management. Higher scores (25 to 42) indicated an individual whose actions were future-orientated, who had the goal of future security and values planning. A high score (i.e., a future orientation) would be more indicative of OFAB. It can be postulated that MM traits that positively and significantly correlate with internal locus of control, Type A personality and future-time orientation could be considered to be predictors of OFAB.

3.4.2.3 Section C – Optimal financial attitudes and behaviour

Section C was developed for the purposes of this research using the theoretical considerations from Furnham (1984), Winnett and Lewis (1995), Roberts and Sepulveda (1999), Webley and Nyhus (2001) and Roskiewicz (2006) to determine financial attitude and behaviour. The scale included, for example, active budgeting and financial planning, practice of saving and investment, owning property, being responsible in credit management, avoidance of indebtedness and increasing financial literacy. Items 64 to 88 were answered on a 6-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (6). Items 64 through to 69 related to beliefs regarding other people's usage of savings or investments, while items 70 to 75 represented beliefs regarding one's own usage of savings or investments. Items 76 to 82 and 89 to 91 related to attitudes toward budgeting (all reverse scored except 76, 79, 81 and 89). Items 83 and 84 referred to credit card use while 85 to 88 represented attitudes toward social referents (subjective norm). For items 89 to 105, the 6-point Likert-type scale ranged from *extremely unlike me* (1) to *extremely like me* (6). Behavioural indicators for financial discipline were included in items 92, 93 (reverse scoring), 94 and 98. Items 95, 96 and 97 were initially included to evaluate financial discipline; however, they were discarded during reliability analysis. Control of investments items 99 (reverse scoring), 100 and 101 were adapted from Gurney's (1988) MM trait *control*. Delayed gratification (a synonym of future-time orientation) was measured by items 102 to 105, with a reverse scoring for item 103.

3.4.2.4 Section D – Sources of financial status

The items (106 to 141) were formulated for the purposes of this research, and the Likert-type scale ranged from *not at all* (1) to *extremely much* (4). A list of factors influencing economic status (items 106 to 120) was generated, and each had to be rated in response to the statement: *Rate the extent to which each of the following factors has contributed to your current financial status,* for example, *My career choices* (item 106*)* and *Luck* (item 112*).* If respondents indicated that their financial status was a result of their own behaviours such as choices made and self-esteem, it could be argued that the responses confirmed an internal locus of control. If, however, respondents indicated that their financial status was as a result of other factors such as luck and a windfall, it could be argued that the responses confirmed an external locus of control. The items relating to internal factors are items 106, 107, 109, 111, 115, 116, 117 and 118, whereas items relating to external factors of economic status are items 108, 110, 112, 113, 114, 119 and 120.

The items for learning financial habits (items 121 to 131) included parental influence and culture (early socialisation), media (secondary socialisation) and direct or indirect financial education. Items 132 to 141 measured whether the respondents instinctively knew what constitutes optimal financial attitude and behaviour. All 10 items had to a larger or lesser extent been identified as antecedents of OFAB and thus ultimately influential in securing a sound financial future. The responses could be summed by saying the higher the total (to a maximum of 40), the better the understanding of what constitutes OFAB. The lower the score (10 is the lowest score), the less the respondent instinctively knows what behaviour is beneficial toward financial security through OFAB. A comparison could be made with respect to what respondents believed to be OFAB and what their actual behaviour was. For example, a respondent rated item 140 (budgeting) as *extremely much* (4) but answered item 89 (I draw up a budget or a financial plan and stick to it) as *extremely unlike me* (1). The respondent therefore knows what sound financial behaviour is but does not practice it. These items were deemed helpful for the generation of the feedback that was offered to respondents.

Table 3.2 summarises the FIScale by highlighting each subscale and the number of items it has.

Table 3.2

Financial independence scale and subscale items

FIScale section	Subscale (if applicable)	Number of items
Demographic and socio-economic details		41
Financial orientations	Locus of control	8
	Type A/B personality	7
	Time orientation	7
Optimal financial attitudes and behaviour	Budgeting	10
	Social referents	4
	Financial discipline	4
	Control of investment	3
	Delayed gratification	4
Sources of financial status	Contributors to status	15
	Contributors to habits	11
	Factors for financial well-being (financial literacy)	10

3.5 Data Collection

Landline calls were made to 149 numbers, leaving a message or briefing the person who answered about the research and inviting participation. Numerous numbers no longer existed. Some possible respondents no longer worked or resided at the number; they were unknown or deceased. The short message service method was used for 388 numbers of which 37 failed. A letter of consent (see Appendix F) and FIScale was sent via e-mail or facsimile when respondents agreed to participate. A two-week follow-up (see Appendix G) was done if the completed FIScale had not yet been returned. When the FIScale was returned, respondents were thanked and no further correspondence was entered into. The returned FIScale was then matched to the person listed in the Moneymax database and encoded with a unique number. Respondents' anonymity was thereby secured. All the data were captured in Microsoft Excel.

3.6 Statistical Analysis

Kerlinger and Lee (2000) listed four purposes for statistical analysis. Firstly, it is to condense large quantities of data into manageable and understandable formats. Secondly, it is to study the population and subsequent sample(s). Thirdly, it aids in decision making, and finally it assists in making reliable inferences from the observed data. The STATISTICA 11 software programme (developed and supported by Statsoft) was used for statistical analysis. The statistical consultancy service of Stellenbosch University was consulted.

3.6.1 Reliability

The reliability analysis of the scales and subscales is established by means of Cronbach's coefficient alpha (α). Nunnally (1967) and Nunnally and Bernstein (1994, p. 265) provided guidelines for the interpretation of reliability coefficients. These are represented in Table 3.3 in order to assist with the evaluation of data collected.

Table 3.3

General guidelines for interpreting reliability coefficients

Reliability coefficient value	Interpretation
.90 and above	Excellent
.80 - .89	Good
.70 - .79	Modest or Adequate
below .70	May have limited applicability

Reliability of α = .70 was considered adequate and acceptable for this study. This particular study's internal validity is at risk because of maturation which is the natural or spontaneous changes that occur over time. Babbie and Mouton (2001) and Kerlinger and Lee (2000) stated history (events other than the treatment that occurs during the study), testing and instrumentation (changes in the calibration of measuring instruments over time) also threaten internal validity. No dates had been added to the accessible data of the Moneymax profiles; therefore, no chronological ordering could be done. Also, the financial implication of purchasing MM questionnaires in order to have recently completed data was beyond the researcher's finances and this meant that archival data as old as 2003 (first made available through the South African company) may have been included in the sample.

3.6.2 Correlation

A correlation is the linear relationship between two sets of variables. A positive correlation is defined as both variables increasing or decreasing (moving in the same direction) at the same time. The opposite is true for a negative correlation in that as one variable increases (or decreases) the other decreases (or increases). The interpretation of the strength of the correlation differs among scholars. While $r = 1.0$ is a perfect positive relationship and $r = -1.0$ is a perfect negative relationship, neither Ratner (2013), Van Tonder (2011) nor Taylor (1990) agreed on the parameters for a weak, moderate or strong relationship. Table 3.4 indicates the various guidelines for interpretation of correlations. Taylor's parameters were used in the current study.

Table 3.4

Interpretation of correlations

	Weak correlation	Moderate correlation	Strong correlation
Ratner	± < .30	± .30 to ± .70	± > .70
Van Tonder	± .10 to ± .29	± .30 to ± .49	± .50 to ± 1.0
Taylor	± ≤ .35	± .36 to ± .67	± ≥ .68

Note. Adapted from "The Correlation Coefficient: Definition", by B. Ratner, 2013, retrieved August 11, 2013, from http://www.dmstat1.com/res/TheCorrelationCoefficientDefined.html; "Interpretation of Correlation Coefficient: A Basic Review", by R. Taylor, 1990, *Journal of Diagnostic Medical Sonography, 6*, pp. 35-39; and *Non-Remuneration Predictors of Intention to Quit Among Personal Financial Advisors,* by R. van Tonder, 2011, unpublished master's thesis, Stellenbosch University, South Africa.

Pearson correlations were utilised for this study in order to determine whether significant relationships existed between the variables.

3.6.3 Standard multiple regression

The predictive values of the constructs were determined through multiple regression. Multiple regression is noted by Kerlinger (1986) and StatSoft Inc. (2012) as the single most useful and widely used form of multivariate methods. The separate and common influence of two or more independent variables on a dependent variable is analysed. The standard model was followed as all the independent variables were entered simultaneously. The coefficient of multiple correlation (coefficient of determination or R^2) determines to what extent the independent variables account for the variances in the dependant variable. For example, the interpretation of $R^2 = .51$, states that more than half of the variance in the dependant variable is as a result of the independent variables (and not chance). The standardised beta coefficient for example $b^* = \pm.418$, indicates relationship (similar to correlation), either positive or negative, while the p-value determines significance. Kerlinger (1986) conceded that interpreting multiple regression statistics can be complex and difficult.

3.6.4 Analysis of variance

Analysis of variance (ANOVA) was considered appropriate due to the vast number of dependent and independent variables. One-way repeated measure ANOVA was conducted. Cramer and Howitt (2004) listed three advantages in using ANOVA: (a) it shows that the means of the groups differ, (b) it is a more sensitive test in that the error term may be reduced and (c) it indicates if there is a significant interaction between two or more factors. Large F ratios (>1) are not necessarily significant; therefore, the interpretation of the ANOVAs must consider all data supplied.

3.7 Concluding Remarks: Chapter 3

This chapter described the research design (correlational *ex post facto*), sample (South African composition, n = 67), measuring instruments (existing, adapted and generated for the study) and statistical analysis (correlation, multiple regression and ANOVA) of the study. The refusal of financial advisory companies to assist with survey distribution and the non-disclosure of the Moneymax Profile psychometric properties could be regarded as the major limitations of the research methodology. The next chapter furnishes the results and discussion of the statistical analysis.

CHAPTER 4 : RESULTS AND DISCUSSION

4.1 Introduction

The previous chapter was devoted to the research methodology and measuring instruments used in this study. Chapter 4 reports on the sample profile, psychometric properties of the measurement instruments and the statistical methods applied to test the hypotheses. The chapter concludes with a summary of whether the empirical research objectives were achieved.

4.2 Sample

Table 4.1 summarises the Moneymax personalities across the total population (as per Third Circle), contacted individuals and respondents in this study (as percentages). The results indicate that the sample (n = 67) population distribution closely resembles that of the total population. The sample is considered to be a good representation of the population in terms of MM personality distribution. The *Achievers* group is consistently in the majority and the *Optimists* in the minority.

Table 4.1

Moneymax personality: Comparison of population, contacted individuals and final sample

	Population % **N = 2783**	**Contacted %** **N = 537**	**Sample %** **n = 67**
Entrepreneur	15.13	15.46	13.43
Hunter	12.11	14.71	10.45
High Roller	6.97	7.45	7.46
Safety Player	5.93	5.77	5.97
Achiever	26.77	24.02	29.85
Perfectionist	10.67	9.87	8.96
Money Master	9.95	8.94	10.45
Producer	8.62	9.68	7.46
Optimist	3.84	4.10	5.97

The demographic results of the sample are summarised in Table 4.2.

Table 4.2
Demographic profile of respondents

Variables	Categories	f	%
Gender (n = 67)	Male	33	49
	Female	34	51
Race group (n = 67)	African	4	6
	Coloured	1	1
	Indian	1	1
	White	61	91
Employment status (n = 67)	Employed	39	58
	Self-employed	21	31
	Retired	5	7
	Unemployed	1	1
	Student	1	1
Occupational types (n = 67)	Manufacturing	2	3
	Administrative/clerical	9	13
	Professional	30	45
	Entertainment	0	0
	Political	0	0
	Sales	11	16
	Personal services	5	7
	Agriculture	1	1
	Sport	0	0
	Other	9	13
Marital status (n = 67)	Single	11	16
	Married	43	64
	Widowed	4	6
	Divorced	4	6
	Living together	5	7

Number of dependents (n = 67)	Zero	39	58
	One	8	12
	Two	8	12
	Three	7	10
	Four	5	7
Highest qualification (n = 66)	High school	4	6
	Matric	12	18
	Incomplete tertiary	4	6
	Tertiary	46	70

The gender representation was virtually equal (male 49%, female 51%), while the white race group was dominant (91%). Race was not used for further analysis other than identifying that one African and two White respondents participated in stokvels.

Most of the respondents were employed, and their occupational type was predominantly (45%) professional. *Other* occupations accounted for 13% of the sample and were specified as draughtsman, in training, engineering, academic, mining, tutoring and local government. The minimum age of respondents (not tabulated) was 21 years, and the oldest respondent was 68 years old. The average age of the sample was 44 years. This aligns well with the age distribution of economically active individuals within South Africa which ranges from 15 to 64 (*Quarterly Labour Force Survey*, 2013, p. v).

While 64% of the sample was married, the majority had no or no longer had dependents. It was surprising to note that 7% of respondents had four dependants. The number of respondents who had tertiary qualifications (70%) heightened the expectations of the prevalence of sound financial attitudes and behaviour.

Table 4.3 summarises the socio-economic profile of the sample as far as residential status and income is concerned.

Table 4.3

Socio-economic profile of respondents

Variables	Categories	f	%
Residential status (n = 67)	Own home/flat	38	57
	Rent home/flat	26	39
	Hostel/dormitory	0	0
	Other	3	4
Annual personal income (n = 62)	<R40 000	3	5
	R40000 - R100000	11	18
	R100000 - R160000	7	11
	R160000 - R220000	12	19
	R220000 - R300000	7	11
	R300000 - R400000	11	18
	>R400 000	11	18
Annual household income (n = 56)	<R80 000	4	7
	R80000 - R200000	12	21
	R200000 - R320000	9	16
	R320000 - R440000	12	21
	R440000 - R600000	9	16
	R600000 - R800000	3	5
	>R800 000	7	13

The majority (57%) of the sample owned property; the *other* was further explained as "living at home with parents" (mentioned by two respondents) and "staying with family whilst building my house". The reliability of the results regarding income is questionable as some respondents indicated a higher personal income than household income. The value of property owned ranged from R30 000 to R8 200 000, with a mean value of R1 959 705. The predominant respondent profile is a working, middle aged, married individual who is educated and owns a property.

4.3 Descriptive Statistics of the Measuring Instruments

In this section, the psychometric properties of both the Moneymax Profile and the Financial Independence Scale are discussed. Despite directly approaching the founder company of the MMP, very few details were available. The soured relationship between the American and South African distribution company meant that no information about the psychometric properties of the MMP could be sourced. Details of the FIScale were readily available.

4.3.1 Moneymax profile

The reliability and validity coefficients of the Moneymax Profile could not be secured from the authors of this commercial instrument, compounding the scepticism of academia toward commercially developed instruments. Anecdotal evidence only was noted by two large banking institutions, namely JP Morgan Investment Management Inc. and Bankers Trust Company, now part of Deutsche Bank, who validated (method not disclosed) the MMP prior to utilising the instrument (A. Hinch, personal communication, 28 November 2006). American institutions that used the instrument include Investment Management Inc., Bankers Trust Company, Deloitte and Touche LLC, Robert Thomas Securities, Dain Rauscher, GE Financial Insurers, Securities America, USA Today and American Express Financial Advisors Inc. (Dixon, 1998; IPS, 2008; Uzelac, 2002; Van Zyl, 2003). In South Africa, van Tonder (2004) noted that the Financial Services Board (FSB) tested and used the MMP, but no results of these studies could be obtained.

4.3.2 Financial Independence Scale

The Financial Independence Scale is the collective name used for the subscales of demographic and socio-economic details, financial orientations, optimal financial attitudes and behaviour and sources of financial status (refer to Table 3.2).

4.3.2.1 Reliability of subscales

The reliability of the subscales of the Financial Independence Scale is presented in Table 4.4. Low coefficient alpha reliability is noted for the Type A/B personality (α = .45), financial discipline (α = .34) and delayed gratification (α = .39) subscales, while the reliability of the remaining subscales was acceptable.

Table 4.4

Summary of psychometric properties of the subscales within the financial independence scale

Subscale	Number of items	Mean	Standard deviation	Cronbach alpha
Locus of control	8	34.61	4.83	.68
Type A/B personality	7	35.67	6.59	.45
Time orientation	7	31.36	6.06	.86
Budgeting	10	45.74	7.62	.78
Social referents	4	17.50	3.33	.76
Financial discipline	4	19.89	3.35	.34
Control of investments	3	11.37	3.72	.68
Delayed gratification	4	16.56	3.56	.39
Financial literacy	10	33.88	4.34	.78

The Cronbach alpha of .68 for locus of control is lower than the reported studies' (refer to section 3.4.2.2) alpha coefficients that ranged from .77 to .84. Type A/B personality scale recorded a Cronbach alpha of .45 which is similar to the study of Edwards et al. (1990) for the seven-item BTAS scale alphas between .15 and .53 that were reported. The time orientation subscale yielded a satisfactory coefficient alpha of .86 which is higher than the result of Yamauchi and Templer (α = .78). It could be postulated that the adaptation of the 7-point Likert-type scale to a 6-point scale contributed to the increased reliability of the scale. The financial behaviours of budgeting, social referents and control of investments resulted in satisfactory coefficients of .78, .76 and .68, respectively. Financial literacy (α = .78) is not a measure of optimal financial attitudes and behaviour per se but rather a composite indicator of optimal financial attitudes and behaviour.

4.3.2.2 Results – Demographic and socio-economic details

The demographic and socio-economic profile of respondents was presented in Tables 4.2 and 4.3. This section contains the results related to financial behaviour.

The use of financial instruments as indicative of financial behaviour is depicted in Table 4.5.

Table 4.5

Financial habits of respondents

Variables	Categories	f	%
Financial instruments (n = 67)	Cheque account	55	82
	Savings account	40	80
	Post office savings	4	6
	Long-term investment	41	61
	Short-term investment	23	34
	Unit trusts	17	25
	Listed shares	19	28
	Pension/provident fund	46	69
	Insurance – short-term	54	81
	Life assurance	52	78
	Medical aid	50	75
	Hospital plan	17	25
	Funeral benefit	29	43
	Stokvels	3	4
	Hidden money	6	9
Savings percentage (n = 60)	0-4%	13	22
	5-9%	13	22
	10-14%	17	28
	15-19%	12	20
	20% or more	5	8

The sample clearly preferred the traditional liquidity holding options of cheque and savings accounts and insurance such as life and medical aid. This result is compatible with the demographic profile of the sample. An interesting result is that some respondents (9%) hid their money (more than those who used the post office savings option, 6%). The post office is often regarded as an option for lower income earners, yet hiding money is anecdotally old-fashioned.

Upon close inspection of the medical aid and hospital plan statements, it was noted that some respondents made use of both. Medical aids generally cover more benefits than a hospital plan. The respondents' saving percentages are distributed relatively equally between the four lower saving categories. This item related to savings over and above the employment savings such as a retirement fund contribution, and could be interpreted incorrectly as the saving percentage being relatively high.

Table 4.6 provides the card ownership percentages. Many respondents felt it necessary to explain the use or non-use of credit cards, and 109 comments accompanied the responses.

Table 4.6

Card ownership

Type of card	Number of cards					
	0	**1**	**2**	**3**	**4**	**5**
Credit cards (n = 67)	21%	57%	16%	4%	1%	0%
Debit cards (n = 67)	21%	58%	19%	1%	0%	0%
Store cards (n = 66)	59%	26%	6%	6%	2%	2%
Loyalty cards (n = 67)	49%	24%	10%	9%	4%	3%

Most respondents indicated that they had one credit card and that they regarded it as convenient and safe. A credit card was mostly used for emergencies and purchasing large items. One respondent mentioned that the credit card was held to build a positive credit record, while a number of respondents perceived having a credit card as undesirable. Comments from these individuals were, for example, "*it is trouble*", "*don't believe in spending money we don't have yet*" and "*undisciplined".*

The ownership of debit cards showed a similar distribution to that of credit cards. The main reasons for having this type of card were listed as convenience and safety. Most debit cards are linked to other accounts and make automatic teller machine (ATM) usage convenient. One respondent indicated that it was the only type of card he or she qualified for in terms of the bank regulations, and another mentioned that a debit card was "*cumbersome*".

Store cards were not numerous (0 = 49%; 1 = 26%). The respondent with five cards did comment that the cards were not used much. Reasons for holding or not holding these cards varied, with some respondents noting the high interest rate while others lauded the zero interest rate. A few commented that they did not buy on credit, one respondent stating, "(I) *don't like paying off debt of items that are old or finished by the time the debt is paid*". It is noted that more loyalty cards were held than any other cards with the main reason being the possibility of future discounts or purchases done with the rewards. The results did not give a clear indication of the role of cards in OFAB, as the holding of cards could be either positive or negative (depending on the usage).

Table 4.7 reflects the self-reported economic status (or financial satisfaction) of the respondents as well as their financial training (training and literacy together were referred to as financial acumen). The findings of Traut-Mattausch and Jonas (2011) showed a positive relationship between levels of financial satisfaction and savings behaviour ($r = .56$, $p < .001$) and income and savings behaviour ($r = .44$, $p < .001$). In the current research, the savings propensity in relation to level of well-being was investigated by focussing on the respondent group that saved 15% or more. Of these respondents, 19.2% indicated that they saw their economic status as *tough but will improve*, 15.8% indicated their economic status to be *satisfactory* and 58.3% indicated their status as *well-off and sustainable*. These trends are similar to those found in Traut-Mattausch and Jonas' correlational results where satisfaction levels and savings behaviour showed a positive relationship.

Table 4.7

Economic status and financial acumen

Variables	Categories	f	%
Economic status (n = 65)	Well-off and sustainable	12	18
	Well-off but looks uncertain	2	3
	Satisfactory	28	43
	Tough but will improve	22	34
	Tough and unlikely to improve	1	2
Financial training (n = 67)	Have had	34	51
	Have not had	33	49
Financial literacy (n = 67)	Poor	8	8
	Fair	20	30
	Good	28	42
	Excellent	11	16

The majority of the responses (43%) indicated a *satisfactory* economic status with 34% indicating a *tough but will improve* status. The 18% of *well-off and sustainable* responses is higher than expected. Slightly more than half (51%) of the respondents had received some form of financial training. The sample mostly believed that their financial literacy was *good* or *fair* (total of 72%).

From Table 4.8, it is evident that the overwhelming majority (> 90%) experienced no or only slight attitudinal and behavioural changes following receipt of their individual MM personality summary report. The MM reports clearly identify areas of concern and where improvements in financial behaviour could be made. It is noted that knowing the results of the MM profile, which includes pitfalls and methods of improving financial personality, had very little impact on either the attitude or behaviour of the respondents. It could be postulated that financial matters are not a priority in most individuals daily lives (contributing to the under-preparedness for retirement) and as a result very little time and effort is put toward developing OFAB.

Table 4.8

Attitudinal and behavioural change after receiving the Moneymax Profile results

Variables	Categories	f	%
Attitude (n = 61)	None	32	52
	Slight	23	38
	Significant	5	8
	Radical	1	2
Behaviour (n = 60)	None	32	52
	Slight	23	40
	Significant	4	6
	Radical	1	2

The results of Table 4.9 align with the findings of Engelberg and Sjöberg (2006) that having money is believed to minimise vulnerability (increase security). Warburton (2013) stated that money is power, freedom and independence. The respondents reported that money provided them with a sense of security (60%) and freedom (39%).

Table 4.9

What money would give

Variables	f	%
Security	40	60
Freedom	26	39
Power	1	1
Love	0	0
Happiness	0	0
Respect	0	0

Finally, 82% of the respondents indicated that they would like to receive feedback.

4.3.2.3 Results – Financial orientations

This section in the questionnaire measured personality traits but was not labelled as personality traits (to mitigate possible respondent manipulation). The term *financial orientations* was chosen instead. The majority of the sample (94.03%) manifested an internal locus of control as opposed to a mere 5.97% who exhibited an external locus of control. The mere fact that participants in this study took some responsibility for their financial future (by filling out the Moneymax Profile and the FIScale questionnaires) provides support for this finding and is indicative of an internal locus of control. The results for time orientation indicated that 15.15% of the respondents were present-orientated and 84.85% demonstrated a future-time orientation. No further discussion is proposed around the Type A/B personality because of the low reliability of the scale (refer to Table 4.4).

4.3.2.4 Results – Optimal financial attitudes and behaviour

Section C of the questionnaire relates to optimal financial attitudes and behaviour. In the first section, respondents indicated the reasons why other people save or invest money, followed by their own reasons for saving or investing money. The results are reflected in Figure 4.1. Respondents were of the opinion that other members of the population save money for education (52% strongly agree), unexpected expenses (48% agree), retirement (74% strongly agree), charity (47% moderately agree) and luxury items (38% moderately agree). The assumptions are quite accurate as the respondents stated they do save for education (34% strongly agree), unexpected expenses (44% agree), retirement (58% strongly agree), charity (45% moderately agree), and luxury items (34% moderately agree). The most prevalent reason to save was for retirement, which is encouraging. This result concurs with The Old Mutual Retirement Monitor Summary (Old Mutual, 2013), which indicated that 50% of their sample's saving was intended for retirement, while education was still a priority.

Notably, there is the substantial difference between the perception (74% what others do) and reality (58% what respondents themselves do) for retirement saving. Respondents perceived others to save more than themselves. An unexpectedly large number of respondents saved for charity (45% self, 47% other). The percentages were lower for education (34% self, 52% other); however, it could be argued that as 58% of the sample had no dependants (refer to Table 4.2), that portion of saving or investment was allocated elsewhere, possibly to charity. Unexpected expenses could also include emergency expenses which ranked third for both respondents' own saving and the assumed saving propensity of others.

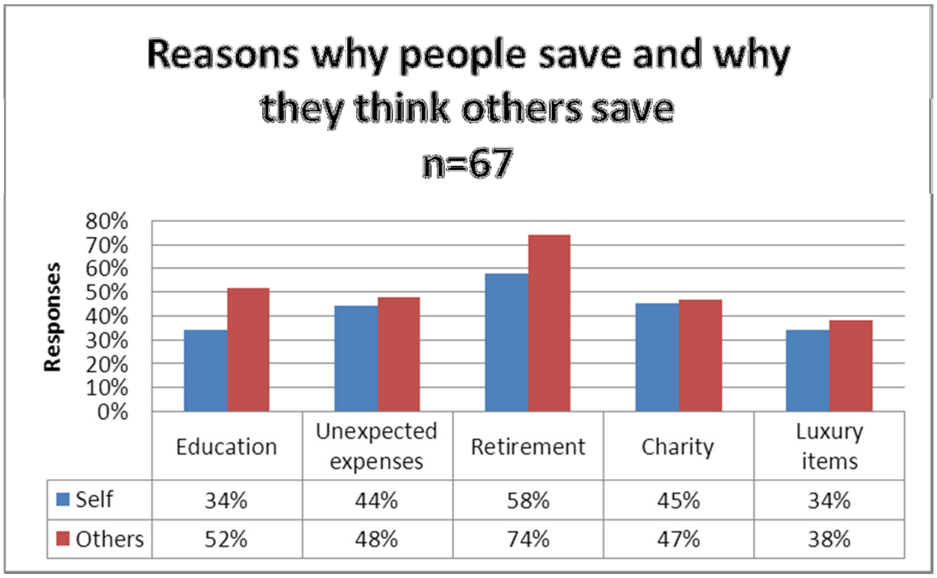


Figure 4.1 **Reasons why people save: Self and others.**

The section on budgeting yielded the following results: 88% of the sample classified budgets as a mechanism to get ahead (*agree* and *strongly agree)*. Budgeting was not perceived as limiting their freedom, for only 10% claimed it did limit their freedom. Half the sample (50%) agreed to the statement that a budget helped one survive in the current economy, and a further 17% strongly agreed. A third (33%) agreed that budgetary discipline supersedes unique offers (such as sale items), and an additional 13% strongly agreed.

Items 83, 84 and 95 to 97 were re-examined prior to the statistical analysis and considered too ambiguous or vague. No analyses of these items are reported.

Statements 85 to 88 solicited answers with regard to social referents or the role of the subjective norm in socialisation. The majority of the respondents (45%) agreed to living within their means as they did not care what their social group thought. A large group (34%) also agreed that they choose to live modestly, while 29% moderately disagreed that their social group did not regard material things as important. Most respondents (39%) agreed that the opinion of their social group did not matter to them. It therefore indicates that the sample displayed an element of OFAB.

This concludes the findings for Section C of the optimal financial attitudes and behaviour. The majority of the results indicate that the sample displayed optimal behaviours. A more reliable psychometric instrument is likely to report clearer trends.

4.3.2.5 Results – Sources of financial status

The results for financial status are presented in Table 4.10. Respondents indicated sheer hard work (64%), career choices (52%), control of income and expenses (49%) and education (39%) as the principle contributors to their current financial status. These results are, however, not all aligned with the ANOVA results presented later.

Table 4.10

Factors from where financial status is derived

Factor	% Not at all	% Slightly	% Mode-rately	% Extremely much
Career choice (n = 67)	6	10	31	52
Control income & expenses (n = 67)	1	16	33	49
Windfall (n = 67)	82	6	7	4
Thinking of others (n = 67)	19	28	42	10
Taking risks (n = 66)	29	32	32	8
Education level (n = 66)	9	14	38	39
Luck (n = 67)	66	27	7	0
Spouse / partner (n = 66)	36	30	18	15
Unexpected circumstances (n = 65)	58	20	9	12
Working hard (n = 66)	2	9	26	64
Past mistakes (n = 67)	1	18	37	43
Trusting others (n = 67)	27	36	27	10
Self-esteem (n = 67)	12	19	42	27
Born into it (n = 67)	73	18	4	4
Living in South Africa (n = 66)	35	29	29	8

Most of the reasons listed are indicative of internal locus of control (refer to section 4.3.2.3). The items that relate to external locus of control, such as windfall, luck, and born into it, were not listed as significant contributors to financial status. Self-esteem (42%) and risk (32%) were indicated as moderate contributors. By implication, risk did not have a very influential role in the financial well-being of this sample. Of interest is the low percentage ascribing current financial status to the contribution of the spouse (only 15% although the majority of the sample was married).

Table 4.11 depicts the results for current financial habits. Mothers (61% *moderately* and *extremely much*) and fathers (65% *moderately* and *extremely much*) contributed meaningfully to the financial habits of the respondents.

Table 4.11

Factors contributing toward financial habits

Factor	% Not at all	% Slightly	% Moderately	% Extremely much
Mother (n = 67)	19	19	39	22
Father (n = 67)	19	15	28	37
School (n = 67)	37	43	16	3
Attending courses (n = 67)	28	27	30	15
Self-taught (n = 67)	13	21	48	18
TV (n = 67)	45	33	18	4
Mimic others (n = 66)	18	35	38	9
Religion (n = 67)	52	13	25	9
Culture (n = 67)	42	27	22	9
Just know it (n = 66)	29	36	30	5

As early as the 1920 Great Depression, the roles of mothers in teaching effective money management skills to daughters were noted (Elder, 1974). Female respondents (f = 34) noted that mothers influenced their financial behaviour (29.41% *extremely much*); however, the role of the father was more prevalent (47.06%). For the total sample, fathers had the biggest influence (65%: *moderately* and *extremely much*). The youngest respondents of the sample, who are likely to have finished their schooling in the early 1990s, indicated that the school curriculum provided a *slight* influence on financial habits. Courses attended had a varied influence, and as a result, the effectiveness of financial literacy programmes was not clear amongst the respondents. The forming of financial habits through self-teaching was noted as the most influential (66%: *moderately* and *extremely much*). The television, religion and imitation of others did not contribute. It was expected that the Christian principle of tithing and giving an offering may have influenced financial habits, but the religious conviction of the sample was not known. The role of culture was regarded as moderate in the development of good financial habits and attitudes.

The literature places importance on the following contributors toward financial well-being: saving, not having excessive debt, having fixed assets, keeping records of finances, planning for retirement, maintaining healthy body weight (as an indicator of self-discipline and self-control) , self-control, delayed gratification, budgeting and having financial knowledge (Carlisle-Frank, 1991; CFPL, 2006; FinMark Trust, 2004; Hershey et al., 1998; Staffer, 2007; Webley & Nyhus, 2001). The findings do not support all the contributors (refer to Table 4.12) as important for financial well-being.

Table 4.12

Factors reported as important for financial well-being

Factor	% Not at all	% Slightly	% Moderately	% Extremely much
Saving (n = 67)	0	6	22	72
Not having excessive debt (n = 67)	3	3	12	82
Having fixed assets (n = 67)	1	12	24	63
Keeping records of finances (n = 67)	1	7	40	51
Planning for retirement (n = 67)	0	7	25	67
Healthy body weight (n = 67)	21	16	37	25
Self-control (n = 66)	0	6	37	57
Delayed gratification (n = 66)	9	30	26	35
Budgeting (n = 67)	0	9	43	48
Having financial knowledge (n = 67)	1	9	36	54

Little support is found for the notion that maintaining a healthy body weight is important for financial well-being (Carlisle-Frank, 1991) as only 21% of the respondents acknowledged this contributor.

4.4 Correlation Analysis

This section contains the findings of the correlation analysis and the acceptance or rejection of the stated hypotheses. The Pearson correlation coefficients are reported on, where r = 1.0 is a perfect positive relationship and r = -1.0 is a perfect negative relationship, and the measures in between range from weak to moderate through to strong relationships. Correlations of ± .36 or higher are highlighted as they fall within Taylor's (1990) definition of a moderate to strong correlation.

Table 4.13 is a summary of the relationships between the Moneymax traits and the personality traits (locus of control and time orientation) and financial habits (budgeting, social referents and control of investment) of the sample. Type A/B personality, financial discipline and delayed gratification were omitted due to the low reliability (refer to Table 4.4).

Table 4.13

Summary table of correlations: Moneymax traits, personality traits and financial habits

	Personality traits		**Financial habits**		
MM traits	Locus of control	Time orientation	Budgeting	Social referents	Control of investments
Involvement	.26*	.15	.21	.02	-.28*
Pride	.40**	.37**	.37**	-.02	-.14
Emotionality	-.14	-.27*	-.39**	-.37**	-.13
Altruism	.05	.18	.18	-.02	.14
Confidence	.43**	.02	.11	.12	-.14

Power	.04	-.28*	-.22	-.34**	-.11
Work Ethic	-.01	.09	.20	-.17	.10
Contentment	.09	.43**	.46**	.39**	.21
Risk taking	-.01	-.03	-.20	-.01	-.31**
Self-determi-nation	.18	-.02	-.12	.08	.13
Spending	-.13	-.38**	-.41**	-.46**	.13
Reflectivity	.22	.14	.14	-.02	.07
Trust	-.38**	-.03	.25*	-.17	.12

*$p \leq .05$

**$p \leq .01$

Involvement is significantly positively related to locus of control (r = .26; p < .05) and significantly negatively related to control of investments (r = -.28; p < .05). It is however a weak correlation. *Pride* is significantly positively related to locus of control (r = .40; p < .01), time orientation (r = .37; p < .01) and budgeting (r = .37; p < .01). The positive correlations are moderate in strength. This implies that *pride* is a likely predictor of OFAB as three of the possible five factors recorded significant results. *Emotionality* is negatively related to all the factors, significantly so for time orientation (r = -.27; p < .05), budgeting (r = -.39; p < .01) and social referents (r = -.37; p < .01). This implies that *emotionality* is a likely predictor of OFAB as three of the possible five factors recorded significant results. *Confidence* is significantly positively related to locus of control (r = .43; p < .01). *Power* is significantly negatively related to time orientation (r = -.28; p < .05) and social referents (r = -.34; p < .01). *Contentment* is significantly positively related to time orientation (r = .43; p < .01), budgeting (r = .46; p < .01) and social referents (r = .39; p < .01). This implies that *contentment*, as with *pride* and *emotionality*, is a likely predictor of OFAB. *Risk taking* is significantly negatively related to control of investments (r = -.31; p < .01). *Spending* shows a significant negative relation with time orientation (r = -.38; p < .01), budgeting (r = -.41; p < .01) and social referents (r = -.46; p < .01). The moderate yet significant relation implies that *spending* is a likely predictor of OFAB. *Trust* is significantly negatively related to locus of control (r = -.38; p < .01) and significantly positively related to budgeting (r = .25; p < .05).

Tang (1992) and Huhmann and McQuitty (2009) proposed that locus of control and *work ethic* relate to money, but the findings could not support this as the correlation between locus of control and *work ethic* was r = - .01 and it was not significant. Carducci and Wong's (1998) conclusion that Type A personalities are greater risk takers than Type B personalities could not be vindicated as the instrument was unreliable, and no results for the correlation between Type A/B personality and *risk taking* could be recorded.

It is noted that none of the correlations could be regarded as strong. Four Moneymax traits, namely *self-determination, altruism, work ethic* and *reflectivity,* showed no significant relationships with any of the variables. This implies that these traits do not contribute to OFAB and should be re-evaluated as variables in the partial model of OFAB.

The researcher tested the correlation of time orientation and delayed gratification in order to confirm the close relationship postulated by Bjornebekk and Gjesme (2009) whereby a lack in one was detrimental to the other. Webley & Nyhus, (2001) stated that present-time orientated people were less likely to delay gratification, and this research respondent group is future-time orientated implying they can delay gratification. A strong positive relationship between time orientation and delayed gratification would strengthen the notion that these personality traits are related and could be used interchangeably. Results indicate a weak positive significant relationship (r = .2934; p < .05; refer to Figure 4.2). It could be postulated that if future-time orientation (as opposed to time orientation in general) were correlated with delayed gratification, that a stronger correlation would have resulted.

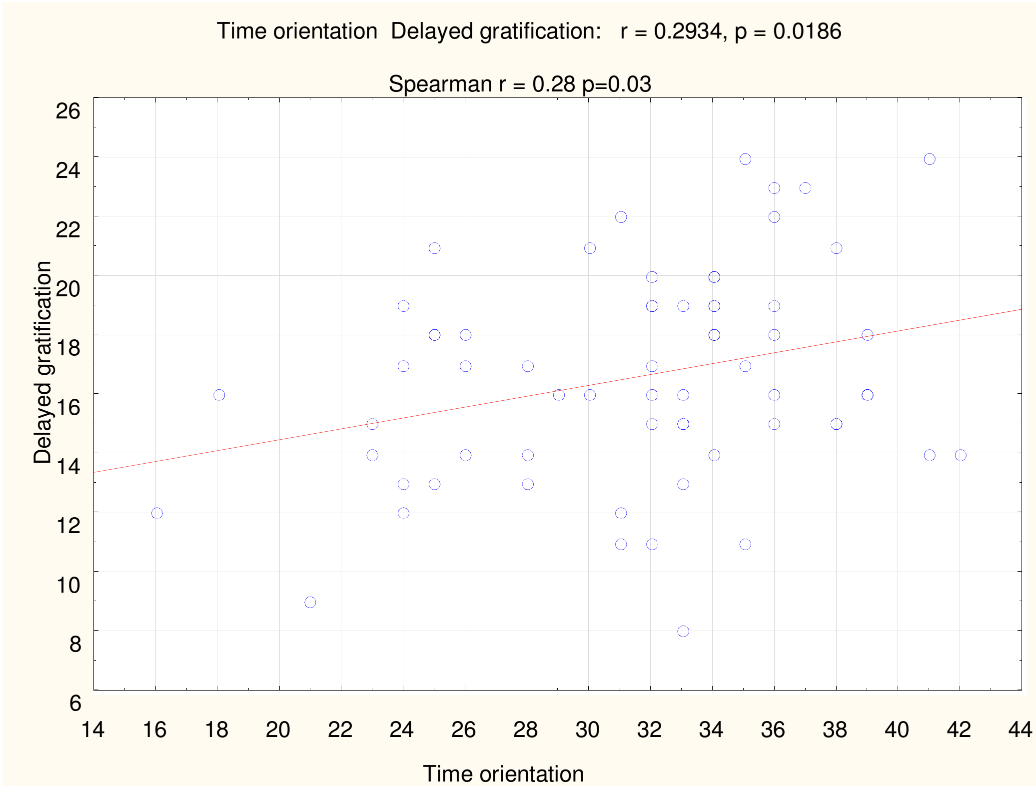


Figure 4.2 **Time orientation correlated with delayed gratification.**

4.4.1 Standard multiple regression

The standard multiple regression analysis considers the 13 Moneymax traits as independent variables (predictor variables) and locus of control, Type A/B personality, time orientation, budgeting, social referents, financial discipline, control of investments and delayed gratification as the dependant variables (criterion variables). Collectively, these criteria are the elements of optimal financial attitudes and behaviour. Only the summary of results is supplied in Table 4.14, while detailed analysis can be seen in Appendix I through to Appendix P.

Table 4.14

Summary of multiple regression results

Dependent variable	R^2	*F* ratio	*p*-value	n
Locus of control	.53	*F*(13,53) = 4.601	.00003	67
Type A/B	.26	*F*(13,53) = 1.423	.18006	67
Time orientation	.42	*F*(13,53) = 2.959	.0026	67
Budgeting	.58	*F*(13,52) = 5.5667	.00000	66
Social referents	.46	*F*(13,52) = 3.4756	.00066	66
Financial discipline	.24	*F*(13,47) = 1.1689	.3307	61
Control of investments	.43	*F*(13,53) = 3.075	.00191	67
Delayed gratification	.33	*F*(13,50) = 1.8949	.0537	64

It was noted in the multiple regression summary for the dependant variable locus of control that R^2 =.53, which implies that approximately 53% of the variance of locus of control can be explained by the 13 MM traits in the partial model. The variable locus of control is significant (p < .01). The results for Type A/B personality was R^2 =.26 and not significant. Time orientation was R^2 =.42 and significant (p < .05) with 42% of the variance explained by the MM traits. The financial habit of budgeting was significant (R^2 =.58; p < .01). It implies that nearly 60% of the changes within budgeting are ascribed to MM traits for this sample group. The variance of social referents was significant (p < .01) with 46% (R^2 =.46) of variance of social referents being due to MM traits. The dependent variable, financial discipline, was not significant. Control of investment has R^2 =.43, and the criteria are significant (p <.01), yet again, more than half (57%) of the variance is explained through chance. The final dependent variable is delayed gratification where R^2 =.33, and it is not significant.

Further consideration was given to locus of control and budgeting because the R^2 exceeded 50%. Appendix I (locus of control) and Appendix L (budgeting) supply in-depth analysis. The dependant personality trait locus of control is influenced significantly ($p < .01$) by the MM traits of *pride*, *confidence* and *trust* of which b^* (standardised beta coefficient) for *trust* is moderately negative while *pride* and *confidence* are positive but weak. The MM traits therefore collectively rather than individually help predict locus of control. Considering the dependent variable of budgeting, the independent MM trait variables of *contentment, risk taking, self-determination* and *spending* were significant ($p < .05$), while the b^* was negative for *contentment* and positive for the others, but weak ($< \pm .36$). The MM traits therefore collectively rather than individually help predict budgeting behaviour.

In conclusion, a list is supplied of Moneymax traits whose beta coefficients are $\geq \pm .3$ (convincingly influential on the dependant variable) and where the *p*-value is significant. The number in parentheses refers to the frequency that both the b^* is influential <u>and</u> the *p*-value is significant. They are *pride* (1), *emotionality* (1), *confidence* (1), *contentment* (5), *risk taking* (1), *self-determination* (1) and *trust* (1). The MM trait *contentment* featured most prominently, yet the researcher found little theoretical evidence to have predicted this outcome. The results for *pride* are partially understood and confirmed when considering the statement of Brougham et al. (2011) that the perceived status or pride of owning an item (even if purchased on credit) outweighs the indebtedness that it brings. The definition of high score for *contentment* (refer to Table 2.1) is peace of mind with financial status. By cross-referencing to the findings of Table 4.7, it is noted that 18% of the respondents indicated a state of being where their financial status was well-off and sustainable. This helps in understanding the results of *contentment.*

4.4.2 Analysis of variance

The first ANOVA analysis regarding the influence of gender of parent on financial habits of either son or daughter was insignificant, and no further analysis was pursued. Elder's (1974) finding that mothers influenced habits of daughters could not be validated. The next ANOVA analysis regarding gender differences with regard to financial practices such as budgeting and planning also proved insignificant. This result is contrary to the findings of numerous authors (Baek & Hong, 2004; Hayhoe et al., 2000; Henry et al., 2001; Williams, 1991) who concluded that women, more than men, use sound financial practices such as planning and budgeting. Finally, ANOVA analysis showed that respondents' current financial status was mostly derived from educational level (F = 6.807, p = .01), unexpected circumstances (F = 4.477, p = .02) and trusting others (F = 3.507, p = .04). Referring back to Table 4.10, the frequency results for unexpected circumstances and trusting others, note that more answers fall within the lower levels of *not at all* or *slightly*. As education is the common link, it only will be considered as the contributor to current financial status.

4.5 Hypotheses Discussion and Conclusions

The discussion and conclusions regarding the hypothesis are summarised below.

Hypothesis 1: **The MM trait of *involvement* has a significant positive relationship to locus of control.** The Pearson correlation is noted to be both significant and positive (but weak). The regression results further confirm that the MM traits in general have an influence of locus of control. Hypothesis 1 is therefore corroborated. Liebert and Spiegler (1990) stated that those with internal locus of control actively seek information relevant to their plans, which aligns with the description of *involvement* (refer to Table 2.1) where a person has a desire to be personally responsible and involved in his or her own financial plans.

Hypothesis 2: **The MM trait of *work ethic* has a significant positive relationship to locus of control.** The Pearson correlation is not significant and is negative. The hypothesis is rejected. The result is contradictory to the literature. Tang (1992) and Huhmann and McQuitty (2009) proposed a relationship, but the results do not support this. Furthermore, Christopher et al. (2008) definition of work ethic ideology, as honest hard work being good, closely matches the description of *work ethic* as per Table 2.1. It is proposed that a more refined hypothesis with a measure of specifically internal locus of control may have produced a favourable result as internal locus of control puts value on own effort (such as hard work) while external locus of control relies more on fate, luck or chance for success or failure.

Hypothesis 3: **The MM trait of *self-determination* has a significant positive relationship to locus of control.** The hypothesis is rejected because the result is not significant and the relationship negative. Upon closer inspection of the descriptions for *self-determination* and *work ethic* (refer to Table 2.1) it was noted that for some, own effort relates to success while luck or fate brought success for others. A distinction within the hypothesis between internal or external locus of control may have concluded in a different result as indicated in the discussion of Hypothesis 2.

Hypothesis 4: **The MM traits of *pride, emotionality, altruism, confidence, power, contentment, risk taking, spending, reflectivity* and *trust* have no significant relationship to locus of control.** The Pearson correlation was positive, significant and moderate for MM traits of *pride* and *confidence*, while the correlation for *trust* was negative, significant and moderate. The remainder of the MM traits showed no significant relationship. The hypothesis is therefore partially supported. The result for *pride, confidence* and *trust* is surprising as no support for this finding was indicated in the literature. Again, the distinction between internal and external locus of control could have influenced this result.

Hypothesis 5: **The MM trait *involvement* has a significant positive relationship with a Type A personality profile.** The Type A/B personality subscale was unreliable, and no further analyses were executed. By implication, no decision regarding the hypothesis is made.

Hypothesis 6: **The MM trait of *power* has a significant positive relationship with a Type A personality profile; and a significant negative relationship with a Type B personality profile.** No analysis could be done as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

Hypothesis 7: **The MM trait *confidence* has a significant positive relationship with a Type A personality profile.** No analysis could be executed as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

***Hypothesis 8:* The MM trait *risk taking* has a significant positive relationship with a Type A personality profile.** No analysis could be done as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

***Hypothesis 9:* The MM trait *reflectivity* has a significant negative relationship with a Type A personality profile.** No analysis could be made as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

***Hypothesis 10:* The MM traits of *pride, emotionality, altruism, work ethic, contentment, self-determination, spending* and *trust* have no significant relationship to a Type A/B personality profile**. No analysis could be made as the subscale proved to be unreliable. Again, no decision to either reject or accept the hypothesis is made.

***Hypothesis 11:* The MM trait *emotionality* has a significant negative relationship to time orientation.** The hypothesis is accepted. The Pearson correlation between *emotionality* and time orientation is significant and negative. It is, however, a weak correlation. As the *emotionality* score decreases, the time orientation increases which, for the sample, is predominantly future-orientated. The multiple regression results also indicate a significant *p*-value; therefore, time orientation is valued as an antecedent in the partial model of optimal financial attitudes and behaviour.

***Hypothesis 12:* The MM trait *reflectivity* has a significant positive relationship to time orientation.** Hypothesis 12 is rejected. The direction of the result is positive, but it is insignificant and therefore rejected. A possible explanation for this result could be found in the definitions of delayed gratification by Christopher et al. (2008) and Mischel (1986). These authors relate delayed gratification to time orientation (Bjornebekk & Gjesme, 2009). Delayed gratification, used as a synonym for time orientation, refers to behaviour that curbs current potential gain and awaits a future gain while *reflectivity* refers to looking back (reflect) upon events in the past and using the knowledge of hindsight to await or plan future gain. The results indicated a positive relationship, however the difference in behaviours related to reflection and delayed gratification may have influenced the significance of the relationship.

Hypothesis 13: **The MM trait *spending* has a significant negative relationship to time orientation.** The Pearson correlation is significant, negative and moderate in strength. This result corroborates the hypothesis. The direction of the correlation is especially important because an increasing time orientation (i.e., future focused) results when *spending* decreases (i.e., a lower *spending* score). The result supports Huhmann and McQuitty's (2009) concept of myopic self-control, where a person succumbs to impulse purchases for immediate or present satisfaction, to the detriment of future satisfaction. It could be postulated that if the MM trait saving (opposite to *spending*) were investigated, the relationship would be positive and the authors' definition of hyperopic self-control (excessive future orientated self-control) would be valid.

Hypothesis 14: **The MM traits of *involvement, pride, altruism, confidence, power, work ethic, contentment, risk taking, self-determination* and *trust* have no significant relationship to time orientation.** The Pearson correlation was reported to be significant for MM traits of *pride, power* and *contentment*. The remainder of the MM traits showed no significant relationship. The hypothesis is partially supported. The result for *pride* (as with Hypothesis 4), *power* and *contentment* is unexpected as the definitions of these MM traits have little to no resemblance to time orientation. Neither did the literature allude to a relationship between these constructs.

Hypothesis 15: **The MM trait *emotionality* has a significant negative relationship to budgeting.** The Pearson correlation is significant, negative and moderate in strength. The hypothesis is confirmed. The *emotionality* score decreases as the behaviour of budgeting increases. Budgeting behaviour requires rational thought which is most often achieved when emotions are negated or controlled. This result supports the viewpoint of De Torre (2005) who report that rationality is not acting on impulse of emotion, but rather being guided by the judgements of the mind. However, Kuzmina (2010) argues that financial decisions (such as budgeting) are not purely rational economic decisions and that emotions are involved as well.

Hypothesis 16: **The MM trait *spending* has a significant negative relationship to budgeting.** The Pearson correlation is significant, negative and moderate in strength. The hypothesis is confirmed. An increase in budgeting behaviour is followed by or coincides with the decrease in *spending*, or at least a decrease in irrational spending. This result was expected given the behaviours relate to budgeting and spending. FinMark Trust (2004), *Health Check* (2007), Mittra (1990) and Staffer (2007) define budgeting as behaviours that constructively deal with income, assets and liabilities (with the emphasis on constructively). On the other hand, *spending*, especially irrational spending, is rightfully negatively related to constructive financial actions, such as budgeting.

Hypothesis 17: **The MM trait *work ethic* has a significant positive relationship to budgeting.** The Pearson correlation is positive but not significant, and therefore the hypothesis is rejected. The direction of the relationship is important, as *work ethic* is a manner of discipline, so too budgeting, therefore increased discipline increases the likelihood of budgeting. The description of *work ethic* (refer to Table 2.1) includes *believing hard work brings success* and although drawing up a budget may be hard work the postulation of a relationship between work ethic and budgeting might have been overly optimistic.

Hypothesis 18: **The MM traits of *involvement, pride, altruism, confidence, power, contentment, risk taking, self-determination, reflectivity* and *trust* have no significant relationship to budgeting.** The Pearson correlation was reported to be significant for MM traits *pride*, *contentment* and *trust*. The remainder of the MM traits showed no significant relationship. The hypothesis is therefore partially supported. The result for *pride* (as with Hypothesis 4 and 14), *contentment* (as with Hypothesis 14), and *trust* is unexpected as the definitions of the MM traits have no resemblance to budgeting and no theoretical evidence could be found for these relationships.

Hypothesis 19: **The MM trait *power* has a significant negative relationship to social referents**. The Pearson correlation is both significant and negative. The hypothesis is corroborated. Having money and the apparent increased status it brings is less important for those individuals who regard their social referents as less important. Tang and Gilbert (1995) explained the elements of primary socialisation namely parental income and practices, social class and beliefs, education and secondary socialisation (the direct and indirect influence of the mass media). All these elements work together to determine socialisation and the importance that and individual place on for example the views of social referents. Put differently, socialisation processes determines how important “what others think” are to the individual. It could be argued that the manner in which this question was phrased, together with the sample profile, contributed toward the hypothesis being accepted.

Hypothesis 20: **The MM trait *contentment* has a significant negative relationship to social referents.** The Pearson correlation is significant but moderately positive as opposed to negative. The hypothesis is partially supported. The expectation of the direction of the relationship was based on the premise that social groups and the importance of their opinions could become less important (decrease) to individuals as *contentment* increases, thus the negative hypothesis. Put differently, as individuals become more content they would rely less on social referents. It could be postulated that as the respondents *contentment* (the degree of personal happiness money contributes to one’s life) increased, they felt more at ease to share this with their significant social group - shifting the focus from the importance of referents opinions (as part of socialisation) towards the sharing and interaction with a social group.

Hypothesis 21: **The MM traits of *involvement, pride, emotionality, altruism, confidence, work ethic, risk taking, self-determination, spending, reflectivity* and *trust* have no significant relationship to social referents.** The MM traits of *emotionality* and *spending* have significant relationships, but the remainder do not have significant relationships. The hypothesis is therefore partially supported. It is surmised, though not supported in the literature, that the description of *emotionality* (refer to Table 2.1) is related to the emotions of belonging and/or acceptance from one's social group. This may explain the resultant significant relationship. The same cannot be said for why spending and social referents have a significant relationship. No reasonable explanation could be found.

Hypothesis 22: **The MM trait *involvement* has a significant positive relationship to financial discipline.** No analysis could be made as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

Hypothesis 23: **The MM trait *work ethic* has a significant negative relationship to financial discipline.** No analysis could be made as the subscale proved to be unreliable. Regrettably no decision regarding the hypothesis can be made.

Hypothesis 24: **The MM trait *risk taking* has a significant negative relationship to financial discipline.** No analysis could be made as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

Hypothesis 25: **The MM trait *spending* has a significant negative relationship to financial discipline.** No analysis could be made as the subscale proved to be unreliable. No decision regarding the hypothesis is made.

Hypothesis 26: **The MM traits of *pride, emotionality, altruism, confidence, power, contentment, self-determination, reflectivity* and *trust* have no significant relationship to financial discipline**. No analysis could be made as the subscale proved to be unreliable. Regrettably no decision regarding the hypothesis can be made.

***Hypothesis 27:* The MM trait *involvement* has a significant positive relationship to control of investment**. The Pearson correlation is significant; however, the relationship is negative. This is contrary to the definition of *involvement,* unless the wording of the item *insist on taking control* was influential in the outcome. The hypothesis is partially supported. Considering Winnett and Lewis (1995) explanation of saving (an element of control of investment together with investment) which is not simply putting money away but rather involves choices, it was supposed that the relationship between *involvement* (described in Table 2.1 as a desire to personally be responsible and involved in managing and investing one's money) and control of investment be positive.

***Hypothesis 28:* The MM trait *spending* has a significant negative relationship to control of investment.** The Pearson correlation was not significant and the relationship was positive; therefore, the hypothesis is rejected. The findings were directly opposed to the literature descriptions and definitions of *spending* and control of investment. No plausible explanation can be offered.

***Hypothesis 29:* The MM traits of *pride, emotionality, altruism, confidence, power, work ethic, contentment, risk taking, self-determination, reflectivity* and *trust* have no significant relationship to control of investment.** The results indicate all but one (*risk taking*) of the MM traits do not have a significant relationship. The hypothesis is partially supported. It may be that *risk taking* was assumed similar to risk tolerance as per Callan and Johnson (2002) and Grable (2000) where a willingness to accept uncertain outcomes in financial decisions are tolerated. In the financial sphere of saving and investment such willingness for uncertainty may have led to the significant relationship between *risk taking* and control of investment.

4.6 Comments on Achieving Empirical Objectives

A summary of the findings to satisfy the empirical objectives is given below:

1. To determine the current financial behaviour patterns and attitudes of the sample through the use of the Financial Independence Scale (FIScale).

Completed questionnaires were analysed, and the results revealed that budgeting was an integral part of the respondents' financial behaviour; the opinions of the respondents' social group or referents were of little concern to the sample and did not influence their financial habits; there were reports of responsible use of credit cards; and accounts were paid on time which indicated good financial discipline. The respondents displayed many aspects of optimal financial attitudes and behaviour.

2. To determine the personality traits of the sample by means of standardised and modified psychometric instruments, namely Utsch and Rauch's locus of control, Robbins' adapted Bortner Type A Scale (BTAS) and Yamauchi and Templer's retention-time section from the Money Attitude Scale (MAS).

The sample predominantly (94.03%) displayed internal locus of control. The Type A/B personality scale was unreliable (26.98% were classified as "hard core" Type A, 14.29% were classified as Type B and a further 58.73% tended toward Type A personality). The majority (84.85%) of the sample was future-time orientated.

3. To identify the main antecedents to the financial attitudes and behaviour of the sample.

The ANOVA results were insignificant, and therefore no distinction between genders could be made. Education was statistically the main antecedent to OFAB with unexpected circumstances and trusting others as additional contributors to current economic status. As noted in Chapter 1, education has historically been at low levels for the majority of South Africans (Bradley & Corwyn, 2002; "Education", 2013; Landau, 1995; Zuma, 2013). This partly explains the low retirement readiness percentage.

4. To investigate the relationship between Moneymax traits and optimal financial attitudes and behaviour.

Refer to the model in Figure 2.1. The correlation analysis would indicate how strong and in what direction the relationship is, but its significance has to be taken into account. The results show that locus of control, time orientation, budgeting, social referents and control of investment have significant correlations to some of the MM traits. The MM traits that are significant across three or more variables are *pride*, *emotionality*, *contentment* and *spending.*

4.7 Concluding Remarks: Chapter 4

Chapter 4 presented the psychometric properties of the Moneymax Profile as well as the Financial Independence Scale. The sample was well matched to the population distribution of the MMPs, but questions remain as to the generalisation of the findings for a wider, more representative sample within the South African population. The reliability of some of the subscales was too low to continue with any statistical analysis.

Some of the significant correlations were unexpected, for example, *pride*'s positive correlation to locus of control, time orientation and budgeting. Additional observations are that the media and culture are noted to have little influence on financial habits. The geographical placement of the respondents (i.e., living in South Africa) did not negatively influence their behaviour or attitude.

The next chapter concludes the research and notes limitations of the current research as well as suggestions for future research.

CHAPTER 5 : CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter 1 posed the question whether South Africans can afford to retire. From the outset, it was recorded that only 6% to 10% can and that socio-economic reasons alone are unable to explain why. Money behaviour and attitude together with personality were considered to be contributors toward achieving financial independence. Specific literature objectives were stated which included the description of the Moneymax Profile (MMP) and its components, namely MM traits and MM personalities. The empirical objectives of the study were listed which included inter alia determining the personality traits of the sample and their financial attitudes and behaviour.

In Chapter 2, the historical and current understanding of traits and personality were explained. Special attention was given to personality traits that related to money or finances in some way. Three emerged as dominant for this study, namely locus of control, Type A/B personality and time orientation. A partial model of antecedent for optimal financial attitudes and behaviour (OFAB) was depicted in Figure 2.1. The chapter's theory then shifted from traits and personality to money traits and money personality. Measures of money traits and personality were expanded upon in order to better understand this emerging science. The Moneymax traits and personalities were defined, and these definitions were compared with the definitions of personality traits. The concept of OFAB, as defined in Chapter 1, was further expanded upon.

Chapter 3 presented the research design and methodology utilised in this study. The sample, measuring instruments, data collection and planned statistical analysis were discussed.

As noted in the previous chapter, the results of the statistical analysis of reliability, correlation, standard multiple regression and analysis of variance were presented. Some unexpected results, lacking substantiated literature, were noted. Conclusions were made for each significant hypothesis.

This final chapter aims to reach a closure on the exploration of the Moneymax Profile, specifically the MM traits' ability to predict OFAB. Implications and limitations of the study will be presented. Recommendations for future research will also be offered.

5.2 Limitations

Numerous limitations were noted in this research. Some obstacles were insurmountable and thus detrimental to the outcome of the study. Most noteworthy was the refusal of Financial Psychology Corporation, the authors and principal distributors of the Moneymax Profile, to supply reliability and validity information. Little detail was supplied regarding which legitimate personality assessments were used as the basis for developing the MMP. Assumptions made about the instrument could therefore be faulty, leading to incorrect conclusions.

Another limitation of the research was the small sample size. This was largely due to a particular company who held the majority of profiles within South Africa declining to participate or assist. The company representative stated their clients suffered from “survey fatigue” (P. Leonard, personal communication, October 2010 and 19 February 2013) as the company had completed a data update and would not subject their clients to the Financial Independence Scale as well. The invitation to participate and resultant self-selection of respondents was time consuming especially as a large chronological gap existed between completion of the Moneymax Profile and the FIScale, thereby requiring much explanation to prospective participants. People were reporting not having completed the MMP or having forgotten about it, despite proof that they had completed it.

Another factor contributing to the small sample size was the closure of the company that could provide easy access to completed MMPs. Upon closure, Investment Psychology Solutions (Pty) Ltd sold its distribution rights of the MMP to Third Circle Asset Management (Pty) Ltd which, in turn, became entangled in a legal dispute with Financial Psychology Corporation and subsequently withdrew from distribution.

The self-selected composition of the sample is a limitation. Individuals who already have a concern for their financial future and independence were more likely to initially have completed the Moneymax Profile and therefore were included in the study. Most of the MMPs were purchased through financial advisors or made available through advisors when clients secured their services. This sample is likely to display elevated positive financial attitude and behaviour in comparison to the population at large. Conservative as opposed to bold generalisation of the findings is suggested.

There would be few new respondents to include in the sample because of the cost of the Moneymax Profile. The MMP cost between R140 and R250 when it was available in South Africa and currently (in 2013) is available online at $19.95 or in hardcopy at $29.95. The sample is therefore not representative of the South African population.

Further limitations of the current study are the following:

- Respondents were relied upon to volunteer their time, and the completion of the questionnaire was not in a controlled environment; for example, assistance from members of their household could be sought to answer the questionnaire.
- A commercial instrument, the Moneymax Profile, which has not previously been subjected to empirical testing of this nature, was used as the measurement instrument. Validation within South Africa has also not yet been done. Validation will remain problematic without the original scoring key.
- The psychometric properties of the MMP were only broadly referred to or implied to be significant when considering who (for example reputable international banks) has used the instrument.
- The unreliable subscales for the variables Type A/B personality and financial discipline lead to no decision in the related hypotheses.
- The use of historical archival data could result in some respondents having up to a five-year period between completing the MMP and the FIScale, in which time, attitudes and behaviour may have changed more substantially than the respondent realises. In essence, maturation could skew the results.

- The study area of money personality is comparatively new, and empirical results have been slow to emerge.

5.3 Recommendations for Future Research

Considering the number of limitations presented above, the following recommendations for future research are offered. An improvement to the size and composition of the sample should be made. A wider sample would be preferable to include people known to display poor financial behaviour such as gambling addictions, bankruptcy or mismanagement of large windfalls or credit.

The psychometric properties of the Moneymax Profile have not been fully explored and evaluated. At one stage of the study, the researcher had access to every MMP done in South Africa to date, the number being in excess of 2700 profiles, with MM trait scores and the resultant MM personality. Mathematical inferences from that data base could and can still be drawn.

The cultural fairness of the MMP can be tested because a statement such as *most people will act as "Good Samaritans"* might not be widely understood among the culturally diverse South African population. The FIScale and especially the elements constituting optimal financial attitudes and behaviour would be much improved by simplification. Questions and statements regarding financial attitude and behaviour should be single concepts, avoiding ambiguity, in order to gauge the attitude or behaviour more accurately.

As with Furnham (1984), the researcher suggests longitudinal studies on how money-usage habits and beliefs are determined and change over time.

5.4 Implications of the Study

The first implication is for the distributors of the Moneymax Profile and those using it to advise the public on financial matters. If the psychometric properties are not reliable, people may falsely believe their attitude and behaviour are harmful or beneficial for them. If the advisor steers a person toward optimal behaviours as identified, irrespective of the MM personality, then the situation could be salvaged.

Educators in financial literacy should consider which medium of communication is most effective for training. The current study's respondents learnt their financial habits (excluding learning from parents) through self-teaching, attending courses and, very seldom, from television. Classroom training may be effective, but the age of the learner should be considered (andragogy versus pedagogy learning styles). Self-taught mechanisms may be more effective, and observation of others who were successful may be the best. Parents and positive role models should speak to the younger generation about money, especially principles such as saving and living within one's means. It is not a taboo subject, and not unlike the topic of sexual education, is vital for our existence and survival.

Government should increasingly come to the realisation that it cannot afford to support the 90% to 94% of the population who cannot retire independently. Encouragement and support for initiatives such as savings should be on every agenda. This should be supported by educational drives (for example, explaining interest rates, saving methods and inflation). The regulation of the financial industry is paramount to protect the general public against unscrupulous financial institutions and advisors.

5.5 Conclusions

The research stems from the premise that securing a financial future is dependent on optimal financial attitudes and behaviour as well as possessing personality traits aligned to such attitudes and behaviour. The scientific fields of economics and psychology are required to work together in order to understand this phenomenon and help secure a viable financial future.

The Moneymax Profile proved problematic with the non-availability of the reliability and validity coefficients key. The Financial Independence Scale was developed to encompass behavioural and attitudinal aspects of personality and finance. Ideally the FIScale should have resulted in a numeric score, per subscale or as a whole, which could gauge an individual's ability to be financially independent. This was not forthcoming. Various aspects within the FIScale did, however, offer sufficient information to draw conclusions.

Firstly, those interested in their financial situation (i.e., those who completed the MMP and then the FIScale) are typically married, no longer have dependants or do not have many dependents. They are educated, have or have had professional careers, own property, partake in a variety of financial systems, save in excess of 10% and have a fair to good understanding of finances, despite little financial training.

Secondly the measuring instruments for locus of control and time orientation were sufficiently reliable to use. Some significant correlations were recorded between locus of control or time orientation and the following MM traits: *involvement, emotionality, confidence, power, contentment, spending* and *trust*. *Pride* correlated significantly, and positively, with both personality traits. The Type A/B personality trait subscale did not contribute to the understanding of OFAB (due to low reliability scores).

Thirdly, the financial habit subscales of budgeting, social referents and control of investment proved reliable. Budgeting was significantly correlated to *pride, emotionality, contentment, spending* and *trust*, while social referents were significantly correlated to *emotionality, power, contentment* and *spending*. Only *involvement* and *risk taking* were significantly correlated to control of investment. *Emotionality, contentment* and *spending* were the most influential MM traits in determining OFAB.

Finally, both parents were influential contributors to current financial habits. Men and women had similar habitual patterns regarding budgets, planning and budgeting. Education, unexpected circumstances and trusting others were significant in establishing the respondents' current financial status.

Offering feedback to the respondents of this study would seem like the proverbial "preaching to the converted" as they display both the attitudes and behaviour to stand them in good stead for financial independence upon reaching retirement. It is unlikely that the broader South African population is as fortunate because of the prevalence of single-parent or child-headed households, low education levels, high unemployment, living in informal settlements and low levels of disposable income. Few use financial systems, and the majority cannot save nearly the required 15% or higher for an affordable and comfortable retirement. An individual's best financial efforts may be negated by catastrophic events such as an economic downturn, wars, natural disasters and uncertain political circumstances. It may also be affected by direct conditions such as contracting a dread-disease (for example cancer or HIV/AIDS) or losing one's job. Despite this, an individual still has control of some aspects of life and should strive for the optimal financial attitudes and behaviour.

Furnham (1996) believed the study of money-related beliefs or behaviour was a neglected topic in psychology and that valid measures of money-related behaviours should be investigated. The words of Trzesniewski et al. (1998) could be repeated in that "the present study could not disentangle predictive from concurrent effects" (p. 387). Finally, Lau (1998) lamented that money research by psychologists has been scant. To this end, it is suggested that the study of money traits and money personality be continued and intensified.

REFERENCES

Account Statistics. (2008). Retrieved October 16, 2008, restricted access, from http://www.financialpsychology.com/MyAccount/Account_Stats.asp

Allport, G. (1937). *Personality: A psychological interpretation.* New York, NY: Henry Holt.

Amyx, D., & Mowen, J.C. (1995). Advancing versus delaying payments and consumer time orientation: A personal selling experiment. *Psychology and Marketing, 12*(4), 243-264. doi:10.1002/mar.4220120404

Anthes, W.L., & Lee, S.A. (2001, October). *The financial psychology of 4 life-changing events*. Paper presented at the National Endowment for Financial Education (NEFE), Denver, CO.

Antonides, G. (1989). An attempt at integration of economic and psychological theories of consumption. *Journal of Economic Psychology, 10*, 77-99. doi:10.1016/0167-4870(89)90058-5

Antonides, G. (1996). *Psychology in economics and business: An introduction to economic psychology* (2nd ed.). Boston, MA: Kluwer Academic.

Arnold, J., Cooper, C.L., & Robertson, I.T. (1998). *Work psychology: Understanding human behaviour in the workplace.* Harlow, United Kingdom: Financial Times Management.

Ashton, M. (2010). Retirement: Save 20% of your salary. Retrieved June 20, 2010 from http://wfin24.com/PersonalFinance/Investing/Retirement-Save-20-of-your-salary-20100617

Atkinson, R.L., Atkinson, R.C., Smith, E.E., Bem, D.J., & Hilgard, E.R. (1990). *An introduction to psychology* (10th ed.). Geneva, Switzerland: Cosmopress.

Babbie, E., & Mouton, J. (2001). *The practice of social research* (South African ed.). Cape Town, South Africa: Oxford University Press.

Baek, E., & Hong, G. (2004). Effect of family life-cycle stages on consumer debts. *Journal of Family and Economic Issues, 25*(3), 359-385. doi:10.1023/B:JEEI.0000039946.59422.5f

Barrick, M.R., Mount, M.K., & Judge, T.A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we want to go next? *International Journal of Selection and Assessment, 9*(1/2), 9-30. doi:10.1111/1468-2389.00160

Baumeister, R.F., Campbell, J.D., Krueger, J.I., & Vohs, K.D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest, 4*(1), 1-44. doi:10.1111/1529-1006.01431

Belk, R.W., & Wallendorf, M. (1990). The sacred meanings of money. *Journal of Economic Psychology, 11*(1), 35-67. doi:10.1016/0167-4870(90)90046-C

Bergh, Z.C. (2003a). Behaviouristic or learning perspectives. In Z.C. Bergh & A.L. Theron (Eds.), *Psychology in the work context* (2nd ed.; pp. 319-334). Cape Town, South Africa: Oxford University Press.

Bergh, Z.C. (2003b). The foundations of personality. In Z.C. Bergh & A.L. Theron (Eds.), *Psychology in the work context* (2nd ed.; pp. 277-301). Cape Town, South Africa: Oxford University Press.

Bergh, Z.C (2003c). Dimensional or trait perspectives. In Z.C Bergh, & A.L. Theron, (Eds.), *Psychology in the work context* (2nd ed.; pp. 335-354). Cape Town, South Africa: Oxford University Press.

Bjornebekk, G., & Gjesme, T. (2009). Future time orientation and temperament: Exploration of their relationship to primary and secondary psychopathy. *Psychological Reports, 105,* 275-292. doi:10.2466/pr0.105.1.275-292

Bowles, T. (2008). The relationship of time orientation with perceived academic performance and preparation for assessment in adolescents. *Educational Psychology*, *28*(5), 551-565. doi:10.1080/01443410701880134

Bradley, R.H., & Corwyn, R.F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371-399. doi:10.1146/annurev.psych.53.100901.135233

Brislin, R.W., & Kim, E.S. (2003). Cultural diversity in people's understanding and uses of time. *Applied Psychology: An international review, 52*(3), 363-382. doi:10.1111/1464-0597.00140

Brougham, R.R., Jackson-Lawson, J.M., Hershey D.A., & Trujillo, K.M. (2011). Who pays your debt? An important question for understanding compulsive buying among American college students. *International Journal of Consumer Studies, 35,* 79-85. doi:10.1111/j.1470-6431.2010.00923.x

Browning, M., & Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic Literature, 34*, 1797-1855.

Burgess, S.M. (2005). The importance and motivational content of money attitudes: South Africans with living standards similar to those in industrialised Western countries. *South African Journal of Psychology, 35*(1), 106-126. doi:10.1177/008124630503500107

Buss, A. H. (1989). Personality as traits. *American Psychologist, 41*(11), 1378-1388. doi:10.1037/0003-066X.44.11.1378

Buss, A. H., (2012). *Pathways to individuality: Evolution and development of personality traits.* Washington, DC: American Psychological Association.

Callan, V.J., & Johnson, M. (2002). Some guidelines for financial planners in measuring and advising clients about their levels of risk tolerance. *Journal of Personal Finance, 1*(1), 31-44. Retrieved October 25, 2004 from http://www.riskprofiling.com/Downloads/MeasuringRiskTolerance.pdf

Campbell, J.D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology, 59*, 538-549. doi:10.1037/0022-3514.59.3.538

Capuano, A., & Ramsay, I. (2011, March 23). *What causes suboptimal financial behaviour? An exploration of financial literacy, social influences and behavioural economics* (University of Melbourne Legal Studies Research Paper No. 540). doi:10.2139/ssrn.1793502

Carducci, B.J., & Wong, A.S. (1998). Type A and risk taking in everyday money matters. *Journal of Business and Psychology, 12*, 355-359. doi:10.1023/A:1025031614989

Carlisle-Frank, P. (1991). Examining personal control beliefs as a mediating variable in the health-damaging behavior of substance use: An alternative approach. *The Journal of Psychology, 125*(4), 381-397. doi:10.1080/00223980.1991.10543300

Cattell, R.B. (1965). *The scientific analysis of personality*. Baltimore, MD: Penguin.

Centre for Financial Planning Law. (2006). The post-graduate diploma in financial planning. Retrieved September 2, 2006 from http://law.ufs.ac.za/content.aspx?DCode=Z02

Christopher, A.N., Zabel, K.L., & Jones, J.R. (2008). Conscientiousness and work ethic ideology: A facet-level analysis. *Journal of Individual Differences, 29*(4), 189-198. doi:10.1027/1614-0001.29.4.189

Cowan, J. (2010, May 24). Analyze this. *Canadian Business.* Retrieved May 26, 2010 from www.cbj.ca/

Cramer, D., & Howitt, D. (2004). *The SAGE dictionary of statistics.* Retrieved June 19, 2013, from http://books.google.co.za/books?id=pa3_49Mpso4C&pg=PP1&lpg=PP1&dq=sage+dictionary+of+statistics&source=bl&ots=YpyhhMn-Dq&sig=3IEhEedqndU6lo-dAfZI7bdlGxQ&hl=en&sa=X&ei=1qeTUo-wCYjDyQOHioCoCQ&ved=0CE0Q6AEwBg#v=onepage&q=sage%20dictionary%20of%20statistics&f=false

Cranston, S. (2010, April 2). Leaking bucket. *Financial Mail*. Retrieved April 14, 2010 from http://www.netassets.co.za/article.aspx?id=1128394

Cullis, T., Dolan, L., & Groves, D. (1999). *Psychology for you.* Cheltenham, United Kingdom: Stanley Thornes.

Demyanyk, Y., & Koepke, M. (2012, August 8). Americans cut their debt. *Economic Commentary.* Retrieved October 6, 2013, from http://www.clevelandfed.org/

Daugherty, J.R., & Brase, G.L. (2010). Taking time to be healthy: Predicting health behaviors with delay discounting and time perspective. *Personality and Individual Differences, 48,* 202-207. doi:10.1016/j.paid.2009.10.007

De Torre, J. (2005). *Being is person: Personalism and human transcendence in socio-economic and political philosophy.* Manila, Philippines: University of Asia and the Pacific Foundation.

Dixon, M. (1998, November). From one psychologist to a banker: Get to know your money psyche. *America's Community Banker 7*(11), 25-26.

Dominguez, J., & Robin, V. (1992). *Your money or your life: Transforming your relationship with money and achieving financial independence*. New York, NY: Viking Press.

Du Plessis, M. (Ed.). (2005). *Woordeboek dictionary*. Cape Town, South Africa: Pharos Dictionaries.

Du Preez, L. (2005). Your money personality. *Personal Finance 22*, 11-19. Retrieved April 17, 2005 from www.persfin.co.za

Durvasula, S., & Lysonski, S. (2010). Money, money, money – How do attitudes toward money impact vanity and materialism? – The case of young Chinese consumers. *Journal of Consumer Marketing, 27*(2), 169-179. doi:10.1108/07363761011027268

Economist Intelligence Unit NA Incorporated. (2012). Banks and other financial institutions: Pension funds. *Country Finance: United Kingdom.* Retrieved September 23, 2013 from http://www.researchandmarkets.com/research/gc87x7/country_finance_un

Education is key to better labour market outcomes. (2013, August 1). Retrieved August 29, 2013, from http://beta2.statssa.gov.za/?p=1377

Edwards, D. (1999). Personality. In D.A. Louw & D.J.A. Edwards (Eds.), *Psychology: An introduction for students in Southern Africa* (2nd ed.; pp. 542-603). Johannesburg, South Africa: Heinemann.

Edwards, J.R., Baglioni, A.J., Jr., & Cooper, C.L. (1990). The psychometric properties of Bortner Type A Scale. *British Journal of Psychology, 81*, 315-333. doi:10.1111/j.2044-8295.1990.tb02364.x

Eisenberg, R. (2009, August 17). Americans' appetite for debt did them in [Review of the book *Collateral damaged: The Marketing of Consumer Debt to America* by Charles R. Geisst]. *USA Today.*

Eksteen, L.C. (Ed.). (1986). *Groot woordeboek* (13th ed.). Cape Town, South Africa: J.L. van Schaik.

Elder, G.H. (1974). *Children of the great depression.* Chicago, IL. University of Chicago Press.

Ellen, P.M., Wiener, J.L., & Bone, P.F. (Winter, 2007). Increasing the U.S. retirement savings rate: The influence of individual traits, self theory, and perceptual biases. *American Marketing Association*, 66-67.

Elliot, A.J., & Harackiewicz, J.M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology, 73*(3), 461-475. doi:10.1037/0022-3514.70.3.461

Engelberg, E., & Sjöberg, L. (2006). Money attitudes and emotional intelligence. *Journal of Applied Social Psychology, 36*(8), 2027-2047. doi:10.1111/j.0021-9029.2006.00092.x

Eysenck, H.J. (1992). Four ways, five factors are not basic. *Personality and Individual Differences, 13*, 667-674. doi:10.1016/0191-8869(92)90237-J

Faff, R., Hallahan, T., & McKenzie, M. (2011). Women and risk tolerance in an aging world. *International Journal of Accounting and Information Management, 12*(2), 100-117. doi:10.1108/18347641111136427

Field, L. (2007). Start saving young and remain vigilant. *Business Day*. Retrieved August 7, 2007, from http://www.netassets.co.za/retirement/plan.asp

Financial Sector Charter. (2002). Retrieved August 20, 2002 from http://www.westerncape.gov.za/files/documents/2004/5/the_finance_charter.pdf

FinMark Trust. (2004, March). *Financial literacy scoping study and strategy project – Final report*. Retrieved May 28, 2004 from ftp://ftp.fsb.co.za/public/Consumer%20Education/FinLit_%20Report.pdf

Flammer, A. (1995). Developmental analysis of control beliefs. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 69-113). New York, NY: Cambridge University Press.

Flynn, M. (2010). Who would delay retirement? Typologies of older workers. *Personnel Review, 39*(3), 308-324. doi:10.1108/00483481011030511

Forman, N. (1987). *Mind over money.* Toronto, Canada: Doubleday.

Foster, D. (1999). Personality. In D.A. Louw & D.J.A. Edwards (Eds.), *Psychology: An introduction for students in Southern Africa* (2nd ed.; pp. 718-775). Johannesburg, South Africa: Heinemann.

Funfgeld, B., & Wang, M. (2009). Attitudes and behaviour in everyday finance: Evidence from Switzerland. *International Journal of Bank Marketing, 27*(2), 108-128. doi:10.1108/02652320910935607

Furnham, A. (1984). Many sides of the coin: The psychology of money usage. *Personality and Individual Differences, 5*, 501-509. doi:10.1016/0191-8869(84)90025-4

Furnham, A. (1996). Attitudinal correlates and demographic predictors of monetary beliefs and behaviours. *Journal of Organizational Behavior, 17*, 375-388. doi:10.1002/(SICI)1099-1379(199607)17:4<375::AID-JOB767>3.0.CO;2-8

Furnham, A., & Okamura, R. (1999). Your money or your life: Behavioral and emotional predictors of money pathology. *Human Relations, 52*, 1157-1177. doi:10.1177/001872679905200903

Gallo, E.F. (2001). Understanding your relationship with money. *Journal of Financial Planning, 14*(5), 46-50.

Gibbs, P.T. (1998). Time, temporality and consumer behaviour. *European Journal of Marketing, 32*, 993-1007. doi:10.1108/03090569810243622

Gist, M.E., & Mitchell, T.R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *The Academy of Management Review, 17*(2), 183-211.

Gitman, L.J. (1991). *Principles of managerial finance* (6th ed.). San Diego, CA: Harper Collins.

Gottfurcht, J. (2005). Retrieved October 19, 2005, from http://www.psychologyofmoney.com/s_profile.html

Grable, J.E. (2000). Financial risk tolerance and additional factors that affect risk taking in everyday money matters. *Journal of Business and Psychology, 14*, 625-630. doi:10.1023/A:1022994314982

Greene, B.A., & DeBacker, T.K. (2004, June). Gender and orientations toward the future: Links to motivation. *Educational Psychology Review, 16*(2), 91-120. doi:10.1023/B:EDPR.0000026608.50611.b4

Gregg, D.W. (1992). Human wealth-span: The financial dimensions of successful aging. In N.E. Cutler, D.W. Gregg, & M.P. Lawton (Eds.), *Aging, money, and life satisfaction, aspects of financial gerontology* (pp. 169-182). New York, NY: Springer.

Gurney, K. (1988). *Your money personality: What it is and how you can profit from it*. Sarasota, FL: Financial Psychology Corporation.

Gurney, K. (2005, March 16). What is financial psychology? Retrieved October 19, 2005, from http://financialpsychology.blogspot.com/2005/03/what-is-financial-psychology.html

Gurney, K. (2007). Kids have money personality too. Retrieved August 7, 2007, from http://www.kathleengurney.com/articles/archives/110-kidshavemoneypersonalitiestoo.html

Gurney. K, & Dowd, V. (2004). *The changing financial role for women* (Information leaflet of Money Solutions Pty Ltd ABN 36 105 811 836).

Gurney, K., & Srybnik, M. (2001, December). Listen up. *Investment Advisor*, 36-40.

Hadnot, I.J. (2003, January 5). Researchers link mental health, feelings about wealth. *The Dallas Morning News*. Retrieved September 6, 2003 from www.dallasnews.com/

Handgraaf, M.J.J., & Van Raaij, W.F. (2005, June). Fear and loathing no more: The emergence of collaboration between economists and psychologists. *Journal of Economic Psychology, 26*(3), 387-391. doi:10.1016/j.joep.2004.12.003

Haubl, R. (2004). Breaking the taboo: Talking openly about money [English abstract]. *Gruppendynamik, 35*(3), 291-306. doi:10.1007/s11612-004-0028-3

Hawkins, D.I., Mothersbaugh, D.L., & Best, R.J. (2007). *Consumer behavior: Building marketing strategy* (10th. ed.). New York, NY: McGraw-Hill.

Hayhoe, C.R., Leach, L.J., & Turner, P.R. (1999). Discriminating the number of credit cards held by college students using credit and money attitudes. *Journal of Economic Psychology, 20*, 643-656. doi:10.1016/S0167-4870(99)00028-8

Hayhoe, C.R., Leach, L.J., Turner, P.R, Bruin, M.J., & Lawrence, F.C. (2000). Differences in spending habits and credit use of college students. *The Journal of Consumer Affairs, 34*(1), 113-133. doi:10.1111/j.1745-6606.2000.tb00087.x

Health Check. (2007). [Online questionnaire]. Retrieved July 24, 2007, from http://www.understandingmoney.gov.au/tools/Consumer/healthcheck

Henry, R.A., Weber, J.G., & Yarborough, D. (2001). Money management practices of college students. *College Student Journal, 35*(2), 244-249. Retrieved October 3, 2009 from http://www.questia.com/library/p1917/college-student-journal

Hershey, D.A., Walsh, D.A., Brougham, R., Carter, S., & Farrell, A. (1998 July-August). Challenges of training pre-retirees to make sound financial planning decisions. *Educational Gerontology, 24*, 447-470. doi:10.1080/0360127980240503

Holden, C. (2002, October 18). Lab-based researchers earn prize in economics. *Science, 298*(5593), 528. doi:10.1126/science.298.5593.528

Huhmann, B.A., & McQuitty, S. (2009). A model of consumer financial literacy. *International Journal of Bank Marketing, 27*(4), 270-293. doi:10.1108/02652320910968359

Huston, S. (2010). Measuring financial literacy. *Journal of Consumer Affairs,* 44(2), 296-316. doi:10.1111/j.1745-6606.2010.01170.x

Ingram, W. (2013, August). *How much to save for retirement* [Video file]. Retrieved August 7, 2013, from http://www.fin24.com/Savings/Multimedia/How-much-to-save-for-retirement-20130716

Into, F.H. (2003). Older women and financial management: strategies for maintaining independence. *Educational Gerontology, 29*, 825-839. doi:10.1080/716100365

Investment Psychology Solutions. (2006). Retrieved March 9, 2006, from http://www.ips-online.co.za

Investment Psychology Solutions. (2008). Retrieved June 8, 2008, from http://www.ips-online.co.za/intro.html

John, O.P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L.A. Pervin & O.P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed.; pp. 102-138). New York, NY: Guilford Press.

Judge, T.A., & LePine, J.A. (2007). The bright and dark sides of personality: Implications for personal selection in individuals and team contexts. In J. Langon-Fox, C. Cooper, & R. Klimoski (Eds.), *Research companion to the dysfunctional workplace: Management challenges and symptoms* (pp. 332-355). Cheltenham, United Kingdom: Edward Elgar.

Judge, T.A., Locke, E.A., Durham, C.C., & Kluger, A.N. (1998). Dispositional effects on job and life satisfaction: the role of core evaluations. *Journal of Applied Psychology, 83*(1), 17-34. doi:10.1037/0021-9010.83.1.17

Kane, A. (2008, June). *The Scottish widows' UK pension report.* Edinburgh, United Kingdom.

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *American Economic Review, 93*(5), 1449-1475. Retrieved September 14, 2013 from http://www.jstor.org/stable/3132137

Kahneman, D., & Tversky, A. (1979). Prospect theory: an analysis of decision making under risk. *Econometrica.*

Kerlinger, F.N. (1986). *Foundations of behavioral research* (3rd ed.). Orlando, FL: Harcourt Brace.

Kerlinger, F.N., & Lee, H.B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt.

Kirby, K.N., & Marakovic´, N.N. (1996). Delay-discounting probabilistic rewards: Rates decrease as amounts increase. *Psychonomic Bulletin and Review, 3*(1), 100–104. doi:10.3758/BF03210748

Knight, W. (2011). Marketing opportunity: Adding value to stokvels who are sophisticated business entities. Retrieved November 12, 2011, from http://www.themarketingsite.com/live/content.php?Item_ID=3361

Koh, L. (2008). *Your money personality: Unlock the secret to a rich and happy life.* Wellington, New Zealand: AWA Press.

Kuzmina, J. (2010). Emotion's component of expectations in financial decision making. *Balti Journal of Management, 5*(3), 295-306. doi:10.1108/17465261011079721

Lai, C. (2010). How financial attitudes and practices influence the impulsive buying behavior of college and university students. *Social Behavior and Personality, 38*(3), 373-380. doi:10.2224/sbp.2010.38.3.373

Landau, R. (1995). Locus of control and socioeconomic status: Does internal locus of control reflect real resources and opportunities or personal coping abilities? *Social Science and Medicine, 41*(11), 1499-1505. doi:10.1016/0277-9536(95)00020-8

Lanza, M.L. (1996). Money: personal issues affect professional practice**.** *Clinical Nurse Specialist 10*(6), 310-317.

Lau, S. (1998). Money: What it means to children and adults. *Social Behavior and Personality, 26*(3), 297-306. doi:10.2224/sbp.1998.26.3.297

Lea, S.E.G. (1999). Credit, debt and problem debt. In P. Earle & S. Kemp (Eds.), *The Elgar companion to consumer research and economic psychology* (pp. 139-144). Cheltenham, United Kingdom: Edward Elgar.

Liebert, R.M., & Spiegler, M.D. (1990). *Personality: Strategies and issues.* Pacific Grove, CA: Brooks/Cole.

Linder, R. (2005, September 22- 24). *Mastering your money personality: How personality type influences financial behavior*. Paper presented at Convergence: Maximizing Human Potential in Organizations, San Francisco, CA. Retrieved October 19, 2005, from http://www.raylinder.net/resources/

Livingstone, S.M., & Lunt, P.K. (1992). Predicting personal debt and debt repayment: Psychological, social, and economic determinants. *Journal of Economic Psychology, 13*(1), 111-134. doi:10.1016/0167-4870(92)90055-C

Loix, E., Pepermans, R., Mentens, C., Goedee, M., & Jegers, M. (2005). Orientation toward finances: Development of a measurement scale. *The Journal of Behavioral Finance, 6*(4), 192-201. doi:10.1207/s15427579jpfm0604_3

Lunt, P. (1996, April). Rethinking the relationship between economics and psychology. *Journal of Economic Psychology, 17*(2), 275-287. doi:10.1016/0167-4870(96)00007-4

Mackenzie, D.C. (1974). *The Oxford school dictionary* (3rd ed.). Oxford, United Kingdom: Clarendon Press.

Malan, M. (2003, August 9). Jou geldpersoonlikheid en wat dit als beteken [Your money personality and what it means]. *Die Burger.* Retrieved August 13, 2003 from www.dieburger.com

Manuel, T. (2011, November 3). Address by Minister Trevor Manuel to the 2011 Consumer Rights Forum, Gallagher Convention Centre, Midrand, South Africa. Retrieved November 11, 2013, from http://www.thepresidency.gov.za/pebble.asp?relid=5188

Maxfield, S., Shapiro, M., Gupta, V., & Hass, S. (2010). Gender and risk: Women, risk taking and risk aversion. *Gender in Management: An International Journal, 25(7),* 586-604. doi:10.1108/17542411011081383

McClelland, D.C., Atkinson, J.W., Clark, R.A., & Lowell, E.L. (1953). *The achievement motive.* New York, NY: Appleton-Century-Crofts.

McCrae, R.R., & Costa, P.T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*(1), 81-90. doi:10.1037/0022-3514.52.1.81

McCrae, R.R., & John, O.P. (1992). An introduction to the five factor model and its applications. *Journal of Personality, 60*, 175–215. doi:10.1111/j.1467-6494.1992.tb00970.x

McGuire, W.J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology: Vol. 2. Special fields and applications* (pp. 233-346). New York, NY: Random House.

Meyer, W.F., Moore, C., & Viljoen, H.G. (1990). *Persoonlikheidsteorieë – van Freud tot Frankl* [Personality theory – from Freud to Frankl]. Johannesburg, South Africa: Lexicon.

Mischel, W. (1986). *Introduction to personality* (4th ed.). New York, NY: Holt, Rinehort and Winston.

Mischel, W. (2004). Toward an integrative science of the person. *Annual Review of Psychology*, *55,* 1–22. doi:10.1146/annurev.psych.55.042902.130709

Mittra, S. (1990). *Practicing financial planning.* Englewood Cliffs, NJ: Prentice Hall.

Morris, C.G. (1988). *Psychology: An introduction* (6th ed.). Englewood Cliffs, NJ: Prentice Hall.

Multilingual glossary of psychology terms. (2007). Cape Town, South Africa: Pearson.

Murphy, K.R., & Dzieweczynski, J.L. (2005). Why don't measures of broad dimensions of personality perform better as predictors of job performance? *Human Performance, 18*(4), 343-357. doi:10.1207/s15327043hup1804_2

National Endowment for Financial Education. (2006). Closing the gap between knowledge and behavior: Turning education into action. *Journal of 2006 and Planning, 17*(1), 73-90. Retrieved November 11, 2006 from http://afcpe.org/publications/journal-articles.php

Nettle, D. (2006). The evolution of personality variation in humans and other animals. *American Psychologist, 61,* 622-631. doi:10.1037/0003-066X.61.6.622

Nevins, J., Bearden, W., & Money, B. (2007). Ethical values and long-term orientation. *Journal of Business Ethics, 71*(3), 261-274. http://econpapers.repec.org/article/kapjbuset/v_3a71_3ay_3a2007_3ai_3a3_3ap_3a261-274.htm

Norton, G. (1999). Stress and coping. In D.A. Louw & D.J.A. Edwards (Eds.), *Psychology: An introduction for students in Southern Africa* (2nd ed.; pp. 606-663). Johannesburg, South Africa: Heinemann. doi:10.1007/s10551-006-9138-x

Norvilitis, J.M., Osberg, T.M., Young, P., Merwin, M.M., Roehling, P.V., & Kamas, M.M. (2006). Personality factors, money attitudes, financial knowledge, and credit-card debt in college students. *Journal of Applied Social Psychology, 36*(6), 1395-1413. doi:10.1111/j.0021-9029.2006.00065.x

Nunnally, J. C. (1967). *Psychometric theory*. New York, NY: McGraw-Hill.

Nunnally, J. C., & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

O'Guinn, T.C, & Faber, R.J. (1989). Compulsive buying: A phenomenological exploration. *Journal of Consumer Research, 16*, 147-157. doi:10.1086/209204

Old Mutual. (2013). *2013 Retirement monitor summary*. Retrieved August 29, 2013, from www.oldmutual.co.za/retirementmonitor

Olsen, R.A, & Cox, C.M. (2001). The Influence of gender on the perception and response to investment risk: The case of professional investors. *Journal of Psychology & Financial Markets, 2,* 29-36. doi.org/10.1207/S15327760JPFM0201_3

Ones, D.S., Viswesvaran, C., & Dilchert, S. (2005). Personality at work: Raising awareness and correcting misconceptions. *Human Performance, 18*(4), 389-404. doi:10.1207/s15327043hup1804_5

Pine, K.J., & Fletcher, B. (2011). Women's spending behaviour is menstrual-cycle sensitive. *Personality and Individual Differences, 50,* 74-78. doi:10.1016/j.paid.2010.08.026

Pocket Oxford-Duden German dictionary (2nd ed.). (2000). Oxford, United Kingdom: Oxford University Press.

Powell, M., & Ansic, D. (1997, November). Gender differences in risk behaviour in financial decision-making: an experimental analysis. *Journal of Economic Psychology, 18*(6), 605-628. doi:10.1016/S0167-4870(97)00026-3

Prince, M. (1993). Women, men and money styles. *Journal of Economic Psychology, 14*, 175-82. doi:10.1016/0167-4870(93)90045-M

Quarterly labour force survey. (July 2013). Retrieved August 29, 2013, from http://www.statssa.gov.za/publications/P0211/P02111stQuarter2013.pdf

Ratner, B. (2013). The correlation coefficient: definition. Retrieved August 11, 2013, from http://www.dmstat1.com/res/TheCorrelationCoefficientDefined.html

Raymond, J. (2005, April). Mind over money. *Health (Time Inc. Health), (19)*3, 102-106.

Reber, A.S., & Reber, E.S. (2001). *Dictionary of psychology* (3rd ed.). London, United Kingdom: Penguin Books.

Reimers, S., Maylor, E.A., Stewart, N., & Chater, N. (2009). Associations between a one-shot delay discounting measure and age, income, education and real-world impulsive behavior. *Personality and Individual Differences, 47*, 973–978. doi:10.1016/j.paid.2009.07.026

Retirement [Brochure]. (2013). Retrieved October 6, 2013, from https://www.fnb.co.za/themes/IsRetirementJustAFantasy.html

Robbins, S.P. (1993). *Organizational behavior* (6th ed.). Englewood Cliffs, NJ: Prentice Hall.

Roberts, J.A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affairs, 35*(2), 213-239. doi:10.1111/j.1745-6606.2001.tb00111.x

Roberts, J.A., & Sepulveda, C.J. (1999). Demographics and money attitude: A test of Yamauchi & Templer's (1982) Money Attitude Scale in Mexico. *Personality and Individual Differences, 27*, 19-35. doi:10.1016/S0191-8869(98)00241-4

Rodriguez, L.T. (2001, February). The wind beneath their wings: The moderating effects of social support on the entrepreneur and entrepreneurial performance outcomes. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 61*(7-A), 2806.

Ronin, R. (2005). Financial psychology. Retrieved October 19, 2005, from http://www.drronin.com/financial-psych.html

Rose, G.M., & Orr, L.M. (2007). Measuring and exploring symbolic money meanings *Psychology & Marketing, 24*(9), 743-761. doi:10.1002/mar.20182

Rosenberg, M. (1986). Self-concept from middle childhood through adolescence. In J. Suls & A.G. Greenwald (Eds.), *Psychological perspectives on the self* (3rd ed.; pp. 107-142). Hillsdale, NJ: Erlbaum.

Roszkiewicz, M. (2006). Attitudes towards saving in Polish society during transformation. *Social Indicators Research, 78*, 429-452. doi:10.1007/s11205-005-1605-8

Rotter, J. (1954). *Social learning and clinical psychology.* Englewood Cliffs, NJ: Prentice-Hall.

Schubert, R., Brown, M., Gylser, M. & Brachinger, H.W. (1999). Financial decision-making: Are women really more risk-averse? *The American Economic Review, 89*(2), 381-385. doi:10.1257/aer.89.2.381

Shane, A. (2003, May 19). The investor within: Balancing your psychological make-up with your financial make-up. *American Medical News*. http://www.aliceshane.com/the_investor_within_39420.htm

Shiller, R.J. (2003). From efficient market theory to behavioral finance. *Journal of Economic Perspectives, 17*(1), 83-104. doi:10.1257/089533003321164967

Sjöberg, L., & Engelberg, E. (2009). Attitudes to economic risk taking, sensation seeking and values of business students specializing in finance. *The Journal of Behavioral Finance, 10,* 33-43. doi:10.1080/15427560902728712

Smith, V.L. (1962, April). An experimental study of competitive market behavior. *Journal of Political Economy 70*(2), 111-137. Retrieved February 16, 2014 from http://www.jstor.org/stable/1861810

Soane, E., & Chmiel, N. (2005). Are risk preferences consistent? The influence of decision domain and personality. *Personality and Individual Differences, 38*. 1781-1791. doi:10.1016/j.paid.2004.10.005

South African Government Services. (2013). *Old age pension.* Retrieved July 20, 2013, from http://www.services.gov.za/services/content/Home/ServicesForPeople/Socialbenefits/oldagegrant/

Spangenberg, J.J., & Shuda, S. (1997, March). Type A behaviour and hostility in final-year South African students. *South African Journal of Psychology, 27*(1), 30-36. Retrieved September 28, 2008 from http://www.journals.co.za/ej/ejour_sapsyc.html

Staffer, B. (2007, August 5). Clear up the debt and live happily ever after. *Sunday Times*. Retrieved August 7, 2007, from http://www.netassets.co.za/personalfinance/personalfinance.asp?websitecontentitemID=69148

Statman, M. (1999). Behavioral finance: Past battles and future engagements. *Financial Analysis Journal, 55*(6), 18-27. doi:10.2469/faj.v55.n6.2311

StatSoft, Inc. (2012). STATISTICA (Version 11) [Computer software]. Retrieved from www.statsoft.com

Stone, B., & Maury, R.V. (2006). Indicators of personal financial debt using a multi-disciplinary behavioral model. *Journal of Economic Psychology, 27*(4), 543-556. doi:10.1016/j.joep.2005.11.002

Swart, N. (2003). *Manage your money: Basic financial life skills for South Africans.* Pretoria, South Africa: Van Schaik.

Symbaluk, D.G., Heth, C.D., Cameron, J., & Pierce, W.D. (1997, March). Social modelling, monetary incentives, and pain endurance: The role of self-efficacy and pain perception. *Personality and Social Psychology Bulletin, 23*(3), 258-267. doi:10.1177/0146167297233005

Tang, T.L. (1992). The meaning of money revisited. *Journal of Organizational Behavior, 13*, 197-202. doi:10.1002/job.4030130209

Tang, T.L. (1993). The meaning of money: Extension and exploration of the money ethic scale in a sample of university students in Taiwan. *Journal of Organizational Behavior, 14*, 93-99. doi:10.1002/job.4030140109

Tang, T.L, & Gilbert, P.R. (1995). Attitudes toward money as related to intrinsic and extrinsic job satisfaction, stress and work-related attitudes. *Personality and Individual Differences, 19*(3), 327-332. doi:10.1016/0191-8869(95)00057-D

Taylor, R. (1990). Interpretation of correlation coefficient: A basic review. *Journal of Diagnostic Medical Sonography, 6*, 35-39. doi:10.1177/875647939000600106

Tokunaga, H. (1993). The use and abuse of consumer credit: Application of psychological theory and research. *Journal of Economic Psychology, 14*(2), 285-316. doi:10.1016/0167-4870(93)90004-5

Traut-Mattausch, E., & Jonas, E. (2011). Why do people save? The Influence of financial satisfaction and income on saving. *Journal of Psychology, 219*(4), 246-252. doi:10.1027/2151-2604/a000079

Troisi, J.D., Christopher, A.N., & Marek, P. (2006). Materialism and money spending disposition as predictors of economic and personality variables. *North American Journal of Psychology, 8*(3), 421-436. Retrieved January 7, 2007 from http://www.questia.com/library/p117320/north-american-journal-of-psychology/i2860106/vol-8-no-3-december

Trzesniewski, K.H, Moffit, T.E., Poulton, R., Donnellan, M.B., Robins, R.W., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology, 42* (2), 381-390. doi:10.1037/0012-1649.42.2.381

Understanding money. (2007). Retrieved July 24, 2007, from http://www.bankers.asn.au/Default.aspx?ArticleID=1018

Utsch, A., & Rauch, A. (2000). Innovativeness and initiative as mediators between achievement orientation and venture performance. *European Journal of Work and Organizational Psychology, 9*(1), 45-62. doi:10.1080/135943200398058

Uzelac, E. (2002). The money personality. *Research*. Retrieved October 17, 2002, from http://www.financialpsychology.com/files/ResearchMagazine.PDF

Van der Bank, M., & Rothmann, S. (2002). Dispositional factors and coping as predictors of expatriates' performance and desire to terminate the assignment. *Management Dynamics, 11*(4), 38-50. http://reference.sabinet.co.za/sa_epublication/mandyn

Van Tonder, J. (2003, November 9). Hy jag vir geld, dog sy geld jag hom [He chases after money, yet his money chases him]. *Rapport.* www.rapport.co.za

Van Tonder, J. (2004, May 2). Bekyk kliënt se sielkunde, sê Raad [Consider client's psychology, says Council]. *Rapport.* www.rapport.co.za

Van Tonder, R. (2011). *Non-remuneration predictors of intention to quit among personal financial advisors* (Unpublished master's thesis). Stellenbosch University, South Africa.

Van Zyl, J. (2003, April 9). Work at a healthy money self-image. *Finance Week*, 54.

Wade, C., & Tavris, C. (1993). *Psychology* (3rd ed.). New York, NY: HarperCollins.

Wang, L., Lu, W., & Malhotra, N.K. (2011). Demographics, attitude, personality and credit card features correlate with credit card debt: a view from China. *Journal of Economic Psychology, 32,* 179-193. doi:10.1016/j.joep.2010.11.006

Wang, P. (2006, June 1). What money type are you? Retrieved October 19, 2006, from http://money.cnn.com/2005/07/07/pf/money_type_0508/

Warburton, L. (2013, August). Money is power, freedom and independence. Retrieved August 7, 2013, from http://www.fin24.com/Womens-Wealth/Multimedia/Money-is-power-freedom-and-independence-20130807

Warren, A.M., & Kelloway, E.K. (2010). Retirement decisions in the context of the abolishment of mandatory retirement. *International Journal of Manpower, 31*(3), 286-305. doi:10.1108/01437721011050585

Webley, P., & Nyhus, E.K. (2001). Life-cycle and dispositional routes into problem debt. *British Journal of Psychology, 92*, 423-446. doi.org/10.1348/000712601162275

Weiten, W. (2000). *Psychology: Themes and variations* (4th ed.). Belmont, CA: Wadsworth.

Weldon, H.W. (2005, October - December). How to retire – comfortably. *Business and Economic Review,* 22-24. Retrieved September 19, 2008 from http://law-journals-books.vlex.com/vid/how-to-retire-comfortably-62707183

Whitfield, B. (2011, May 26). The death of retirement. *FINweek,* 13-18. http://www.fin24.com/Finweek/Cover-Story/The-death-of-retirement-20110523

Williams, F.L. (1991). Financial management practices by socioeconomic characteristics and their relationship to productivity, satisfaction with time management, and quality of life. In *S.* Danes (Ed.), *Financial challenges for the twenty-first century: Proceedings of the annual meeting of the Association for Financial Counseling and Planning Education* (pp. 100-125), Kansas City, MO.

Williams, T. (2007). Empowerment of whom and for what? Financial literacy education and the new regulation of consumer financial services. *Law & Policy, 29*(2), 226-256. doi:10.1111/j.1467-9930.2007.00254.x

Winnett, A., & Lewis, A. (1995). Household accounts, mental accounts, and saving behaviour: Some old economics rediscovered? *Journal of Economic Psychology, 16*, 431-448. doi:10.1016/0167-4870(95)00019-K

Yamauchi, K.T., & Templer, D.I. (1982). The development of a Money Attitude Scale. *Journal of Personality Assessment, 46*(5), 522-528. doi:10.1207/s15327752jpa4605_14

Your Money Personality Profiler. (2005). Retrieved October 19, 2005 from http://www.sorted.org.nz/calculators/personality-profile/index.php

Zhang, L. (2009). An exchange theory of money and self-esteem in decision making. *Review of General Psychology, 13*(1), 66-76. .doi;10.1037/a0014225

Zimmerman, S. (2013, February 20). New financial planning assessment tool helps financial planners find their clients' psychological money profiles. *PR Newswire.* Retrieved March 10, 2013 from http://www.prnewswire.com/news-releases/new-financial-planning-assessment-tool-helps-financial-planners-find-their-clients-psychological-money-profiles-192010201.html

Ziv, Y. (2007, April). *The psychology of money* [Public presentation]. George, South Africa.

Ziv, Y. (2011). Dare to talk about money. Retrieved October 30, 2011, from http://www.yaronziv.com/money.html

Zuma, J. (2013, March 7). Address by his Excellency, President Jacob Zuma, at the Annual National Teaching Awards, Gallagher Estate, Midrand, South Africa. Retrieved November 11, 2013, from http://www.thepresidency.gov.za/pebble.asp?relid=15026

APPENDICES

APPENDIX A: Main characteristics of Moneymax personalties

ENTREPRENEURS Success orientated; Like to perform and enjoy a challenge; Will take risks if it lead to more success; Money as such not a measurement of success, use it more as an indicator of personal success; Like to earn money; Confident, maybe sometimes need to consider the advice of experts	**HUNTERS** Enjoy to have money though prefer spending to saving; Enjoy material possessions; Impulsive; Income and assets not in balance; Do not like the word "budget"; Anxiety over money the highest of all groups	**SAFETY PLAYERS** Highest risk-averse group of all – like to play it safe; Fear of losing their money – safety is driving force behind money management choices; Catch 22: they do not really want to be involve in managing their money, but they also do not trust others to do it for them; Keep money in the bank
MONEY MASTERS Highest in wealth, gather capital goods, assets; Balanced approach to money management; Harmony between: calculated risks, trust in others, confident regarding money management; Pride	**ACHIEVERS** Like to be involved in managing their money; to have control – highest of all groups i.e. real estate; Conservative in risk taking; Proud of their financial decisions; Like to decide; to save and see money grow	**PERFECTIONISTS** Want to make a perfect decision – no mistakes; Prefer to be in control; Mostly not happy with current financial status; Also not keen to take risk; Rather save than spend; Analytical
HIGH ROLLERS Loves sensation and stimulation, competitive – enjoy a challenge; Highest risk takers of all groups; Do not prefer to be involved in their money management; Emotional; Like spending as oppose to saving; Needs money management discipline; Very successful if they know how to work with their preferences; Always striving to be more successful	**PRODUCERS** Hard work brings financial success; Most of the time feel that input and output are not related; Not happy about their financial status; Not very confident about their financial success	**OPTIMISTS** Do not experience anxiety about money; Content; Positive about life and money, believe in good luck; Money not the most important thing in life; Like others to manage their money, not high level of involvement; Enjoy their money, enjoy spending sometimes impulsive; Investment: like a constant income stream; Worked hard for their money, now they have to enjoy it; Red light: does not take control over their money

APPENDIX B:
Short message service invitation to participate in research

Dear MoneyMax XXX *(e.g. Hunter, Safety Player)*

I am a Masters student attempting to contact all South African citizens like yourself who have completed a MoneyMax questionnaire. I cannot speak to everyone personally therefore I have had to resort to using this sms option. I would like to email/fax a survey to you which forms part of my thesis. Your assistance would be appreciated. Please reply on this number or email bcprinsloo@telkomsa.net with an email/fax which I can use to send survey.

Kind regards

Cindy Prinsloo

APPENDIX C:

E-mail / facsimile in response to willingness to participate

Dear **XXX**

As per my sms today, attached please find the questionnaire and explanatory letter for my research.

Thank you for your willingness to participate. I rely heavily on all the volunteers in order to complete my degree. I would appreciate it if the questionnaire could be returned before the end of October.

Kind regards

Cindy Prinsloo

044 XXX (h) 082XXX 083XXX

bcprinsloo@telkomsa.net

APPENDIX D: Moneymax Profile

Moneymax® Profile

I hereby agree not to disclose the questions to anyone, nor to make copies of this questionnaire.

NAME ______________________ ADDRESS ______________________

CITY, STATE, ZIP ______________________ PHONE ____________ DATE ____________

This page contains some statements that could be used to describe a person's attitudes about financial decisions. For each statement, please "X" the one box after the statement which best describes how much you **agree** or **disagree** with that statement. The choices are: "Agree Strongly," "Agree Somewhat," Disagree Somewhat," or "Disagree Strongly." **There are no "right" or "wrong" answers.**

*Please do not leave any questions blank. It is important that you answer every question, otherwise we will be unable to determine your **Moneymax Profile.***

	AGREE		DISAGREE	
	STRONGLY	SOMEWHAT	SOMEWHAT	STRONGLY
1. I usually get depressed after making a financial decision	☐	☐	☐	☐
2. I spend money whenever I'm frustrated or angry and it releases the tension	☐	☐	☐	☐
3. People can always make money if they learn more about it	☐	☐	☐	☐
4. I would like to play an important and active role in managing my investments	☐	☐	☐	☐
5. Saving my money generally gives me greater satisfaction than spending it	☐	☐	☐	☐
6. I enjoy the feeling of "thrill" associated with gambling	☐	☐	☐	☐
7. I often reflect on my past financial results of decisions before I proceed	☐	☐	☐	☐
8. I feel there is no such thing as luck where money is concerned	☐	☐	☐	☐
9. I feel panicky when I have to make a financial decision I wasn't expecting	☐	☐	☐	☐
10. If people try hard enough, they will usually reach their financial goals in life	☐	☐	☐	☐
11. I like to be highly involved in my investments and financial projects	☐	☐	☐	☐
12. I'm not looking for a secret way to get rich – I'm quite satisfied with the money I have	☐	☐	☐	☐
13. I feel it's a good idea to save my money instead of spending it	☐	☐	☐	☐
14. While making financial decisions, I think about recent past financial decisions	☐	☐	☐	☐
15. The fact that chance or luck plays a significant role in my wealth is impossible for me to believe	☐	☐	☐	☐
16. I am driven to acquire prestige with my money	☐	☐	☐	☐
17. All in all, I am inclined to feel that I am a financial failure	☐	☐	☐	☐
18. Most people are basically honest when it comes to money	☐	☐	☐	☐
19. I wish financial decisions did not bother me so much	☐	☐	☐	☐
20. I would like my financial pursuits to buy me fame	☐	☐	☐	☐
21. I live within my financial means and am content with what I have	☐	☐	☐	☐
22. I feel that I don't have much to be proud of as far as financial success is concerned	☐	☐	☐	☐
23. Most people will act as "Good Samaritans" with their money if given the opportunity	☐	☐	☐	☐
24. I want to use my money to become an important person in the community	☐	☐	☐	☐
25. I spend money when I'm unhappy and it makes me feel better	☐	☐	☐	☐
26. People can be as successful with money as the time they're willing to devote to it	☐	☐	☐	☐
27. I have as much money as I need to be happy	☐	☐	☐	☐
28. Most people do not hesitate to go out of their way to help someone in financial trouble	☐	☐	☐	☐

APPENDIX E:

Financial Independence Scale (FIScale)

This questionnaire, together with the already completed Moneymax Profile, is part of a study attempting to predict optimal financial attitudes and behaviour. Optimal financial attitudes and behaviour is defined as measurable attitudes and behaviour that maximises the likelihood that an individual would experience financial security. Section A is demographic and socio-economic information required for comparison purposes. The remaining sections (B – D) are measures of financial orientations, financial behaviour and attitudes as well as determinants of financial status. All sections must please be completed. Completing this questionnaire should take less than 30 minutes.

Return the completed questionnaire by placing your name and surname on a covering facsimile to 044 xxx or on the email to bcprinsloo@telkomsa.net A unique number will be allocated to this questionnaire to ensure your anonymity.

Two participants in the research stand a chance of winning a free Moneymax Profile, for a person of their choice. Return the completed questionnaire within one (1) week of receipt to stand a chance to win. **By returning the questionnaire you consent to the researcher accessing and using your existing Moneymax profile. Thank you for participating in this research.**

(Office encoding:)

Section A: Demographic and socio-economic details

Instructions: Kindly read each statement or question and place an "**X**" or answer in the relevant block.

1. **Gender:**

Male	Female

2. **Age**:

3. **Race group:**

African	
Coloured	
Indian	
White	
Other	

4. **Employment status:**

Learner / student	
Self-employed	
Employed	
Unemployed	
Retired	

5. **What predominant type of occupation do you / did you (if retired or currently unemployed) have?**

Manufacturing	Administrative / Clerical	Professional	Entertainment	Political

Sales	Personal Services	Agricultural	Sport	Other (please specify)

6. **Marital status**:

Single	
Married	
Widowed	
Divorced	
Living together	

7. **Number of dependants:**

8. **Highest level of education**:

Primary school	
High school	
Matric / Grade 12	
Incomplete tertiary education	
Tertiary qualification	

9. **Residential status:**

Living in own house / flat	
Living in rented house / flat	
Living in a hostel / dormitory	
Other (please specify)	

10. **Personal gross (before deductions) annual income bracket**

below R40 000	
R40 000- R100 000	
R100 001 – R160 000	
R160 001 – R220 000	
R220 001 – R300 000	
R300 001 – R400 000	
more than R400 001	

11. **Total gross (before deductions) annual income of household**

below R80 000	
R80 000- R200 000	
R200 001 – R320 000	
R320 001 – R440 000	
R440 001 – R600 000	
R600 001 – R800 000	
more than R800 001	

12. **If you own property, what is the current total value thereof?** R _______________

Which of the following financial instruments do you use?

	Financial instrument	**Yes = √** **No = X**	**Personal reason for use or non-use**
13.	Cheque account		
14.	Savings account		
15.	Post Office Savings		
16.	Long-term investments		
17.	Short-term investments		
18.	Unit trust		
19.	Listed shares		
20.	Pension or provident fund		
21.	Insurance (household/car)		
22.	Life assurance		
23.	Medical aid fund		
24.	Hospital plan		
25.	Funeral benefit		
26.	Member of stokvel		
27.	Money hidden in home		

28. **What is the approximate percentage of nett income (after deductions) per year that <u>you</u> save or invest? Examples of savings include 32 day notice deposit, retirement fund (additional to any compulsory pension payments, as required by your employer), long-term investment or any other means of saving money**

0% - 4%	5% - 9%	10% - 14%	15% - 19%	Other please specify

How many of each of the following do you have? (if left blank, then 0 is assumed)

	Type of cards	**Number**	**Personal reason for use or non-use**
29.	Credit cards		
30.	Debit cards		
31.	Store cards (eg Edgars)		
32.	Loyalty cards (eg Voyager)		
33.	Other – please specify		

34. **Describe your current economic status (choose only ONE):**

Well-off and it's sustainable	Well-off but things looks uncertain	Satisfactory	It's tough, but likely to improve	It's tough and doesn't look likely to improve

35. **Have you been exposed to specific financially-related training or information sessions? (please exclude the feedback from your Moneymax questionnaire):**

Yes	No

36. **Specify if yes:** ____

37. **How do you rate your level of financial knowledge (literacy):**

Poor	Fair	Good	Excellent

38. **In the time between receiving your Moneymax feedback report and completing this questionnaire, how has your <u>attitude</u> toward money matters changed?**

No change	Slight change	Significant change	Radical / dramatic change

39. **In the time between receiving your Moneymax feedback report and completing this questionnaire, how has your <u>behaviour</u> toward money changed?**

No change	Slight change	Significant change	Radical / dramatic change

40. **If you had enough money, what would it give you? (choose only ONE):**

Security	Freedom	Love	Happiness	Respect	Power

41. **Would you like to receive feedback on the results of this research, including reference to your own responses? Please note that this will take a few months to process.**

Yes	No

Section B: Financial Orientations

Orientation 1

Instructions: Kindly read each statement and place an "**X**" in the block that is most applicable to you.

	Statement	Strongly disagree (1)	Dis-agree (2)	Mode-rately disagree (3)	Mode-rately agree (4)	Agree (5)	Strongly agree (6)
42.	Whether or not I get to be a leader depends mostly on my ability						
43.	When I make plans, I am almost certain to make them work						
44.	When I get what I want, it's usually because I'm lucky						
45.	I have often found that what is going to happen will happen						
46.	I can pretty much determine what will happen in my life						
47.	I am usually able to protect my personal interests						
48.	When I get what I want, it's usually because I worked hard for it						
49.	My life is determined by my own actions						

Orientation 2:

Instructions: Kindly read each statement or phrase on either side of the numbers 1 to 8. Place an "**X**" over the number that indicates how closely you relate to that behaviour. Use the example to better understand the instructions.

Express emotions	**X**	2	3	4	5	6	7	8	Repress emotions

By choosing 1, you state that it is extremely true of you to express your emotions, while if you had marked the 8, it would mean that it is extremely true of you to rather repress your emotions.

50.	Casual about appointments	1	2	3	4	5	6	7	8	Never late
51.	Not competitive	1	2	3	4	5	6	7	8	Very competitive
52.	Never feel rushed even under pressure	1	2	3	4	5	6	7	8	Always rushed
53.	Do things one at a time	1	2	3	4	5	6	7	8	Try to do many things at once
54.	Doing things slowly	1	2	3	4	5	6	7	8	Doing things quickly (eg eating, walking)
55.	Express feelings	1	2	3	4	5	6	7	8	Withhold feelings
56.	Many interests	1	2	3	4	5	6	7	8	Few interests outside work

Orientation 3

Instructions: Kindly read each statement and place an "**X**" in the block that is most applicable to you.

	Statement	Never (1)	Almost never (2)	Seldom (3)	Occa-sionally (4)	Very often (5)	Always (6)
57.	I do financial planning for the future						
58.	I put money aside on a regular basis for the future						
59.	I save now to prepare for my old age						
60.	I keep track of my money						
61.	I follow a careful financial budget						
62.	I am very prudent with money						
63.	I have money available in the event of another economic depression						

Section C: Optimal Financial Attitude and Behaviour

Instructions: Kindly read each statement, question or instruction and place an "**X**" or answer in the relevant block.

I believe people should save or invest money for the following purposes:

	Purposes	Strongly disagree (1)	Dis-agree (2)	Moderately disagree (3)	Moderately agree (4)	Agree (5)	Strongly agree (6)
64.	Education						
65.	Unexpected expenses						
66.	Retirement						
67.	Donations to charity						
68.	For luxury items						
69.	Other (specify)						

If I have money to save or invest, I will use it for the following purposes:

	Purposes	Strongly disagree (1)	Dis-agree (2)	Moderately disagree (3)	Moderately agree (4)	Agree (5)	Strongly agree (6)
70.	Education						
71.	Unexpected expenses						
72.	Retirement						
73.	Donations to charity						
74.	For luxury items						
75.	Other (specify)						

Please indicate the extent to which you disagree or agree with the following statements:

	Statement	Strongly disagree (1)	Dis-agree (2)	Moderately disagree (3)	Moderately agree (4)	Agree (5)	Strongly agree (6)
76.	I think budgeting is essential to get ahead						
77.	I have to budget because my financial self-control is weak						
78.	Budgeting limits my financial freedom						
79.	Budgeting helps me survive in the current economy						
80.	I buy what I like now and worry about the account later						
81.	Discipline in my budget is more important than capitalising on unique offers						
82.	I prefer to spend now because I may not have the opportunity later						
83.	I believe that credit cards encourage unnecessary spending						
84.	I prefer using a credit card above other means of in-store payments						
85.	I do not care about what my social group thinks of my lifestyle, I prefer to live within my means						
86.	I choose to live modestly despite the fact that I can afford a more extravagant lifestyle						
87.	My social group does not regard material things as important						
88.	The opinion of my social group about the material things a successful person should have, does not matter to me						

Indicate to what extent the following statements describe your behaviour

	Statement	Extremely unlike me (1)	Moderately unlike me (2)	Slightly unlike me (3)	Slightly like me (4)	Moderately like me (5)	Extremely like me (6)
89.	I draw up a budget or a financial plan and stick to it						
90.	I only draw up a budget before a big event						
91.	I do not know how to draw up a budget						
92.	I normally pay my accounts on time						
93.	I pay only the minimum required on my accounts						
94.	I normally pay the outstanding balance on my credit card every month						
95.	I use credit to buy furniture and other luxury items						
96.	I can comfortably afford my vehicle expenses						
97.	When I experience excessive debt, I rely on my own wisdom to find a solution rather than consult a professional financial advisor						
98.	When I have built up more debt than I can settle at the end of the month, I prioritise the accounts and try to settle them as soon as possible						
99.	I insist on managing my investments, shares and/or unit trusts myself						
100.	I prefer to make use of the services of a broker when I consider investments						
101.	I consult other knowledgeable people and follow their guidelines before I invest						
102.	I save now so that I can spend more later						
103.	I buy what I like now even if it means going into debt						
104.	I am prepared to wait for items to come onto a sale if I can't afford them now						
105.	I'm patient enough to use a lay-buy system (pay-off the item but don't get to use it until later)						

Section D: Sources of financial status

Rate the extent to which each of the following factors has contributed to your current financial status:

	Factor	Not at all (1)	Slightly (2)	Moderately (3)	Extremely much (4)
106.	My career choices				
107.	My ability to control my income and expenses				
108.	Windfall (inheritance, lottery win)				
109.	Thinking of others more than myself				
110.	Taking risks				
111.	My education level				
112.	Luck				
113.	My spouse / partner				
114.	Unexpected life-circumstances (divorce/widowed)				
115.	Working hard				
116.	Learning from past mistakes or successes				
117.	Trusting others				
118.	Self-esteem				
119.	I was born into it				
120.	Living in South Africa				

How much did the following contribute to your financial habits?

	Factor	Not at all (1)	Slightly (2)	Moderately (3)	Extremely much (4)
121.	My mother				
122.	My father				
123.	School				
124.	Attending courses				
125.	Self-taught e.g. reading				
126.	Watching TV				
127.	Seeing what others do				
128.	Religion				
129.	Culture				
130.	I just know how				
131.	If other, please specify				

Rate the importance of the following for ones financial well-being

	Factor	Not at all (1)	Slightly (2)	Moderately (3)	Extremely much (4)
132.	Saving				
133.	Not having excessive debt				
134.	Having fixed assets				
135.	Keeping records of finances				
136.	Planning for retirement				
137.	Maintaining healthy body weight				
138.	Self-control				
139.	Delayed gratification				
140.	Budgeting				
141.	Having financial knowledge				

THANK YOU FOR TAKING THE TIME TO COMPLETE THE QUESTIONNAIRE

APPENDIX F:

Informed consent letter

UNIVERSITEIT•STELLENBOSCH•UNIVERSITY
jou kennisvennoot•your knowledge partner

Dear research participant

You are invited to participate in a research study conducted by Ms Cindy Prinsloo, from the Department of Industrial Psychology at Stellenbosch University. This is part of her thesis in obtaining her Master in Commerce degree.

1. PURPOSE OF THE STUDY

The study will attempt to identify optimal financial attitudes and behaviour which will assist you to be financially independent by the time you retire.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following:

Download or print the attached questionnaire. Complete it in full and as truthfully as possible. Return by email to bcprinsloo@telkomsa.net or facsimile 044 xxx with your name and surname on the email or facsimile only so that your MoneyMax profile (already have the profile on file) can be linked to the completed questionnaire. No need to be concerned about your personal details being mentioned in the research, all participants remain anonymous. Ms Prinsloo will send one reminder email or facsimile if no response is received within two (2) weeks. No more communication will be sent after that. Once again we assure confidentiality in this research.

3. POTENTIAL RISKS AND DISCOMFORTS

None, other than the 30 minutes it will take to complete the questionnaire.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The findings of the research will assist you to better understand the behaviours and attitudes that ultimately lead to financial independence. If more South Africans understand how to be financially secure, more people can truly afford to retire, there is less strain on the government to support pensioners and those who have retired are better off than ever.

5. PAYMENT FOR PARTICIPATION

No sorry, this is strictly on a voluntary basis.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of allocating a unique number to your completed questionnaire and that same number for the MoneyMax data already on file.

The research results are reported in a thesis which is then placed in the University library. The results may also be published in financial or academic journals, but once again, no names are mentioned what-so-ever.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to participate in this study or not. If you volunteer, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The researcher may withdraw you from this research if circumstances arise which warrant doing so, such as significant omissions rendering the data incalculable. That would be a pity!

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Cindy Prinsloo after hours on 044 xxx or office hours 044 xxx. Kindly note that she is a part-time student and may not be able to answer your call immediately during working hours.

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

In conclusion, by returning the attached questionnaire you consent to the researcher being supplied your MoneyMax profile and therefore volunteer to be a participant in the study.

We are excited about this research, hope you too want to know more about what it takes to be financially independent.

Yours in wealth

Cindy Prinsloo

(Student nr 12664405 – research supervisors Prof Ronel du Preez and Prof Johan Malan)

APPENDIX G:

Follow-up e-mail for non-responses

Hello **XXX**

Two weeks ago I approached you and numerous other people to be a volunteer in my research. The letter describing the research mentioned that 1 reminder email would be sent if no response was received.

I therefore ask again if you would be willing to complete the questionnaire that was sent. It can be forwarded again if you like. It would be of immense value to me to have as many participants as possible.

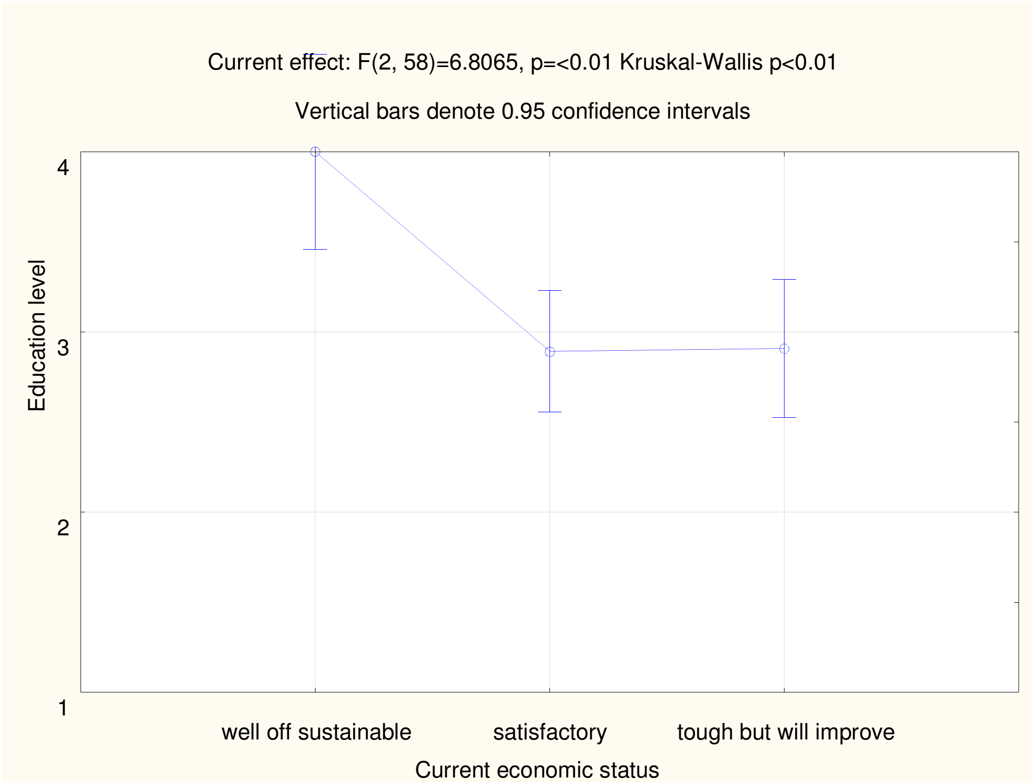
Kind regards

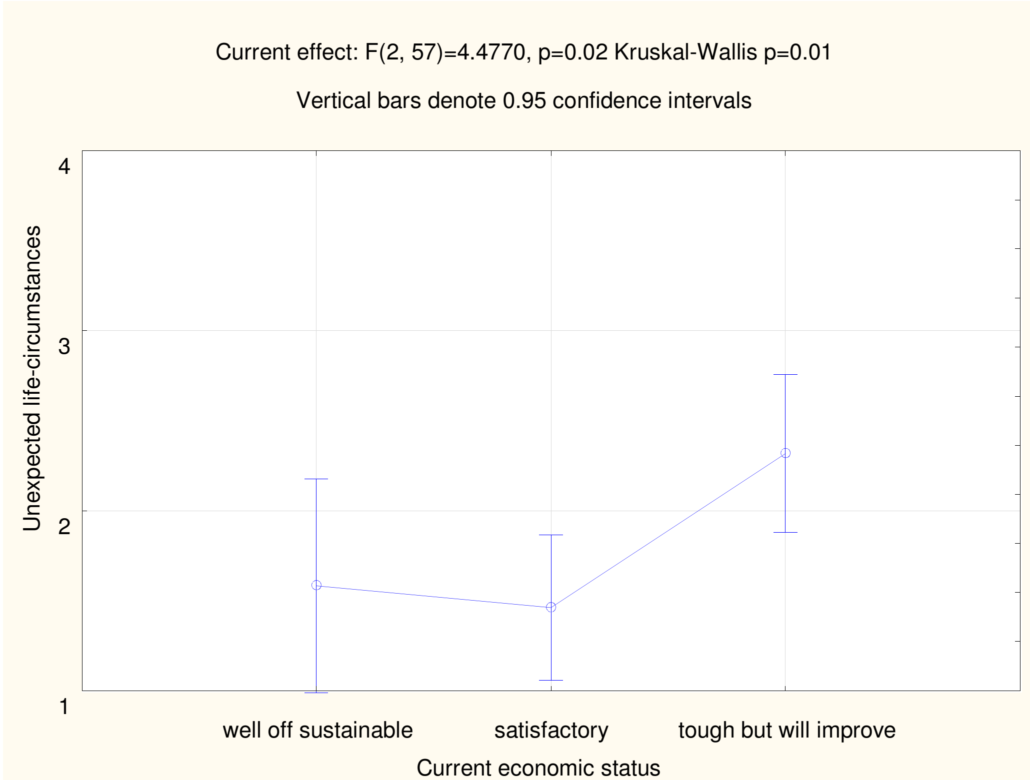
Cindy Prinsloo

044 XXXX (h)

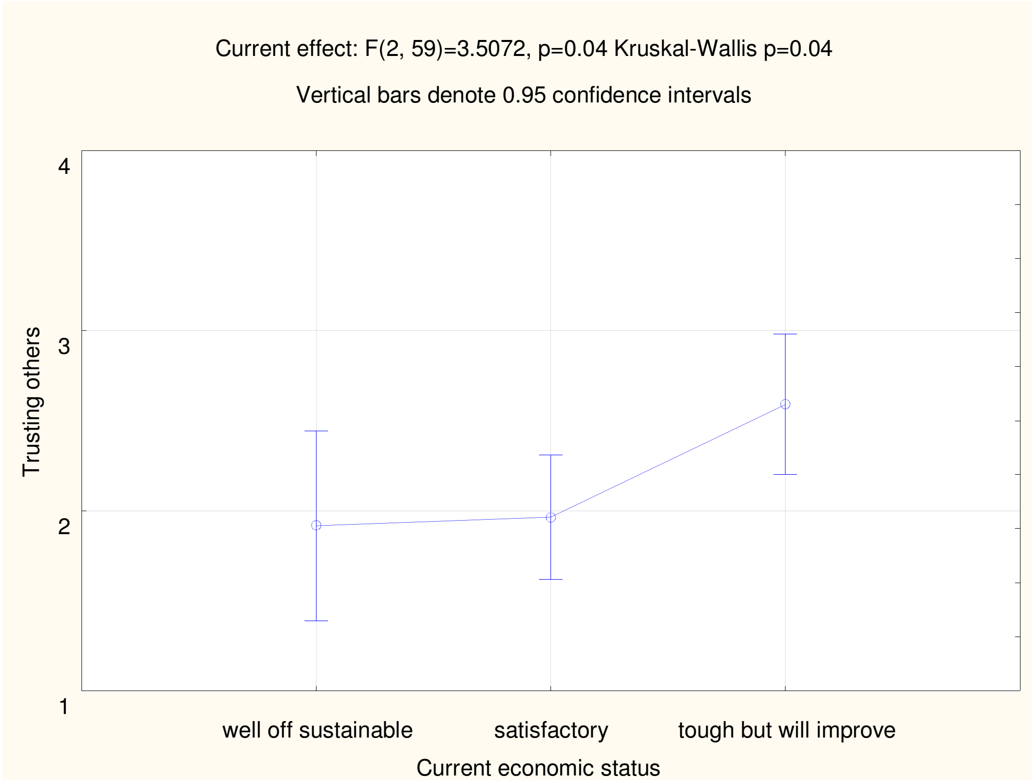
bcprinsloo@telkomsa.net

APPENDIX H:
ANOVA graphs: economic status versus other factors





Current effect: F(2, 57)=4.4770, p=0.02 Kruskal-Wallis p=0.01
Vertical bars denote 0.95 confidence intervals
Unexpected life-circumstances
4
3
2
1
well off sustainable
satisfactory
tough but will improve
Current economic status


Current effect: F(2, 59)=3.5072, p=0.04 Kruskal-Wallis p=0.04
Vertical bars denote 0.95 confidence intervals
Trusting others
4
3
2
1
well off sustainable
satisfactory
tough but will improve
Current economic status

APPENDIX I:

Multiple regression model summary: locus of control

R^2=.53

F(13,53)=4.601 p<.00003 Std. error of estimate: 3.6970

N=67	b^*	**Standard error of** b^*	p**-value**
MM Involvement	-.011	.111	.918
MM Pride	.335	.115	.005
MM Emotionality	-.022	.111	.843
MM Altruism	.164	.106	.127
MM Confidence	.336	.108	.003
MM Power	.086	.117	.463
MM Work Ethic	.078	.120	.518
MM Contentment	-.053	.130	.685
MM Risk taking	.049	.111	.657
MM Self-determination	.184	.106	.089
MM Spending	-.096	.118	.416
MM Reflectivity	.161	.107	.137
MM Trust	-.418	.106	.0002

APPENDIX J:

Multiple regression model summary: type

R^2=.26

F(13,53)=1.423 p<.18006 Std. error of estimate: 6.3277

N=67	b^*	Standard error of b^*	p-value
MM Involvement	.007	.139	.958
MM Pride	-.043	.145	.765
MM Emotionality	-.204	.140	.149
MM Altruism	.069	.133	.605
MM Confidence	.130	.136	.346
MM Power	.053	.147	.719
MM Work Ethic	.141	.151	.355
MM Contentment	-.027	.163	.867
MM Risk taking	.220	.139	.119
MM Self-determination	.055	.134	.680
MM Spending	-.185	.148	.218
MM Reflectivity	.146	.134	.283
MM Trust	-.219	.133	.106

APPENDIX K:

Multiple regression model summary: time orientation

R^2=.42

F(13,53)=2.959 p<.0026 Std. error of estimate: 5.1516

N=67	b^*	Standard error of b^*	p-value
MM Involvement	-.027	.123	.825
MM Pride	.217	.128	.097
MM Emotionality	-.119	.123	.339
MM Altruism	.158	.117	.183
MM Confidence	-.090	.121	.459
MM Power	-.129	.130	.326
MM Work Ethic	.144	.134	.286
MM Contentment	.338	.144	.023
MM Risk taking	.101	.123	.414
MM Self-determination	-.114	.118	.339
MM Spending	-.187	.131	.160
MM Reflectivity	.090	.119	.450
MM Trust	-.202	.118	.093

APPENDIX L:

Multiple regression model summary: budgeting

R^2=.58

$F(13,52)=5.5667$ $p<.00000$ Std. error of estimate: 5.5121

N=66	b^*	**Standard error of** b^*	*p*-value
MM Involvement	.058	.105	.585
MM Pride	.128	.109	.244
MM Emotionality	-.178	.106	.097
MM Altruism	.062	.099	.534
MM Confidence	.121	.103	.243
MM Power	.013	.111	.905
MM Work Ethic	.219	.115	.062
MM Contentment	.321	.124	.012
MM Risk taking	-.248	.106	.023
MM Self-determination	-.308	.101	.003
MM Spending	-.225	.111	.047
MM Reflectivity	.075	.102	.467
MM Trust	.189	.100	.064

APPENDIX M:

Multiple regression model summary: social referents

R^2=.46

F(13,52)=3.4756 p<.00066 Std. error of estimate: 2.7228

N=66	***b****	**Standard error of *b****	***p*-value**
MM Involvement	-.029	.119	.803
MM Pride	-.230	.124	.070
MM Emotionality	-.281	.124	.028
MM Altruism	.054	.115	.637
MM Confidence	.013	.117	.909
MM Power	-.085	.127	.503
MM Work Ethic	-.122	.130	.393
MM Contentment	.426	.137	.003
MM Risk taking	.276	.120	.025
MM Self-determination	-.091	.114	.426
MM Spending	-.226	.127	.080
MM Reflectivity	-.0006	.115	.995
MM Trust	-.277	.115	.019

APPENDIX N:
Multiple regression model summary: financial discipline

R^2=.24

F(13,47)=1.1689 p<.3307 Std. error of estimate: 3.2924

N=61	b^*	Standard error of b^*	p-value
MM Involvement	-.030	.151	.842
MM Pride	.105	.156	.505
MM Emotionality	-.347	.155	.030
MM Altruism	-.198	.146	.180
MM Confidence	-.017	.145	.902
MM Power	.198	.165	.236
MM Work Ethic	-.294	.163	.077
MM Contentment	.134	.174	.444
MM Risk taking	.013	.147	.929
MM Self-determination	-.053	.148	.721
MM Spending	.303	.165	.073
MM Reflectivity	.010	.142	.941
MM Trust	-.115	.144	.426

APPENDIX O:

Multiple regression model summary: control of investments

R^2=.43

F(13,53)=3.075 p<.00191 Std. error of estimate: 3.1383

N=67	b^*	**Standard error of** b^*	***p*-value**
MM Involvement	-.293	.122	.019
MM Pride	-.206	.127	.111
MM Emotionality	-.086	.122	.483
MM Altruism	.203	.116	.087
MM Confidence	.011	.120	.922
MM Power	-.161	.129	.215
MM Work Ethic	.136	.132	.308
MM Contentment	.256	.143	.080
MM Risk taking	-.360	.122	.004
MM Self-determination	.113	.117	.337
MM Spending	.293	.130	.028
MM Reflectivity	.255	.118	.035
MM Trust	.122	.117	.301

APPENDIX P:

Multiple regression model summary: delayed gratification

R^2=.33

F(13,50)=1.8949 p<.0537 Std. error of estimate: 3.2735

N=64	b^*	Standard error of b^*	p-value
MM Involvement	.057	.137	.676
MM Pride	-.027	.141	.847
MM Emotionality	-.152	.132	.256
MM Altruism	.130	.130	.322
MM Confidence	-.178	.134	.188
MM Power	.175	.146	.235
MM Work Ethic	.072	.148	.627
MM Contentment	.416	.160	.012
MM Risk taking	.084	.135	.534
MM Self-determination	.044	.132	.737
MM Spending	-.206	.143	.155
MM Reflectivity	-.047	.131	.718
MM Trust	-.149	.130	.260